

The Role of Digital Technologies in Optimizing the Functioning of the Marketing and Logistics System of the Enterprise

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Abstract: The article analyzes the role of digital technologies in optimizing the functioning of the enterprise's marketing and logistics system. The main aspects of the marketing-logistics concept, which is aimed at achieving optimal interaction between marketing and logistics processes within the enterprise's activities, are defined. The problems that may arise during the implementation of digital technologies in the marketing and logistics system of the enterprise are analyzed. The advantages of using digital technologies in optimizing the functioning of the enterprise's marketing and logistics system are substantiated. The key digital technologies that are currently or in the coming years will be characteristic of the marketing and logistics systems of enterprises have been identified. It is substantiated that the development of a strategy for the introduction of digital technologies into the marketing and logistics system of the enterprise helps to determine the role of digital technologies in optimizing its functioning. The main stages of the process of development and implementation of the strategy of introducing digital technologies into the marketing and logistics system of the enterprise are defined.

Keywords: digital technologies, digital tools, marketing and logistics system, enterprise, marketing, logistics.

1. INTRODUCTION

The functioning of modern enterprises is in a continuous state of changes and challenges, where success depends on the efficiency and optimal functioning of marketing and logistics systems. In this context, digital technologies play a key role in the success of enterprises. Rapid technological progress in recent decades has made it possible to significantly change the perception of management of marketing and logistics processes, opening up many new opportunities for optimization and increasing the efficiency of these systems. The introduction of digital tools and technologies into the marketing and logistics system of the enterprise ensures

automation of processes, increases the accuracy and efficiency of decision-making, and allows monitoring of key performance indicators in real time. The use of analytical platforms and artificial intelligence allows you to forecast demand, plan stocks and resources, as well as optimize logistics routes, thereby reducing costs and increasing the level of customer service. In parallel, digital tools allow you to increase customer engagement and increase customer loyalty through interactive marketing campaigns, personalized offers and virtual reality programs. Therefore, digital technologies become the basis for the creation of innovative marketing strategies and the competitiveness of the enterprise in the market. However, on the path to successful integration of digital technologies into the marketing and logistics system of the enterprise, there are some challenges, such as the need to retrain personnel, high costs of implementing new systems and ensuring their security. Therefore, the study of the role of digital technologies in optimizing the functioning of the

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marketing and logistics system is a relevant and promising topic of research aimed at ensuring the sustainable development of enterprises in the conditions of dynamic market development.

The purpose of the article is to study the role of digital technologies in optimizing the functioning of the enterprise's marketing and logistics system in the context of modern challenges.

2. LITERATURE REVIEW

Analysis of a significant number of works by scientists (Hauer et al. (2021); Dubyna et al. (2021); Djakona et al. (2021); Safonov et al. (2022); Shaposhnykov et al. (2021); Zybareva et al. (2021)) gives an idea that in modern economic conditions total digitization of the economic activity of business entities is taking place. The economy of each country found itself at the center of global changes, a transition to a completely new plane.

Popelo et al. (2023) and Zhavoronok et al. (2022) prove that the process of digitalization of the economy can be considered as an effective trend in the development of the state, which is the goal of European integration. But it should also be noted that the greatest efficiency and positive effect will be achieved in the event that digital development is additionally extended to other spheres of society.

Krasovska et al. (2023), Tulchynska et al. (2021, 2023) and Shkarlet et al. (2020), Novomlynets et al. (2023), Vovk et al. (2021) in their research conclude that today the digital revolution has led institutions and organizations to implement online solutions, artificial intelligence, create marketplaces and entire ecosystems that are convenient to use, quick to maintain, carry enormous the flow of information and, most importantly, already a third of the population actively uses them.

Butko et al. (2022), Grigoraş-Ichim et al. (2018) and Kholiavko et al. (2020) in the process of merging the virtual and real worlds, a mixed world is formed, dominated by the Internet and augmented reality, and on the basis of this, the total digitalization of all spheres of life emerges.

This process and the sphere of functioning of enterprises in general and their marketing and logistics system, in particular, were not bypassed. Brzakovic et al. (2021) in their study proved the importance of increasing the efficiency and speed of the enterprise's logistics system due to the introduction of technologies. Instead, Cadavid & Valencia-Arias (2022) recognize that logistics implements digital innovations more slowly than other types of business and that ignoring this fact is a risk for all market participants.

Samiilenko et al. (2022) in the end derive recommendations for the implementation of digital technologies offered to businesses, namely: for the successful integration of digital products, it is necessary to first store data correctly and make them suitable for further processing. It is possible to move towards the digitization of services by means of patchwork automation, combining individual micro-programs with each other.

Viknianska et al. (2021), Grosu et al. (2021) and Tkachuk et al. (2023) prove in their work that the implementation of digital solutions in the field of logistics is necessary, but not

final. The problem of the field is not automation, but marketing. Lachenmaier et al. (2023) devoted their work to the study of marketing strategies and came to the conclusion that during the implementation of any strategy, each stage was extremely important.

Sasongko et al. (2023), Su, J., Zhang & Wu (2023). devoted their research to the role of innovation in marketing and pointed out that strategic planning has been replaced by a "dynamic equilibrium" that innovation maintains because it allows ideas to be tested.

In order to substantiate, prove the expediency and relevance of this study, we conducted a bibliographic analysis of the activity of the world scientific community regarding the study of digital technologies in optimizing the functioning of the marketing and logistics system of the enterprise based on the use of Oria data from the most prestigious scientometric databases - Scopus (Fig. 1).

According to Scopus data, scientists first became interested in this issue in 1995 (1), subsequently, publication activity began to grow rapidly from 107 articles in 2007 to 3,411 articles in 2023, which once again confirms the active discussion of this issue in the scientific community. Today, the world centers of concentration of publishing activity are: China, USA, UK, Australia and others.

However, the study of the impact of digital innovations on the marketing and logistics system is extremely important for enterprises that strive to achieve success and maintain competitiveness in a modern, dynamic business environment, which actualizes the need for further research into this issue.

3. METHODOLOGY

The systematic approach, as well as general scientific and special research methods are defined as the methodological basis of the conducted research. During the research, the authors used: methods of system analysis and generalization - to systematize scientific approaches to determining the main characteristics of the marketing-logistics concept; methods of grouping, induction and deduction - to determine the impact of digital technologies on the functioning of the enterprise's marketing and logistics system; abstract-logical method - for analyzing the index of digital transformation of the regions of Ukraine; scientific abstraction and graphic methods - for visualization and detailing of the process of development and implementation of the strategy of introducing digital technologies into the marketing and logistics system of the enterprise.

4. RESULTS

Global challenges pose a number of requirements to enterprises, such as taking into account modern risks, integration into the digital environment, adaptation to the ecosystem of enterprises in the logistics chain and the use of methods to optimize logistics operations, which necessitates the integration of digital technologies and the enterprise's marketing and logistics system. Today, digital technologies play an important role in improving and optimizing the functioning of the enterprise's marketing and logistics system. The use of modern information and communication tools, analytical platforms allows you to automate processes, increase the

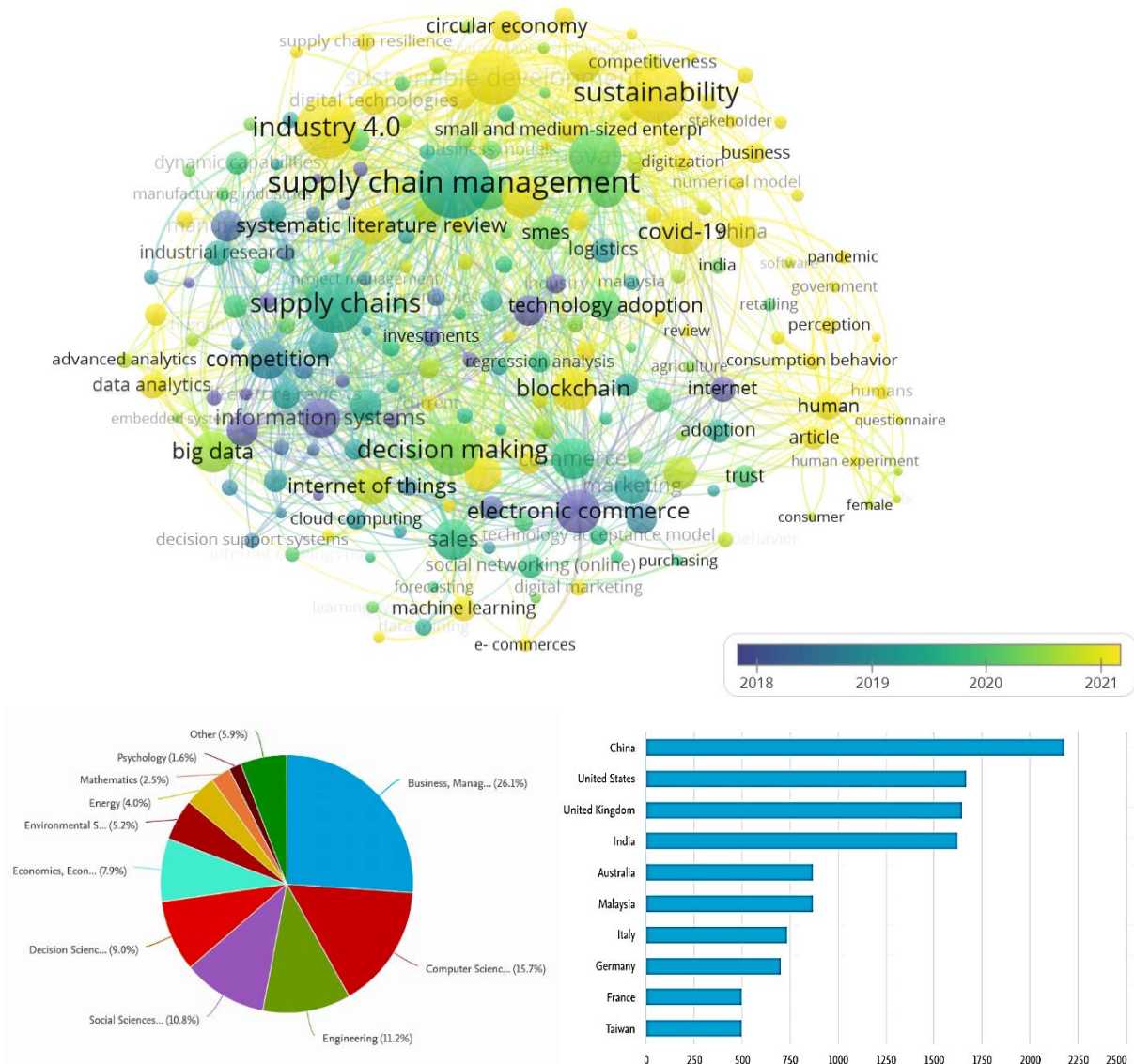


Fig. (1). Meta analysis of bibliometric data on the relationship between keywords in scientific publications, in which research on digital technologies in optimizing the functioning of the marketing and logistics system of the enterprise are found.

Source: compiled by the authors based on the analysis of the Scopus database and using the tools of the VOSviewer program.

efficiency of supply chain management, reduce costs, and create personalized marketing strategies.

The marketing and logistics concept is aimed at achieving optimal interaction between marketing and logistics processes within the enterprise. The main goal of this concept is to meet the needs of consumers and achieve a high level of efficiency of the entire supply chain (Fig. 2).

When introducing digital technologies into the marketing and logistics system of enterprises, some problems may arise that are important to consider and solve for the successful integration of these innovations:

1. Behavior and requirements of customers - when implementing digital technologies in the marketing and logistics system, some consumers may experience inconvenience or resistance to new methods of communication and service. It is important to balance implementation with focus on customer needs and convenience.

2. Ecosystemicity – implementation of digital technologies may require interaction with various suppliers, partners and other enterprises. Creating an effective ecosystem can be a challenge, especially if there are different technological standards or unbalanced interests between participants. Businesses may use different existing systems that may not be compatible with new digital solutions. Integrating new technologies with existing systems may require additional effort and resources.

3. High implementation costs – implementation costs can be high, especially for smaller businesses, and require a balanced approach to resource planning.

4. Necessity of retraining of personnel – implementation of digital technologies often requires retraining of personnel to work with new tools and systems.

5. Data security – digital technologies require the storage and processing of large amounts of data about customers and

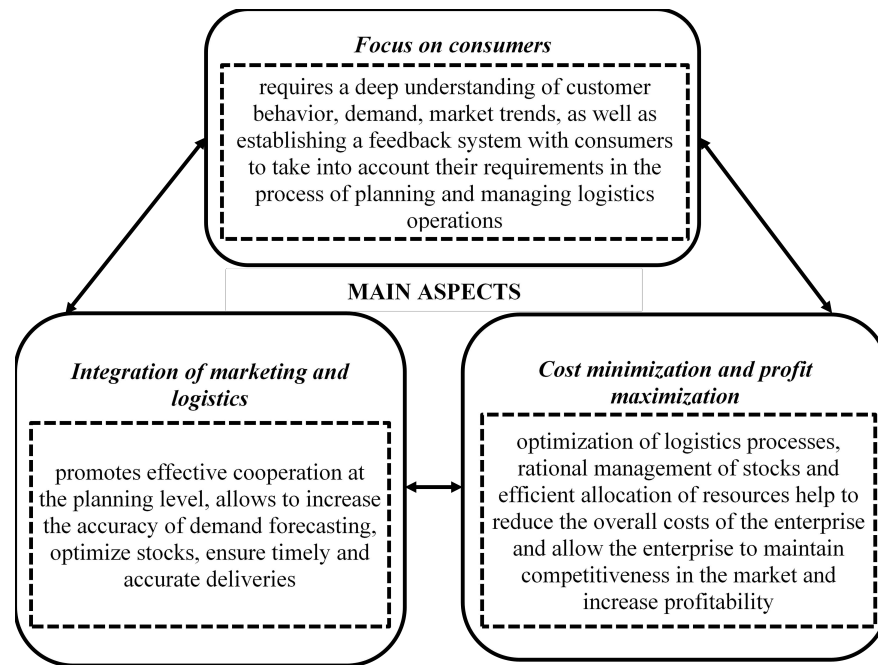


Fig. (2). Characteristics of the marketing and logistics concept.

Source: developed by the authors.

business operations, which can create data security issues and require the implementation of effective measures to protect information from unauthorized access and cyber attacks.

Despite the challenges, the right implementation and management of digital technologies can bring significant benefits to the enterprise, increasing its competitiveness, efficiency and ability to meet the needs of customers. Solving problems requires a sound approach, staff training and pragmatic planning.

Based on the above, at the current stage, digital technologies are becoming a driver of the development of the company's marketing and logistics system, helping to increase its competitiveness, attract new customers and ensure the satisfaction of current ones. Smart integration of digital tools in the company's activities can lead to significant improvement of its indicators and success in the market (Fig. 3). The use of digital tools allows for efficient planning of resources, control over the movement of goods, monitoring of stocks, as well as the development of supply strategies, which ensures a reduction in costs, an increase in the speed of processing orders and an improvement in customer service. Also, the use of digital technologies in the marketing and logistics system of the enterprise leads to an improvement in the efficiency of operations, provides more accurate forecasting, increases customer satisfaction and helps enterprises maintain competitive advantages in the market.

When assessing the possibility of implementing digital technologies, it is important to pay attention to the level of development of digital initiatives and infrastructure in the regions, which can affect the availability and effectiveness of using digital solutions to optimize marketing and logistics processes of the enterprise. In this context, the evaluation of

the Digital Transformation Index of the regions of Ukraine (allows you to assess how developed regions are in terms of digital transformation and innovative development) shows that the most developed regions in terms of digital transformation and innovative development are Dnipropetrovsk (0.916) and Ternopil (0.910) regions (Fig. 4). A high level of the index indicates prospects and opportunities for the successful implementation of digital technologies.

The development of a strategy for the introduction of digital technologies into the marketing and logistics system of the enterprise helps to determine the role of digital technologies in optimizing its functioning. The strategy of introducing digital technologies into the enterprise's marketing and logistics system can be presented in the form of a number of stages (Fig. 5). The stages of digitization of marketing and logistics activities should allow obtaining, evaluating and adjusting the results of each set of measures implemented at each stage, in order to ensure the maximum possible benefits for the enterprise.

The first stage consists of research and analysis of the enterprise's marketing and logistics processes. The main problems, opportunities for optimization and introduction of digital technologies are determined.

At the second stage, specific goals and results are set, which are planned to be achieved with the help of the implementation of digital technologies. The goal may be related to improving the effectiveness of marketing campaigns, optimizing logistics processes, increasing customer satisfaction, etc. Based on the analysis and set goals, specific digital tools and solutions that best meet the needs of the enterprise are determined. The choice depends on the type of business, budget constraints and the capacity of the enterprise.

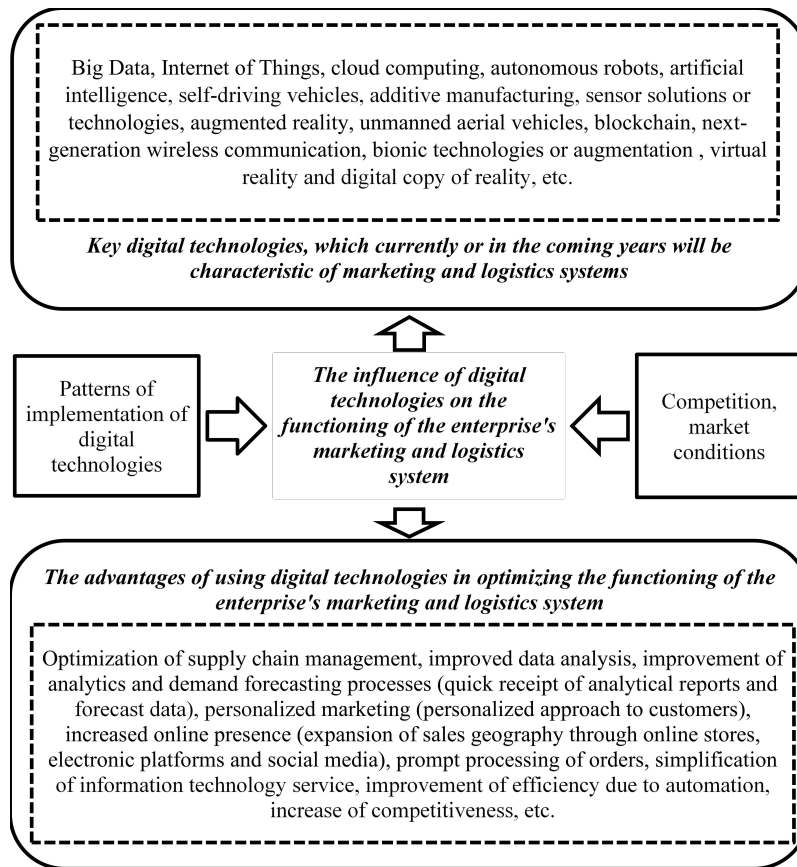


Fig. (3). The influence of digital technologies on the functioning of the enterprise's marketing and logistics system.
Source: developed by the authors.

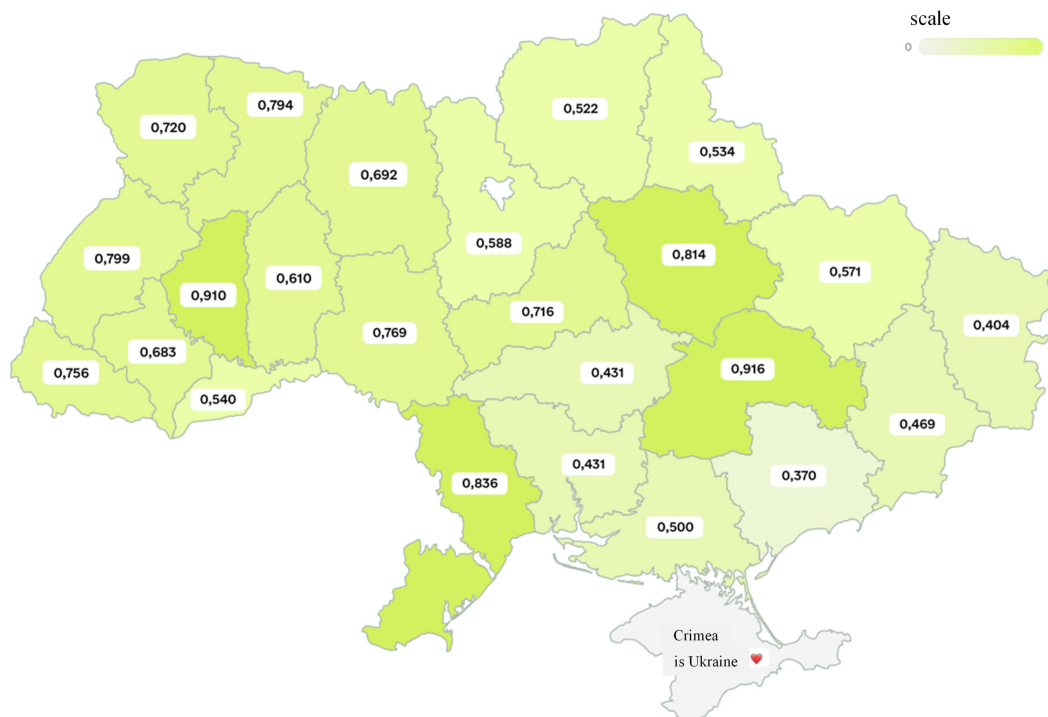


Fig. (4). Index of digital transformation of the regions of Ukraine based on the results of 2022.
Source: based on Index of digital transformation of Ukraine's regions.

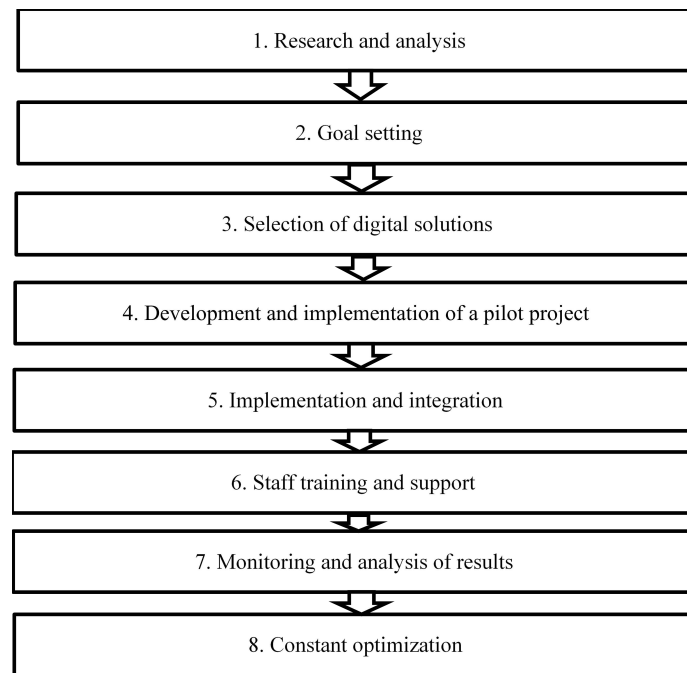


Fig. (5). The process of developing and implementing a strategy for introducing digital technologies into the enterprise's marketing and logistics system.

Source: developed by the authors.

To test the effectiveness and implementation of new digital solutions, a pilot project can be created, which allows testing technologies in real conditions and making adjustments before their full-scale implementation. Next, the introduction of digital solutions into the enterprise's marketing and logistics system begins. It is important to ensure proper integration of new technologies with existing processes and systems. Staff training and support is a key element of successful digital implementation. Providing the necessary skills and knowledge helps to effectively use new tools and ensure the successful implementation of the strategy.

After the implementation, it is necessary to constantly monitor and analyze the results of the implementation of digital technologies, which allows identifying successful aspects and problems that require adjustment, and making the necessary changes to achieve the set goals. The strategy for the implementation of digital technologies should be flexible and subject to constant optimization and improvement. Changes in market conditions, technological innovations and changes in customer needs require constant updating of the strategy to ensure the success and competitiveness of the enterprise.

These stages help enterprises realize the successful implementation of digital technologies in the marketing and logistics system, which will contribute to improving efficiency and achieving competitive advantages.

Digital technologies play a key role in optimizing the functioning of the enterprise's marketing and logistics system. Their implementation allows enterprises to improve the efficiency and accuracy of consumer data analysis, develop personalized marketing strategies and offers, which increases

the level of customer satisfaction. Thanks to digital technologies, logistics processes can be optimized, supply chain management can be improved, warehousing and transportation costs can be reduced, and logistics operations can be more transparent and controlled. All these advantages contribute to increasing the competitiveness of the enterprise and creating a stable suspension for its successful development in the modern digital environment.

5. DISCUSSION

We cannot but agree with the statement of Su & Wu (2023) that digital marketing combines electronic technologies with traditional marketing concepts and includes tools such as social media, video content, affiliate, mobile and internet marketing.

We share the opinion of Viknienska *et al.* (2021) that the attractiveness of such tools is due to the presence of attractive visual displays and high communication speed and the ability to reach a wide audience. We would also like to add that the use of digital marketing tools helps to increase the efficiency of enterprises. It affects the non-financial and financial activities of hospitality enterprises, contributes to the satisfaction of customer requests, the formation of competitive advantages, cost optimization and profit maximization.

Le Viet & Dang Quoc (2023) believe that it is absolutely necessary to outline a marketing strategy - clear, but flexible, which can be adjusted if necessary, which we cannot even argue with.

We support the statement of Samiilenko *et al.* (2023) that currently in the field of logistics, the technologies of using

network and cloud systems are at an early stage of development, but currently bring significant benefits and advantages to those who apply them.

On the basis of the conducted research, I would like to highlight that modern concepts of marketing and logistics are based on meeting the needs of consumers based on the effective management of material and information flows and the rational use of production facilities with the necessary volume of goods and services. With such interaction, effective business processes are formed that combine marketing and logistics to optimize the interaction of the enterprise with the market environment.

We also share the opinion of Safonov et. al. (2022) that robotics and automation have already touched a large number of industries. But not all countries are in a hurry to introduce such technologies. Robotization goes hand in hand with the unemployment of those whose work has been replaced by mechanical work. And first, the states need to figure out how to redistribute human labor without significant consequences for everyone, and only then - to introduce robots and rush into the future.

6. CONCLUSION

Balancing the labor market by increasing the number of jobs, involving the population of Ukraine in active self-defense, stimulating labor activity and entrepreneurship forms the basis of stability and is a condition for post-war economic recovery. With the further intensification of digitization and automation of business processes, there will be further modification of forms of employment with an increase in the share of remote work, the economic efficiency of which is high. Social efficiency in the perspective of remote work may decrease due to the automation of live work, creating prerequisites for reducing the number of jobs in general. When developing and implementing programs for the post-war recovery of Ukraine's economy, it is necessary to use the administrative, economic, legal, methodical, organizational-informational, psychological-agitational levers available in the arsenal of the state to reduce unemployment, implement effective programs to reduce population depopulation and external migration.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conception and design of the study.

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