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Digital Platforms as a Catalyst for Logistics Development and Process Optimization

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Abstract

The development of enterprise competitiveness is strongly influenced by the digitalization of business processes and the integration of advanced information technologies. The purpose of this study was to analyze digital management tools and assess their impact on the efficiency and adaptive capacity of Ukrainian enterprises during 2023–2025. The research employed analytical and economic methods, comparative analysis, systematization, generalization, synthesis, and classification and correlation approaches. The information base included data on business process digitalization, performance indicators of ERP and CRM systems, digital platforms, and analytical materials on the application of IoT, blockchain technologies, artificial intelligence, cloud solutions, and Big Data. The results demonstrate a positive relationship between business process digitalization and enterprise competitiveness. The implementation of digital platforms integrating production, financial, marketing, and logistics functions, along with automated analytics and AI-driven tools, enables faster managerial decision-making, greater operational transparency, and cost reduction. These factors contribute to enhanced business flexibility, the development of innovative staff competencies, and increased adaptive potential. Enterprises with a high level of digital transformation show higher productivity, lower operating costs, improved product and service quality, and stronger customer interaction. Case examples from Ukrainian

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companies, including Myronivskyi Hliboproduct, Nova Poshta, Foxtrot, Varus, and Aurora, confirm the practical effectiveness of digitalization. Overall, digital transformation is a strategic instrument for strengthening enterprise competitiveness in a dynamic global environment.

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Keywords: digital platforms, logistics processes, digital transformation, supply chains, competitiveness.

JEL Codes: L91, L92, O33, M15

1. Introduction

The modern development of digital technologies significantly affects business processes around the world, which creates global challenges for companies and necessitates the implementation of innovative solutions and approaches to organizing effective management.

The logistics process ensures the efficient use of internal resources of the enterprise, as well as the organization of transportation, placement, packaging and delivery of goods or products (Hurzhyi et al., 2023). The introduction of digital technologies contributes to the optimization of most logistics' operations and the formation of safe conditions for shipping and business operations (Cherniavskyi et al., 2025). In this context, the significance of digital research in logistics process management is defined as a key priority for the development of modern business.

In the context of martial law and economic instability, the digitalization of logistics is becoming particularly relevant for Ukrainian enterprises. For example, Nova Poshta has developed its own parcel tracking system, which allows customers to receive up-to-date information about the location of their shipments in real time. This approach ensures an increase in the level of service and a decrease in the number of calls to the support service (Popelo et al., 2023).

In 2018, Raben Ukraine implemented electronic document management, which helped reduce the time for processing documents by 30–50% (Kovalenko, 2023). It is appropriate to quote the words of V. Kovalenko here: "Electronic document management significantly contributed to the rapid restoration of our operational processes during the pandemic and war. When most of the employees of Raben Ukraine were out of the office, the authors still received documents from suppliers, paid bills through Vchasno, and avoided any delays. The authors also sent invoices to our customers for payment. There are risks that are extremely difficult to control today, but the risk of going bankrupt just because your customers did not receive invoices is a serious matter" (Kovalenko, 2023).

Pet food manufacturer Kormotech integrated the CONSOLID.AI platform to optimize logistics processes. The implementation of this digital system resulted

in reduced transportation costs, increased delivery speed, and improved customer service (Kormotech, 2023).

The use of digital platforms in logistics processes demonstrates their high effectiveness as a tool for increasing the competitiveness of Ukrainian enterprises. The introduction of innovative digital solutions contributes to reducing costs, improving the quality of customer service, and adapting businesses to changing market conditions.

Aims. The aim of the study is a comprehensive analysis of the role of digital platforms in the development of logistics processes of enterprises, based on the implementation of intelligent technologies for optimizing supply chains. The study is aimed at identifying effective mechanisms for increasing the efficiency and accuracy of logistics solutions, assessing the impact of digital platforms on inventory management, transportation and resource distribution, as well as increasing the competitiveness of enterprises in unstable economic conditions. The object of the study is digital platforms and systems for managing logistics processes of enterprises that integrate analytics and automation technologies to ensure the efficiency of supply chains.

2. Literature Review

The role of digital platforms in the development of logistics processes: analysis of scientific research

The development of digital platforms in logistics processes is one of the key areas of modern economic science, explained both by the global digitalization of the economy and by the need for enterprises to increase efficiency and competitiveness. Digital platforms integrate various functions of the logistics chain, provide rapid data exchange, analytical support for management decisions, and process automation, which contributes to resource optimization and improvement of customer service quality.

As O. Averkyna and I. Zahoruiko (2023) point out, the use of cloud technologies in logistics systems allows for operational access to large data sets and increases the flexibility of management decisions. Similarly, O. Gatylo and O. Shevchenko (2024) emphasize that the digitalization of the logistics chain contributes to the coordination of the enterprise's functional areas, allowing the integration of planning, transport, and warehousing into a single information system. Such integration not only optimizes resources but also contributes to increasing the transparency of operations and the timeliness of order fulfillment. In this context, N. Potapova (2019) also stresses that online trade logistics in the digital economy requires flexible technological solutions and new models of supply chain organization.

In the context of increasing enterprise competitiveness, O. Hlavatchuk and M. Derhaliuk (2024) investigate the factors that ensure effective provision of

logistics services in a digital environment. They emphasize that the integration of digital platforms into enterprise processes accelerates order processing, reduces costs, and improves customer service quality, directly affecting the company's market position. Similar conclusions are drawn by O. Hrynchak (2019), Hlavatchuk & Dergalyuk,(2024), who focuses on the impact of Internet of Things technologies on the organization of transport and logistics services and their efficiency.

Recent studies also highlight the role of automation, machine learning, and big data analytics in logistics. S. Hurzhyi et al. (2023) argue that digital technologies enable rapid analysis of operational indicators, allowing prompt adjustment of logistics routes and minimizing downtime risks. This view is supported by O. Chebanova and V. Volokhov (2023), who note that machine learning algorithms significantly improve the accuracy of logistics forecasting and the efficiency of transport management. K. Zrybnieva (2024) adds that introducing analytical and automated methods into logistics processes contributes to increasing productivity and overall supply chain efficiency.

An important aspect of logistics digitalization is the use of blockchain technologies and intelligent management systems. O. Lavrynenko (2020) notes that blockchain enhances transparency and security of operations, while O. Marhasova and T. Samoilovych (2023) emphasize that digital platforms integrate the marketing and logistics systems of enterprises, allowing process optimization and better resource management. Complementary insights are provided by Amconsoft (2021), where A. Kraschina, Head of Transport Department, highlights that the digital transformation of logistics enterprises demands a clear strategy for integrating innovative IT solutions and ensuring their interoperability.

In practical terms, the use of digital platforms and Big Data creates new opportunities for scaling services and improving partner interaction (S. Olifirenko, 2022). L. Popelo and A. Tkachenko (2023) add that intelligent management systems reduce costs, minimize transport downtime, and increase customer satisfaction – all critical for enterprises operating in dynamic competitive environments. In line with these trends, Ye. Pataliak (2024) underlines that full-scale digitalization of document flow in logistics significantly accelerates information exchange, reduces errors, and enhances control over operations.

No less important is the study of customs regulation of logistics processes under digitalization conditions (S. Reznik & I. Verbivskyi, 2022) and the development of the logistics 4.0 concept (N. Trushkina et al., 2021), which confirm that digital platforms not only optimize internal processes but also influence interorganizational interaction and supply chain integration. L. Shkrygun (2021) and O. Shostak (2020) analyze theoretical approaches to defining the concept of *digital logistics* and its prospects, emphasizing the need for systematic implementation of digital technologies to ensure enterprise competitiveness.

Digital platforms integrate the leading functional areas of the logistics chain, including planning, transportation, warehousing, accounting, and customer

interaction, which ensures effective data exchange and analytical support for management decisions (Gatilo & Shevchenko, 2024; Averkyna & Zahoruiko, 2023; Olifyrenko et al., 2022).

An important factor in the development of digital platforms is the regulatory and legal support for the digitalization of logistics. In Ukraine, the implementation of electronic document management is regulated by the Law of Ukraine "On Electronic Documents and Electronic Document Management" (Verkhovna Rada of Ukraine, 2013) and the Law "On Administrative Services" (Verkhovna Rada of Ukraine, 2003), which creates a legal basis for the automation of operational processes and ensures transparency in accounting for goods turnover. The implementation of the provisions of these acts allows enterprises to reduce transaction costs, increase the accuracy of documentation and ensure the continuity of logistics processes even in the conditions of remote work of personnel.

The state digitalization policy, defined by strategic documents such as the initiative Ukrainian Institute of the Future (2023) and the Strategy for the Development of the Electronic Communications Sector until 2030 (Cabinet of Ministers of Ukraine, 2021), is aimed at creating a single digital ecosystem. These documents provide for the implementation of high-speed data transmission networks, the Internet of Things, artificial intelligence, and integrated platforms for electronic interaction between business, the state, and citizens. The use of digital platforms in the logistics sector allows for the prompt exchange of information between various participants in the supply chain and to coordinate the processes of planning, transportation, and warehousing in real time (Makedon, et al., 2025; Trushkina et al., 2021). The current laws of Ukraine regulate electronic document management, digital signatures and electronic administrative services. The regulatory framework creates legal conditions for the functioning of enterprise information systems. However, some technological solutions, such as blockchain and smart contracts, do not have a clearly defined legal status. Legislation focuses mainly on classical models of electronic document management.

Thus, scientific research demonstrates that digital platforms are a key instrument for the development of logistics processes. They ensure the integration of business operations, automate workflows, enhance productivity and competitiveness, and contribute to the transparency and security of logistics activities within the modern digital economy. The combination of state digitalization policy, strategic initiatives and innovative technologies determines the modern trajectory of logistics development in Ukraine and ensures sustainable business development in the digital economy.

3. Methodology

The research methodology is based on a combination of qualitative analysis of logistics practices of enterprises and comparative analysis of operational indicators. The research design is aimed at identifying changes in the functioning of logistics processes after the integration of digital management platforms. The analysis

covers the transportation, warehousing, and information operations of enterprises in the logistics sector of Ukraine in the period of 2020-2025.

Research materials. The empirical basis is based on analytical reports of logistics companies, industry research on the transport market, corporate case studies, and statistical reviews of the development of digital solutions in logistics. The sample includes examples of companies that use different levels of digital integration of logistics processes. The information sources contain data on order processing time, the level of document flow automation, the use of warehouse and transport management systems, and the characteristics of digital platforms integrated into logistics activities.

Research methods. The case study method was used to analyze the practice of implementing digital platforms at enterprises. Comparative analysis is used to compare the operational performance of logistics systems before and after the integration of digital tools.

The content analysis of documentary sources made it possible to systematize information about technological solutions used by enterprises. The classification approach was used to group companies by the level of digital integration of logistics systems. The obtained results are interpreted through the analysis of organizational changes in the structure of logistics processes of enterprises.

4. Findings

Modern digital and automated solutions for managing logistics processes in the context of economic transformation

In the new conditions of development of digital technologies, the issue of their implementation and optimization acquires strategic importance in improving the quality of economic, financial and logistical activities of enterprises. Logistics process management involves a set of measures aimed at forming effective management methods, ensuring the functioning of transport, warehouse and operational units, as well as integrating information flows within a single resource management system. The use of digital infrastructure creates conditions for expanding the capabilities of the enterprise, increasing its competitiveness and accelerating logistics operations (Marhasova & Samoilovych, 2023).

The term “digital technologies” covers a set of software, information and telecommunication tools used to process data, automate operations and support management processes. This group includes analytical systems, data processing algorithms, cloud services, artificial intelligence tools, and sensor monitoring systems. The term “digital platforms” refers to integrated software environments that combine various information modules and ensure interaction between participants in the logistics process. Such systems coordinate the exchange of data between transport operators, warehouses, suppliers and customers, and form a

single information space for logistics management. The term "digital solutions" is used to refer to specific application tools or software products that are implemented at enterprises to perform specific management or operational functions. These include specialized transport management modules, warehouse information systems, electronic document management services, and other application software systems.

Smart Logistics and Logistics 4.0 have developed rapidly, based on automated technologies, robotic solutions, the use of big data and cloud computing. They ensure dynamic adaptation of logistics processes to environmental changes, integration between all participants in the supply chain and reduction of transaction costs (Trushkina et al., 2021). Digital logistics is gradually transforming into a system with a high level of interaction between information flows, transport resources and management solutions, which allows to increase the efficiency of business processes in the industrial and trade sectors.

At the same time, logistics management remains a complex process that requires a balanced combination of economic and technological tools. Of particular importance are established relationships with suppliers, quality control of goods, security of trade routes and flexibility in responding to external challenges. Changing vectors of development of transnational corporations and instability of global supply chains determine the need for digital technologies as a key factor in the stability and adaptability of logistics systems (Popelo & Tkachenko, 2023).

After the beginning of the Industry 4.0 era, digital technologies have become the basis for the modernization of commercial activities and logistics, ensuring the efficiency of operations and synchronization between supply participants. The development of an enterprise in such conditions should be based on the effective use of internal resources, data management and the creation of its own digital infrastructure. The concept of logistics process management involves the integration of digital tools at all stages – from planning and transportation to packaging and delivery of products to consumers (Olifirenko et al., 2022).

The implementation of digital solutions in each structural element of the logistics system allows not only to increase the efficiency of the enterprise, but also to significantly reduce the costs of implementing operational processes. In particular, the use of CRM and ERP systems allows automating the accounting of labor processes, control supplies, forecast the need for resources, and ensure the transparency of management decisions (Voronko et al., 2023).

Recent trends indicate that in 2024–2025, Big Data analytics will become the main driver of logistics development. The use of analytical platforms allows enterprises to predict delivery delays, model transportation routes, and optimize the loading of warehouses and vehicles. According to analytical data from the Big Data Lab (2023), the use of Big Data analysis systems increases the scalability of

logistics services and ensures the adaptability of business models to an unstable market.

In parallel, artificial intelligence (AI) is actively integrated into logistics activities. Its use provides deep analysis of information arrays about routes, suppliers, transportation cost parameters and risks, which creates the prerequisites for making effective management decisions. In practice, this allows optimizing delivery times, reducing fuel costs and increasing customer satisfaction (Manzhula et al., 2019).

In addition, the role of digital technologies in the field of logistics process security is growing. Scientists emphasize the need to develop an innovative methodology for accounting and protecting information flows, which ensures the interaction of economic and cybersecurity of the enterprise (Zadorozhnyi et al., 2021). At the same time, modern logistics management models are focused on scientific and methodological support for improving the logistics system at the enterprise level (Zaloznova & Trushkina, 2018).

It should also be noted that the development of logistics processes is closely linked to legal norms and international regulations. In particular, there is increasing attention to digital trade, intellectual property and the ethical use of data in the context of global trade disputes, in particular between the USA and China, which remain the leading suppliers of products and technologies on the global market (Koev et al., 2019).

Investment activity in the field of digital logistics management technologies demonstrates a stable growth trend. According to Ber et al. (2025), in the coming years, the volume of financing for digital logistics tools will increase by at least 150%, which determines the strategic importance of such investments for the development of commodity markets and the effective functioning of supply chains. Increasing the level of digitalization of logistics systems directly depends on the needs of domestic and foreign markets, which determine the formation of innovative approaches to the management of transport flows, warehousing and distribution of products (Marhasova & Samoilovych, 2023).

The current stage of development of the digital economy is characterized by the strengthening of the interconnection between logistics operations and digital management platforms. Automation of communication processes between warehouses, suppliers, distributors and manufacturers is gradually becoming a major factor in increasing the efficiency of the entire logistics cycle. Taking into account the spatial characteristics of the Ukrainian market, the potential for creating a single integrated logistics network capable of ensuring end-to-end digital interaction of business entities is being formed. At the same time, the development

of a global logistics infrastructure requires significant investments, a high level of cyber protection and unification of digital interaction standards.

The leading areas of innovation in logistics are the implementation of Big Data technologies, cloud computing, artificial intelligence, sensor monitoring systems, 3D printing, as well as integrated CRM and ERP platforms, which provide comprehensive management of enterprise resources (Olifirenko et al., 2022; Trushkina et al., 2021). Their application contributes to increasing the accuracy of demand forecasting, optimizing transportation routes, controlling warehouse balances, and reducing operating costs.

Table 1. Characteristics of the latest digital technologies for managing the logistics processes of an enterprise

Digital technology	**Characteristics and areas of application**	**Examples of Ukrainian companies**	**Practical example of implementation**
Big Data	Used for multidimensional analysis of transport operations data, delay prediction and logistics route optimization. Allows modelling supply scenarios taking into account seasonality, transportation costs and warehouse capacity.	Ally Logistic actively implements modern technologies for analyzing and using big data, which allows optimizing logistics processes and increasing customer service efficiency.	Amazon uses Big Data in its demand forecasting and inventory management system. Algorithms analyze historical sales, weather factors, and customer behavior, and the system automatically adjusts the volume of deliveries to distribution centers.
Cloud computing	They provide centralized storage and processing of logistics data in real time, which helps to increase the transparency of management decisions. Common systems are Oracle WMS, Oguar WMS, Manhattan WMS.	Integrating cloud solutions into logistics processes allows for flexibility and scalability of operations, as well as reducing infrastructure costs.	DHL Supply Chain uses the Microsoft Azure cloud platform to manage warehouse operations across its global network of warehouses. The cloud infrastructure synchronizes data between logistics centers in different countries.
Artificial Intelligence (AI)	It is integrated into transportation planning and inventory management processes, used to select optimal routes and predict risks.	UTEC Logistic uses ChatGPT to automate and improve communications with customers and partners, which increases service efficiency.	UPS uses the ORION system based on artificial intelligence algorithms. The platform analyzes millions of delivery route options and reduces annual fuel costs.
Sensor technologies (IoT)	They provide control over the condition of cargo, temperature regime and movement of goods. They	The use of IoT technologies allows for real-time monitoring, which is critically	Maersk uses IoT sensor systems in refrigerated containers. The sensors record temperature and

	are especially effective for agricultural, pharmaceutical and food logistics.	important for maintaining the quality and safety of cargo.	humidity during the transportation of pharmaceutical products and transmit the data to the company's logistics platform.
3D printing	It allows to reduce the cost of producing components, packaging or spare parts, reducing the need for large warehouse inventories.	3D Tech ADDtive uses 3D printing to create drone components, which reduces weight and production costs, contributing to the development of unmanned technologies in logistics.	Daimler Trucks uses 3D printing to produce truck spare parts. The parts are printed at service centers, which reduces the need for large inventories.
Automated warehouse management systems (WMS)	Automate packaging, sorting, and shipping processes. Ensure synchronization of actions between personnel and vehicles.	Pakline Group successfully implemented WMS in its warehouses, which allowed it to reduce order processing time by 30% and minimize the number of inventory errors.	Alibaba (Cainiao Network) uses robotic warehouses with an integrated WMS system. Autonomous robots move goods between warehouse areas and speed up the processing of e-commerce orders.
CRM and ERP systems	They are used to integrate financial, personnel and logistics information of the enterprise. They provide analytical support for management decisions and increase the adaptability of business processes.	Perfectum offers a CRM system for logistics companies that helps establish effective interaction between all participants in the process by automating and controlling work within the company.	Siemens uses the SAP S/4HANA ERP platform to integrate financial, production, and logistics processes. The system integrates data from the global supply chain and provides enterprise resource planning.

Source: compiled by the author based on (Ally Logistic, 2024; UTEC Logistic, 2024; Win3desk, 2024; Pakline Group, 2024; Perfectum, 2024)

Despite the high cost of implementing digital technologies, large Ukrainian logistics companies are actively integrating them into their business activities. As noted by Popelo and Tkachenko (2023), intelligent management systems allow reducing costs by 20–30%, reducing transport downtime and increasing customer satisfaction. At the same time, according to Olifyrenko et al. (2022), the use of cloud platforms and Big Data analytics creates new opportunities for scaling services and increasing transparency of interaction between partners. Thus, digital technologies act as a major catalyst for the evolution of logistics processes and form the basis of the competitiveness of enterprises in the digital economy.

Given the dynamic development of digital technologies and the growing needs of logistics enterprises to ensure effective management of transport, warehouse processes, production and distribution of resources, the use of cloud technologies is becoming particularly relevant. They are one of the most effective tools for the digital transformation of logistics, as they allow significantly reducing financial and labor costs for maintaining IT infrastructure, providing flexibility, scalability and high speed of data exchange between enterprise units. The use of cloud technologies allows enterprises to concentrate on strategic tasks without being distracted by software maintenance, which is confirmed by modern scientific research in the field of digitalization of logistics processes (Marhasova & Samoilovych, 2023).

In the modern environment, cloud technologies are becoming an integral part of enterprise logistics management, in particular due to the possibility of renting server capacities of digital service providers, which significantly reduces costs for IT equipment and increases the efficiency of information flow processing. This approach is effective not only for large logistics companies, but also for small and medium-sized businesses, which are able to integrate their own business processes into the global digital infrastructure. An example of a modern innovative solution is the Microsoft Azure and Oracle Cloud cloud services, which are actively implemented in the field of logistics and production chain management. In particular, the use of cloud systems allows to integrate internal documentation, automate business processes and provide analytical support for management decisions in real time (Popelo & Tkachenko, 2023).

The innovative approach to implementing cloud technologies in logistics in 2024–2025 is focused on expanding the business models of enterprises and integrating additional services, such as analytics modules, demand forecasting, or optimization of transport routes. In practice, this ensures the formation of a flexible organizational structure, improves the quality of operational management, and also creates the possibility of forming local departments on remote servers for each structural element of the logistics chain.

An important factor in the digital transformation of logistics processes has been the rapid development of artificial intelligence, which has become widespread in the management of warehousing, transport and distribution activities since 2023. The use of intelligent algorithms allows enterprises to analyze large data sets, forecast demand, optimize transportation routes and automate the distribution of goods. An example of the successful integration of artificial intelligence into logistics is the activities of Amazon, which uses intelligent warehouse management to increase sales efficiency, distribute goods and reduce delivery times. This approach is based on the use of machine learning systems capable of making decisions based on real-time data, which contributes to a significant increase in labor productivity and competitiveness of the enterprise (Olifirenko et al., 2022).

According to Google analysts' forecast, by 2030, most logistics companies will actively use artificial intelligence tools to optimize their own business processes and form a stable logistics chain management system. The implementation of such technologies not only increases the efficiency of internal operations of enterprises, but also has a global impact, contributing to the optimization of international trade routes and strengthening the stability of the global economic system (Trushkina et al., 2021).

An equally important direction of digitalization is the development and implementation of sensors that provide automated tracking of the movement of goods, temperature, humidity, weight indicators, etc. Such sensor systems are actively used in warehouse logistics, transportation and production processes, which allows to create high-precision digital models of resource flow management. Taiwan, as the world's largest manufacturer of microchips, in 2022–2023 almost doubled the production of equipment that is now widely used in logistics processes in the USA and European countries. The integration of sensor technologies into logistics systems allows to automate control over the packaging, transportation and storage of goods, increasing the reliability of supply and reducing the risk of losses (Ivanov et al., 2019).

No less important is the provision of automated systems used to manage transport and warehouse systems. Their implementation in logistics management is carried out on the basis of the development of ready-made or individual software solutions that can optimize business processes. That is why improving the quality of technologies in this case can be an effective method of improving the financial condition of the enterprise, its marketing activities and ensuring a high level of logistics development (Marhasova & Samoilovych, 2023).

The logistics process management system demonstrates that increasing the role of digital technologies in modern conditions is an important task. The development of an integrated information system can be carried out on a local basis to improve the overall management and coordination of the logistics process, as well as improving the quality of operational activities and interaction with transportation, route selection, packaging and transportation of products. Small and medium-sized enterprises form their own logistics business on the basis of ready-made solutions of the technology market and increase the level of optimization to ensure the high-quality distribution of financial, labor and other resources of the enterprise (Voronko et al., 2023).

Transportation and warehouse management policy is one of the main processes in logistics, as it directly affects the efficiency of use and direction of logistics flows. The transportation management system (TMS) provides flexible configuration of transport service facilities and effective distribution of products in intelligent warehouses. The management of such vehicles has a long-term effect in

the modern digital environment, where most technologies are automated and special cloud services are used. The most important aspect is the integration of logistics companies into a common clou environment, which allows expanding logistics activities and strengthening the presence of the enterprise in the global market (Makedon, et al., 2023; Olifirenko et al., 2022).

In combination with TMS, warehouse management systems (WMS) are often used, which provide warehouse organization, efficient use of vehicles, data exchange, scanning, analysis, forecasting and modeling of optimal solutions for managing logistics processes (Ivanov et al., 2019). To ensure a high level of logistics process management in the business environment of a logistics enterprise, it is customary to use ERP systems and manufacturing management systems (MES), which are aimed at sharing resources and finding the most rational ways of their further use.

The integration of these systems allows, based on production planning and distribution of logistics resources, to predict their further management, ensuring the complementarity of digital technologies within the framework of specific management decisions (Popelo & Tkachenko, 2023).

Over the past three years, information analysis in logistics has become increasingly important for planning internal production and management activities. Based on such technologies, digitalization, collection of information on the availability of goods and servicing of transport enterprises are being implemented. For modern provision of information analysis, automated systems are used, such as Gonrand and Videotrans, which model the best processes of logistics management and are widely used by enterprises to improve their own activities and strengthen their competitive positions in the market (Trushkina et al., 2021; Big Data Lab, 2023).

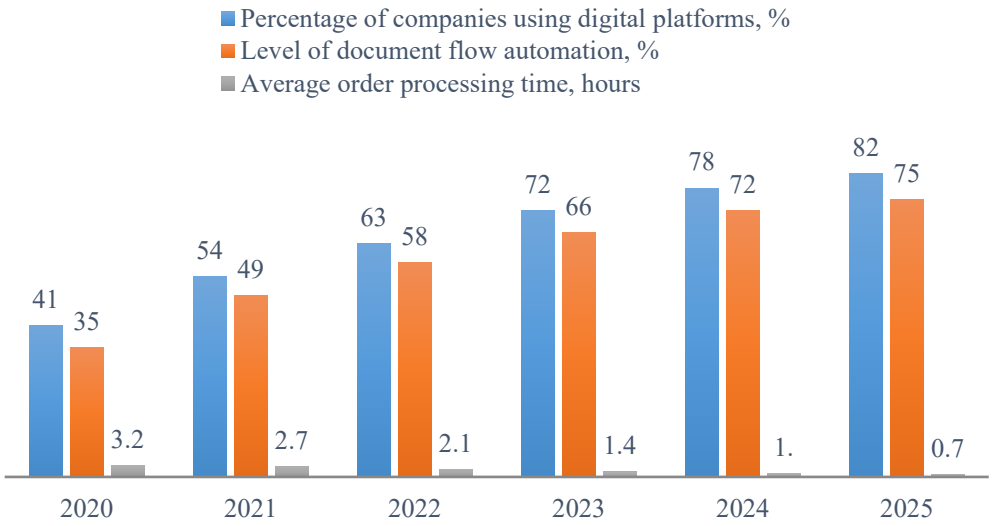
The impact of digital platforms on increasing the efficiency of logistics systems in the national economy

Modern logistics is undergoing a qualitative transformation under the influence of digital technologies, which ensure the integration of production, transport and information flows into a single management system. The development of digital platforms in logistics not only increases the efficiency of operational processes, but also acts as a strategic factor for economic growth. According to estimates by Ber et al. (2025), the efficiency of the logistics system is directly correlated with indicators of national competitiveness: countries with a high level of digitalization of the transport and logistics sector demonstrate up to 20% higher export productivity and 15% lower transaction costs.

In Ukraine, the digital transformation of logistics began an active phase in 2020–2025. The COVID-19 pandemic, war, and the need to maintain the stability

of supply chains stimulated the implementation of electronic document management, blockchain technologies, Big Data systems, and artificial intelligence. According to the analytical report of Navis Group (2025), in 2024, more than 68% of Ukrainian logistics operators used at least one digital platform for transportation management, and by 2025 this figure had increased to 82%. At the same time, the level of document management automation exceeded 75%, and the processing time of a transport application was reduced from 2.4 hours to 40 minutes.

Figure 1. Dynamics of digitalization of logistics processes in Ukraine in 2020–2025



Source: summarized from Navis Group (2025) and Ber et al. (2025).

The results obtained indicate that digital platforms play a key role in reducing transaction costs, accelerating logistics processes and increasing their transparency. An important direction has been the integration of ERP and TMS systems, which allow real-time tracking of cargo flows, coordinating interaction between carriers, warehouses and customers. According to a study by We Build Ukraine Fund (2025), the efficiency of logistics operations after the implementation of platforms such as Consolida.AI or Vchasno Delivery Hub increased by 28%, and the level of errors in documentation decreased by more than half.

The key advantage of digital platforms is the creation of a single information space that integrates data on transport routes, customs procedures, cargo volumes and customer orders. Such integration provides end-to-end visibility of the supply chain, which, according to Ber et al. (2025), reduces the risk of logistics disruptions by 30–35%.

Digital platforms are also changing the structure of the competitive environment of the logistics business. According to the Vovk et al. (2025), three

main models of digital interaction have emerged in the Ukrainian market: integrated corporate platforms (e.g. Raben Digital Flow), industry ecosystems (such as the Digital Transport Corridor Ukraine–EU), and open transportation marketplaces (Cargofy, Shipnext, etc.). Each model has its own niche: corporate solutions provide control and analytics, while open platforms stimulate competition and market flexibility.

An important technological trend has been the introduction of blockchain technologies. As Firzouq (2025) notes, over 42% of logistics startups in Europe use blockchain to verify the authenticity of documents and track the origin of goods. Ukrainian operators began to use similar solutions in 2023–2025, which allowed to reduce the number of disputed transactions between carriers and customers by 17%. Blockchain in logistics ensures the immutability of records, increases the level of trust between counterparties and reduces administrative risks.

In the context of martial law and the restoration of transport infrastructure, digital platforms have become the basis of adaptive risk management. According to the analytical report of the We Build Ukraine Fund (2025), thanks to digital analytical systems, Ukrainian logistics companies were able to optimize routes in the conditions of destroyed roads, reducing the average length of alternative transportation by 12% and saving up to $ 80 million per year in 2023–2024. The introduction of satellite monitoring, IoT sensors and platforms such as Navis Smart Logistics Hub contributed to an increase in the accuracy of delivery time forecasting by 25–30%.

The economic effect of digitalization deserves special attention. According to Ber et al. (2025), increasing the digital maturity of the logistics sector by 1 point (on a 5-point scale) gives a GDP growth of 0.4%. Ukraine in 2020 had an indicator of 2.6 points, and in 2025 – already 3.9. This allows us to estimate the total macroeconomic effect of digital platforms in logistics at $ 1.2–1.4 billion annually.

In general, modern digital platforms are becoming the core of an innovative ecosystem in the transport and logistics sector, which is based on three principles: data interoperability, automation of routine processes and analytics based on big data. Thanks to these principles, a new logistics model is being formed – data-driven logistics, where decisions are made based on analytical data, not intuition.

Thus, the role of digital platforms in the development of logistics processes goes far beyond automation: they form a new architecture of supply chain management, increase economic sustainability, transparency and speed of decision-making. By integrating digital solutions into logistics, Ukraine is laying the foundation for competitive participation in the European transportation market and contributing to economic recovery through innovative management mechanisms.

5. Discussion

Based on the results of the analysis of modern digital and automated solutions in the field of logistics in Ukraine, several groups of enterprises can be distinguished depending on the level of implementation of digital technologies and the efficiency of logistics process management.

Group I. Enterprises with a high level of digitalization and stable operational efficiency: Nova Poshta, Raben Ukraine, Meest Express. These companies have integrated ERP, CRM, WMS and TMS systems, and also use Big Data analytical platforms and artificial intelligence tools to forecast logistics flows. For example, Nova Poshta reduced the processing time of transport applications from 2.4 hours to 40 minutes, and Raben Ukraine increased the efficiency of warehouse operations management by 28% by implementing the Vchasno Delivery Hub platform.

Group II. Enterprises with a moderate level of digitalization and average management efficiency: Ally Logistic, UTEC Logistic, Pakline Group. These companies actively use cloud services, sensor IoT systems and partial automated platforms for managing transport and warehouse flows, however, the integration of systems into corporate business processes remains incomplete. The use of digital tools has reduced operating costs by 15–20% and increased the accuracy of delivery time forecasting by 25–30%.

Group III. Enterprises with a lower level of digitalization and limited management efficiency: small and medium-sized businesses that use fragmented digital solutions, such as basic CRM systems or local WMS solutions without integration with TMS or ERP. Insufficient digitalization limits the transparency of processes, increases the risks of logistical disruptions and reduces competitiveness in the national market.

A comparative analysis of companies from different groups reveals systemic barriers to the digitalization of logistics processes. Many companies do not integrate integrated digital systems due to limited investment resources. Integration of ERP, WMS, and transport information systems requires modernization of server infrastructure, licensed software, and specialized technical staff. For many logistics companies, these costs remain critical. Additional difficulties are associated with the organizational structure of companies. Fragmented information systems make it difficult to exchange data between departments. Inconsistencies in data formats lead to duplication of operations and increase the time it takes to process orders. Some companies retain paper-based workflows, which slows down information flows. Improving the efficiency of companies in the second and third groups requires a consistent modernization of digital infrastructure. At the first stage, it is advisable to implement warehouse management systems and electronic document management.

The next stage involves the integration of transport information systems and automated route planning modules. The use of analytical data processing tools improves the accuracy of logistics planning. Analysis of the state of logistics digitalization in Ukraine allows us to identify key problem areas: limited integration of digital platforms with corporate management systems, uneven development of IT infrastructure and qualified personnel, insufficient funding for digital initiatives in small and medium-sized businesses, and the lack of a unified national digitalization strategy.

The implementation of digital platforms such as Consolida.AI, Vchasno Delivery Hub, Navis Smart Logistics Hub, VeChain, Ethereum and IOTA contributes to the transparency of operations, resource optimization, document workflow automation and a reduction in transaction costs by 20–25%. According to analytical research for 2023–2025, the use of AI, Big Data, IoT and blockchain technologies in the transport and logistics sector is steadily growing, which creates conditions for the formation of data-driven logistics and increasing the competitiveness of Ukrainian enterprises in the global market.

The implementation of digital solutions provides strategic advantages: cost reduction, productivity increase, improved interaction between departments, rapid adoption of management decisions and development of innovative potential. The examples of Nova Poshta, Raben Ukraine and Meest Express demonstrate the concrete effect of digitalization: reduced planning time, optimization of transport routes, increased efficiency of warehouse operations and improved customer service.

6. Conclusions

The analysis shows that digital platforms in the logistics sector of Ukraine play the role of a strategic tool for increasing the efficiency and competitiveness of enterprises. It was established that:

- Digitalization ensures the integration of management, transport and analytical processes, increases transparency and efficiency of decision-making;
- Enterprises with a high level of digitalization demonstrate significant advantages in productivity, management efficiency, and financial results;
- the effectiveness of digital tools is determined not only by the technological component, but also by the organizational structure, personnel training, and regulatory framework;
- Limited adoption of digital technologies reduces management flexibility, increases operational risks, and limits the potential for competitive advantage.

Therefore, digital platforms in the logistics processes of Ukrainian enterprises act not only as a tool for automation, but also as a strategic resource for shaping adaptability, innovation and long-term sustainability of business. Further research should focus on developing methods for assessing the effectiveness of digitalization, adapting international experience to national conditions and forming corporate strategies for continuous improvement of logistics processes.

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