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## Research Article

# DEVELOPMENT OF DIGITAL PLATFORMS FOR SERVICES OF TRANSPORT-LOGISTICS PROVIDERS

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## ABSTRACT

This article discusses the development of transport and logistics providers' services based on the use of digital platforms, discusses the introduction of modern digital technologies into the practical activities of transport and logistics providers in order to improve business models, strategic planning methods, and improve interaction. A scientific hypothesis has been put forward about increasing the productivity and economic efficiency of transport and logistics processes among all subjects of the transport market, an analysis of the world experience in using digital logistics platforms has been carried out, the concept of a platform for the development of services of digital transport and logistics providers has been substantiated.

## KEYWORDS

Digitalization, provider, logistics, transport, digital platforms, supply chain tracking, electronic document management.

## INTRODUCTION

The introduction of modern digital technologies into the practical activities of transport and logistics provider companies in modern economic conditions allows them to improve their business models, strategic planning methods, improve interaction with other entities of the shipping market, increase the efficiency and economic efficiency of transport and

logistics processes. In particular, due to digital innovation in recent years, close ties (cooperation) are being formed between enterprises in logistics and other industries such as retail, which leads to the emergence of innovative digital solutions and startups in the last mile of cargo delivery [3].

Literature review. Russian scientist S. O. Kalenjan noted in his scientific articles about the implementation of an integrated information system through a centralized platform for optimizing transport-logistics processes, operational planning and management of processes of movement of materials, energy and information flows, and ensuring the transparency of operations throughout the supply chain. Also, a number of European scholars have suggested that H. B. Jimhane, R. Shahin, G. L. Tortorella, K. Chimini, A. Lagorio, D. Romero, S. Cavaliere, Y. Stare s have conducted their scientific research, saying that the concept of digitization of logistics is based on the formation of significant competitive advantages in terms of speed, supply,

price, which allow them to meet the constantly changing needs of consumers.

**RESEARCH METHODOLOGY**

Digital platforms are playing an increasingly important role in logistics, allowing small companies to enter the global market and compete with industry leaders. The creation of a dominant global platform over the next few years will change the nature of the interaction between customers and logistics service providers in logistics, and will be a major factor in determining which businesses will dominate the new, digital logistics industry (Table 1) [9].

**Table 1**  
**Features of the digital platform for Transport and logistics providers**

Criteria	Features
Subjects	Participants of Transport logistics provider systems: suppliers and consumers of transport Logistics Provider Services and resources, platform operators, regulators.
Functional specialty	Development and implementation of software-hardware platform solutions in order to obtain additional economic value and exchange information in the Transport-logistics market, as well as providing innovative digital services and information for decision-making.
Data processing technology	Processing and analysis of information on the conclusion and execution of transactions between several entities of the Transport and logistics market, general details and tracking of transactions.
Result of activity	Information necessary for making decisions in the implementation of transport and logistics activities, transactions, transactions, which determines the exchange of services between the entities of the Transport and logistics market.
Software platforms	UBER, TradeLens, TRIP, Ware2Go, Cainiao, GroozGo, iCanDeliver, Axelot TMS, ATI, Coyote, Moovel and etc.

An integrated digital logistics platform is an information and hardware and software environment for the algorithmized execution of operations and services of transport-logistics providers, as well as many algorithmic and economically feasible

relationships of a significant part of independent participants in transport-logistics systems. Creating a single integrated information environment, which leads to a reduction in total logistics costs due to the use of a digital ICT (information communication

technologies) suite to work with logistics data at any level (Figure 1) [2].

The principles of creating logistics platforms include:

- Algorithmization of interaction between platform participants;
- Mutually beneficial relations between platform participants (principle “win-win”);
- Importance (scale) of the number of participants in activities that use the platform for mutual cooperation;
- The presence of a single information environment in which interaction between participants is carried out and an infrastructure of relevant digital technologies;
- The presence of an effect in the form of reducing transaction costs when interacting with different platform participants in relation to the same interaction without the platform.

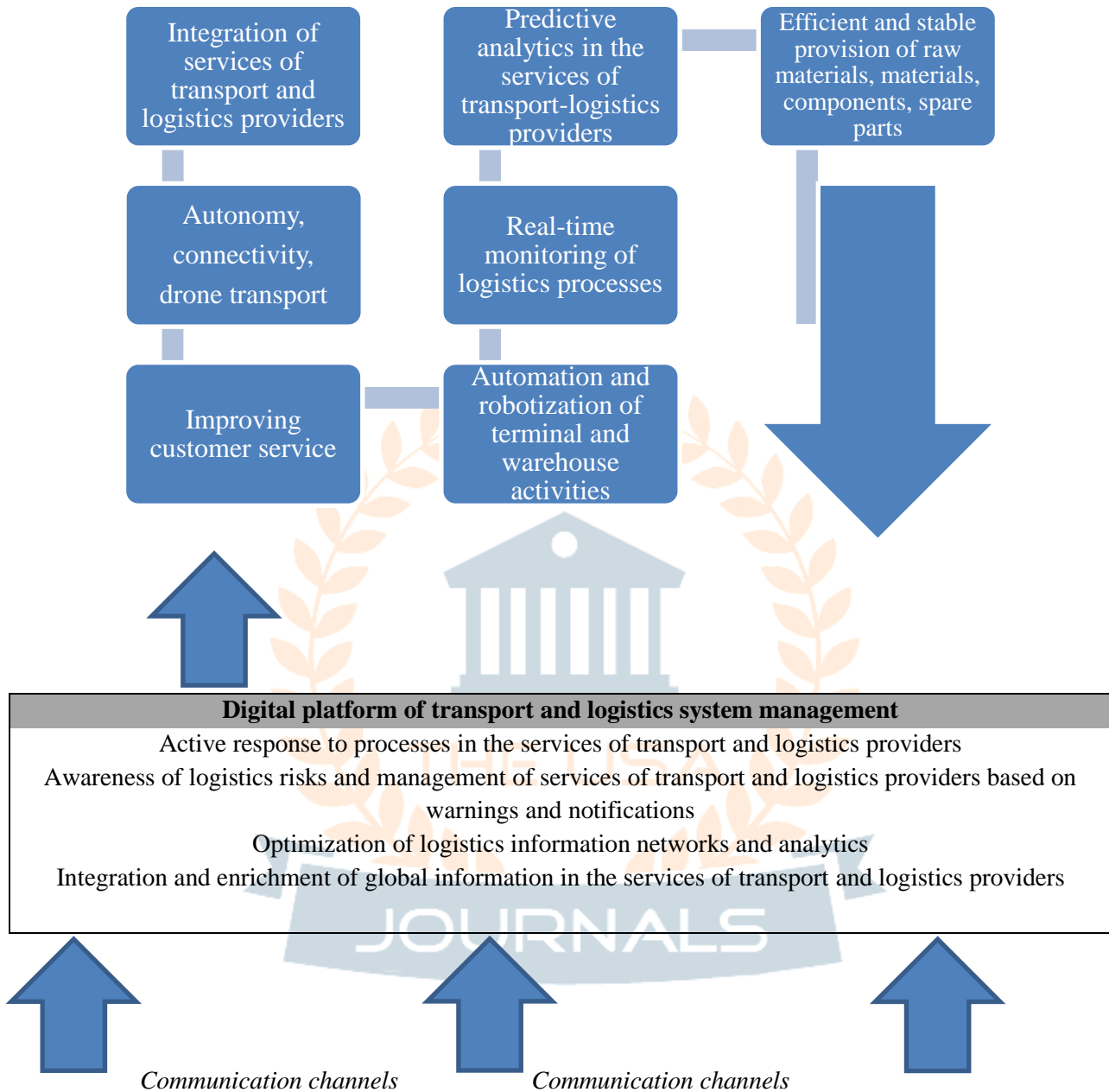
The introduction of modern digital platforms is the main aspect of the stable and reliable operation of

transport-logistics systems, since it provides effective information exchange. Currently, in traditional transport-logistics systems, there are errors and malfunctions in the interaction between entities in the management of flows, which are primarily associated with a complete and timely lack of information. There are many reasons for the unstable operation of Transport-Logistics Systems (risk factors): sudden changes in demand for transport services, non-fulfillment of obligations under contracts, shortage of raw materials, natural disasters, etc. These situations can have serious consequences and affect the implementation of even the most carefully developed plans in transport and logistics systems. In addition, attempts to outsource many business processes can only lead to a complication of interaction between the subjects of transport-logistics systems, reduce the ability to monitor the state of transport-logistics transport processes, make it difficult to effectively respond to problems arising in the delivery of cargo [4].

Figure 1

A digital platform model for the services of transport and logistics providers

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Data exchange and transfer	Information on the status of services of transport and logistics providers (sea, road, railway, air transport)	Data integration and enrichment
Corporate information systems	Information channels of interaction	Social hearing control

Databases of suppliers and consumers of services of transport and logistics providers	Control, monitoring and tracking devices and sensors	Weather forecast
Application platforms	Robotic technologies for packing and preparing goods for shipment	News and warnings
Transport management systems	Linking software	Traffic flow forecasting

Figure 1 Digital platform model for services of transport and logistics providers

In this regard, it should be recognized that one of the main arguments for the digitization of the systems of transport and logistics providers is the formation and development of open logistics networks, as well as the provision of global monitoring. B2C is moving towards the ideology of closer interaction and functional and operational convergence of suppliers and consumers of transport and logistics services in order to ensure a high level of monitoring of transport and cargo flows in the market segment, and notifications about cargo arriving with real-time updates are also improving [4].

Analysis and results. The global experience of the transition to platform technologies includes the acquisition of digital startups and the competition

among leading transport-logistics provider companies in the speed of launching integrated digital transport-logistics platforms.

DHL Freight has introduced CILLOX, a digital freight platform, which is positioned as a virtual marketplace for companies that consume transport services and is designed to optimize the loading of rolling stock in three main ways (Figure 2):

- Full truckload (or FTL);
- Partial truckload (or PTL);
- Less than truckload (or LTL).

Figure 2

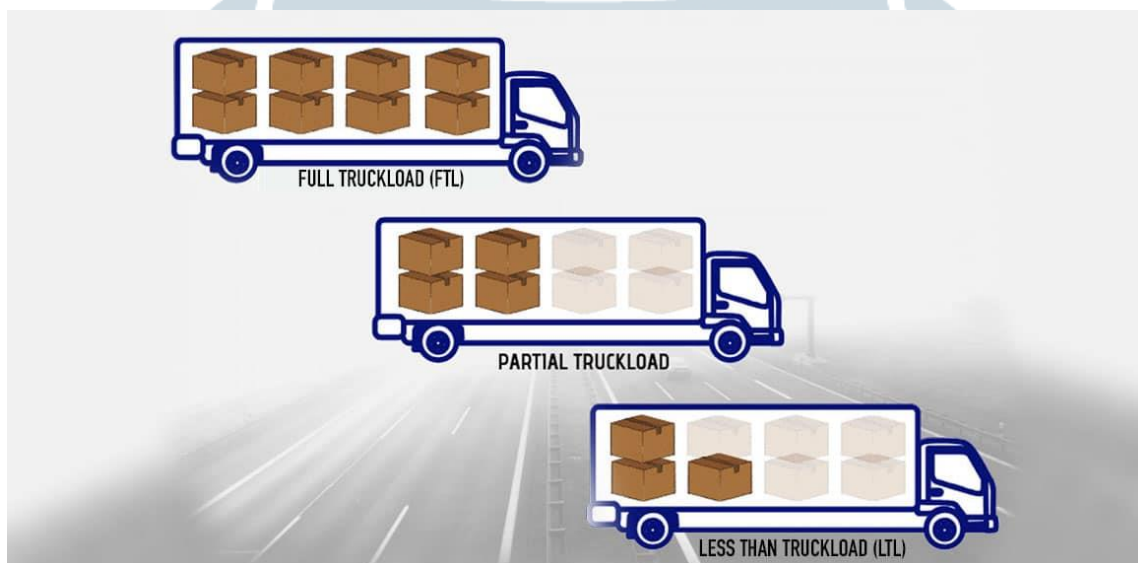




Figure 2. Types of cargo loading

It also consists in finding a supplier of services of transport and logistics providers according to the needs of the cargo owner. This service allows truckers to control and monitor transport-logistics processes to the end (end or E2E) within the framework of a single platform, and transport providers receive guarantees of speed and speed of payment for services performed (absence of cash interruptions) and optimization of document circulation in terms of the formation of commodity-transport documents, including accounting sheets and invoices are regulated [11].

In the Netherlands, The Digital cargo platform Saloodo was launched, which integrated senders into a single digital cargo market both for domestic transportation in the Netherlands itself and for international shipments from the Netherlands to other EU countries and back-to-back. The platform currently brings together more than 10,000 shippers, more than 6,000 forwarders and about 250,000 rolling stocks.

Examples of logistics platform solutions based on Blockchain digital technology used by large transport and logistics companies as well as small and medium-sized enterprises are presented in Table 2 [13].

Table 2  
Digital technology-based logistics platforms

Platform name	The company that uses the platform	Functional task
TradeLens	Maersk	- managing incidents throughout the delivery lifecycle; - checking the creditworthiness of counterparties, signing smart contracts, port arrival and payment.
TRIP	-	- fleet management; - job distribution; - collect and maintain information from various sources about warehouses, ports, forwarders and shippers.
Cainiao	Alibaba	- intelligent routing and sorting services for cargo transportation for shipping companies.
Ware2Go	UPS	- forecasting the requirements; - optimization of the warehouse network (determining optimal warehouse locations based on forecasted customer requirements to increase delivery speed and reduce transportation costs)

**CONCLUSION**

The conclusions. Thus, the use of modern digital information technologies provides for an increase in

the level of services of transport and logistics providers, which implies the following invariable requirements: the cargo must be delivered to the place

of delivery in time, a certain amount and quality, and additional services must be provided at a certain time, the required volume, a certain place and the appropriate quality. The formation of Transportation should be simple and convenient, the shipping route should be chosen economically and wisely, both by carriers and consumers of transport services: it should be acceptable to forwarders, freight owners, operators and other participants in the transportation process.

The main objectives of creating a logistics system for managing cargo flows are as follows:

- elimination of obstacles in transportation of goods through connecting points of transport hubs;
- increase the efficiency of the transportation process with the participation of several types of transportation;
- accelerating the movement of foreign trade goods in various cyclical movements;
- Attracting additional cargo flows to transport corridors passing through the territory of Uzbekistan;
- reduction of damage caused to cargo during transportation.

In short, achieving these goals through digitization should reduce cargo owners' costs and increase the profitability and sustainability of transport-logistics systems.

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