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INTRODUCTION

We are happy to invite you to get acquainted with the first issue of the new scientific and practical publication "Intellectualization of Logistics and Supply Chain Management".

We strongly believe that the launch of this magazine indicates the objective need to rethink a wide range of issues related to the development of theory and practice in logistics and supply chain management, awareness of the need to unite the scientific community and logistics practitioners, dissemination of modern knowledge and best practices for innovative development of the logistics services market.

The first issue of the magazine is published at a difficult time. The global coronavirus pandemic and the deep economic crisis have significantly worsened business activity in the world. Currently, global supply chains are collapsing, international trade is declining, and competition between global and regional logistics operators is intensifying. The most common thesis is that the world will never be the same again. Industry experts predict the emergence of new, more flexible and adaptive supply chain management strategies and approaches to logistics business process management. The trend towards collaborations, cooperation and unification of services is emerging, comprehensive proposals for clients are being developed. There is increasing talk about the need to build bimodal supply chains, which involves the development of different decision-making scenarios: the traditional approach - cost-effective efficiency, low risk, high predictability; a new approach "second mode" - rapid recognition of opportunities, adaptability, willingness to solve unexpected problems and look for new opportunities.

Radical transformations of the global and national markets for logistics services require appropriate scientific support. Logistics science has a special role to play in this process. Initiating the emergence of a new journal, we decided to focus on its coverage of problematic aspects of the formation and development of logistics systems at the micro, mezo and macro levels, supply chain management, digitization of logistics, methods and tools for optimizing processes in logistics and supply chains, sociopsychology relations and network interaction of enterprises using cloud technologies, artificial intelligence, e-learning, neural business process management systems, etc.

Therefore, we invite scientists, researchers and business representatives, as well as our colleagues from abroad, to cooperate and present the results of scientific research, to discus and debate on them, to work together to develop the scientific theory of logistics and promote mutual intellectual enrichment.

We hope that the new scientific publication will become a theoretical guide for young researchers and representatives of other fields.

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Chief Editor

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RESEARCH STATUS OF AUTOMATION OF LOGISTICS TRANSPORT AND DISTRIBUTION PROCESSES

Hanna Prymachenko, Yelyzaveta Hryhorova. «Research status of automation of logistics transport and distribution processes». *An analysis of the performance of modern companies has revealed a trend of active investment in innovation, especially in such a dynamic field as logistics in order to optimize supply chains. The article proves the need for a systematic approach to innovative measures in the transportation and distribution system based on the analysis of foreign experience. The dynamism of logistics processes complicates the process of control and forecasting of enterprises. The logistics trend of DHL, which regularly publishes a key tool for the global logistics community, is a radar of logistics trends that reflects the development of society, business and technology. Two major trends are analyzed: 1) social and business and 2) technological. To solve this problem, the process of digitization and the willingness of companies to work online with the help of e-commerce technology have been proposed. Two components of modern innovative business models that enable a business to be competitive and efficient are analyzed: the sharing economy and the marketplace in the logistics services market. It is determined that the main resources in logistics are material assets (especially warehouses and vehicles), labor and time. It is established that transport exchanges are actively developing in the Ukrainian market, where logisticians can choose vehicles, but there are no sites where one can simply choose a warehouse on demand (as a service). There are no tools in the Ukrainian market for quick search and safe rent of warehouses for different types of products. Searching for a warehouse is a complicated and lengthy procedure for the following reasons: the lack of a warehouse database in one source and the complexity of comparing warehouses (search on OLX.ua or through a local or international broker, or on the recommendation of acquaintances), the risks of renting warehouses from unverified agents / owners, the procedure for selecting and concluding warehouse lease agreements, the need for warehouses under peak load, continued. Therefore, in 2019, a new Ware Teka online platform has emerged for finding warehouses for rent or purchase with the largest warehouse real estate base to date, allowing real estate to be rented as soon as possible. The basic features of the Ware Teka online platform are analyzed. It is determined that modern logistics companies in Ukraine have started to implement the system of routing of goods (delivery on points of sale) and receive constant errors, therefore the process of digitization of current deliveries in real time is offered. The Ukrainian market for foreign startups is not interesting for today, and they are not ready to costomize, or costomization will have a very high cost and it is necessary to consider the issues of support after adaptation of the ready solution, to make a*

premature request about the main problems of adaptation of software products of automation of logistics processes. Support is an important cycle in working with your ISP to be able to refine or modify the software in the future and not be dependent on your provider, so you need to request technical documentation immediately. The importance of automation of logistic processes of transportation and distribution has been proved.

***Keywords**:* logistic process; transportation; distribution; marketplace; digitization; transport exchange; warehouse exchange.

Ганна Примаченко, Єлизавета Григорова. «Дослідження стану автоматизації логістичних процесів перевезення та дистрибуції». *Аналіз діяльності сучасних компаній виявив тенденцію активного інвестування в інновації, особливо у такій динамічній сфері як логістика з метою оптимізації ланцюгів постачання продукції. У статті доведено необхідність системного підходу до інноваційних заходів у системі транспортування та дистрибуції на основі аналізу закордонного досвіду. Динамічність логістичних процесів ускладнює процес контролю і прогнозу діяльності підприємств. Розглянуто логістичний тренд компанії DHL, яка регулярно публікує ключовий інструмент для світової логістичного спільноти – радар логістичних тенденцій, який відображає розвиток суспільства, бізнесу і технологій. Проаналізовано два найважливіших тренди: 1) соціальний і бізнес та 2) технологічний. Для вирішення цієї проблеми запропоновано процес діджиталізації і готовність компаній працювати в он-лайн режимі за допомогою технології e-commerce. Проаналізовано дві складові сучасних інноваційних бізнес-моделей, які дозволяють бізнесу бути конкурентоспроможним і ефективним: sharing economy (бізнес-модель соціальної взаємодії) і marketplace (екосистема і платформа для організації роботи усіх учасників ринку) на ринку логістичних послуг. Визначено, що основними ресурсами в логістиці виступають матеріальні активи (особливо склади та транспортні засоби), трудовий персонал і час. Встановлено, що на ринку України активно розвиваються транспортні біржі, де логісти можуть обрати транспортні засоби, але не має площадок, де просто можна обрати склад по запиту (як послугу). Тому у 2019 році з'явилася нова он-лайн платформа Ware Teka для пошуку складів для оренди чи покупки з найбільшою на сьогодні базою складської нерухомості, що дозволяє орендувати нерухомість у найкоротший термін. Проаналізовано основні функції он-лайн платформа Ware Teka. Визначено, що сучасні логістичні компанії в Україні почали впроваджувати систему роутингу товарів (доставки по торговим точкам) і отримують постійні помилки, тому запропоновано процес оцифровування поточних доставок у режимі реального часу. Доведено важливість автоматизації логістичних процесів транспортування та дистрибуції.*

Ключові слова: логістичний процес; транспортування; дистрибуція; маркетплейс; діджиталізація; транспортна біржа; складська біржа.

Анна Примаченко, Елизавета Григорова. «Исследование состояния автоматизации логистических процессов перевозки и дистрибуции». *Анализ деятельности современных компаний выявил тенденцию активного инвестирования в инновации, особенно в такой динамичной сфере как логистика с целью оптимизации цепей поставок продукции. В статье доказана необходимость системного подхода к инновационным мероприятиям в системе транспортировки и дистрибуции на основе анализа зарубежного опыта. Динамичность логистических процессов усложняет процесс контроля и прогноза деятельности предприятий. Рассмотрен логистический тренд компании DHL, который регулярно публикует ключевые инструменты для мирового логистического сообщества - радар логистических тенденций, отражающий развитие общества, бизнеса и технологий. Проанализированы два важнейших тренда: 1) социальный и бизнес; 2) технологический. Для решения этой проблемы предложено процесс диджитализации и готовность компаний работать в он-лайн режиме с помощью технологии e-commerce. Проанализированы две составляющие современных инновационных бизнес-моделей, которые позволяют бизнесу быть конкурентоспособным и эффективным: sharing economy (бизнес-модель социального взаимодействия) и marketplace (экосистема и платформа для организации работы всех участников рынка) на рынке логистических услуг. Определено, что*

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основными ресурсами в логистике выступают материальные активы (особенно склады и транспортные средства), трудовой персонал и время. Установлено, что на рынке Украины активно развиваются транспортные биржи, где логисты могут выбрать транспортные средства, но не имеет площадок, где просто можно выбрать состав по запросу (как услугу). Поэтому в 2019 году появилась новая он-лайн платформа Ware Teka для поиска складов для аренды или покупки с крупнейшей на сегодня базой складской недвижимости позволяет арендовать недвижимость в кратчайшие сроки. Проанализированы основные функции онлайн платформа Ware Teka. Определено, что современные логистические компании в Украине начали внедрять систему роутинга товаров (доставки по торговым точкам) и получают постоянные ошибки, поэтому предложено процесс оцифровки текущих поставок в режиме реального времени. Доказана важность автоматизации логистических процессов транспортировки и дистрибуции.

***Ключевые слова**: логистический процесс, транспортировки; дистрибуция; маркетплейс; диджитализация; транспортная биржа; складская биржа.*

Introduction. Many modern companies such as Logistics & IT company, Google, DHL express, Microsoft, Daimler, Uber, Amazon, Maersk, Metro, AT&T, Tesla and others actively invest in innovations. They have huge departments that innovate, they also open their own accelerators and actively work with startups, investing in it to be on top of the latest innovations. For example, Amazon is actively involved in related industries, developing its own projects and startups for drones, Google launches drones, Maersk has launched an accelerator to optimize the supply chain in general from logistics to production. Markets and large corporations work with them. That is, large IT companies and logistics operators understand that you need to work systematically to innovate in the supply chain management.

In addition, innovations in transportation, mobility and logistics are underway by a large number of individual startups worldwide (figure 1).

The purpose and objectives of the study. Some startups function as one business process. For example, the international logistics company FedEx (in the lower left corner of Fig. 1) performs a number of tasks and shows which startups solve them as a separate project. If a company has come up with something and wants to implement it, it is very likely that someone is already doing it, especially in an industry such as logistics. Many Ukrainian logistics companies today do not analyze foreign experience hiring teams of employees to solve their logistical issues that are not competent enough and learning from the mistakes of companies. Therefore, there are two ways for logistics professionals in Ukraine to optimize their operations. The first is to continue to work with the Ukrainian team of workers. The second is to enter the international market and introduce the results of the work of a foreign startup. The best decision to choose the option can only be made by a particular company: whether to implement a ready-made solution (customization), or independently develop it from scratch by the forces of its staff or additional. The Ukrainian market for foreign startups is not interesting for today, and they are not ready to costomize, because a costomization will have a very high cost and it is necessary to consider the issues of support after adaptation of the prepared solutions to make a premature request about the main problems of adaptation of software products of automation of logistics processes. Support is an important cycle in working with your IT-provider to be able to refine or modify the software in the future and not be dependent on your provider, so you need to request technical documentation immediately. Therefore, the purpose of this work is to analyze the automation of transportation and distribution processes. Based on the purpose of the research, the following tasks are to be solved: ways to implement the digitization of logistics processes, to study the consolidation

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processes in logistics, to investigate the relevance of the use of the economy of joint participation, marketplaces and big data in the implementation of innovations in logistics, to conduct transport and warehouse research.

Basic material and results. Alexeyev Andriy, Director of Logistics Department of JSC «Milk Alliance» [1], while building a system of operational reporting, production and sales planning, distribution management, discovered a «bush effect» in logistics when buyers form their own warehouses (inventory of products) from one or another reasons, and then they buy the products as usual and after a while begin to use their stocks, which complicates the process of control and forecast sales of products at retail outlets. This is helped by the digitization and the willingness of companies to work online (e-commerce).

The largest international service companies in Europe, for example, delivering aircraft parts worldwide, have their own start-ups such as international aviation (up to 2000 air couriers delivering parcels worldwide) [2].

Today, logistics companies exchange orders, consolidate on delivery, and platforms that allow consolidation of delivery are the future of transport markets.

Figure 2 shows the logistics trend that DHL, known as a delivery service, annually (not yet updated this year), but a huge transportation corporation with the largest number of warehouses worldwide, operating on different models, including not only is it a 3 PL operator, but also one of the largest owners of cargo fleets and its own airports, etc., it therefore occupies a huge segment in the supply chain. DHL Trend Research regularly publishes a key tool for the global logistics community – the radar of logistics trends. For the fourth year, the logistics trend radar is a dynamic, vibrant tool that reflects the evolution of society, business and technology [3]. It has become an inspiring benchmark for strategy and innovation in the logistics industry and has generated many successful, award-winning startups both within DHL and outside the company, in close collaboration with its customers and partners. They develop a radar trend and look at two major trends: 1) social and business and 2) technological. They analyzed what kind of trends in the next 5 years would be implemented and how quickly.

Figure 1. Startups in the world working on innovation in logistics

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Over the last 5 years, the sharing economy [5], marketplace [6] and big data [7] are the most relevant topics in implementing innovation in logistics. There are a lot of data in the logistics, but they are structured and understood, it is immediately clear what to look for in the analysis, big data is more for arrays of data that are not systematized. Big data in logistics helps you understand customer behavior patterns, market trends, maintenance cycles, cost reduction methods, and process optimization strategies.

Sharing economy (business model of social interaction) and marketplace (ecosystem and platform for organizing the work of all market participants) are two components of modern innovative business models that allow business to be competitive and efficient in the next 5 years.

What is Sharing Economy? It is a business model, a social trend of interaction in society, when people exchange certain values and receive material benefits from it. An example might be a library when there is no book, but there is a shared space for sharing. You can borrow tools for a while. Also services «GetManCar Car Rental – one minute car rental» is the first Ukrainian car rental, car rental through the app, without manager, office, keys with minute billing [8]. Sharing economy will change the social and economic paradigms, implementation over 10 years will greatly change the supply chain.

Marketplaces such as online supermarket Rozetka, prom.ua, kabanchik.ua are examples of business models and allow you to launch a new product line.

There is a significant amount of data in the logistics chain, and in Ukraine there is a problem in obtaining this data, analyzing and making management decisions. For example, installing GPS trackers for trucks in order to obtain vehicle moving data on a map, and you can correctly set up tracker information and receive data such as «driver has or has not reached the point of delivery», collect data about problematic drivers, routes (building the best and adjusting after passing it), etc. GPS – a necessary tool for modern logistics business to ensure the fulfillment of the main task of logistics – delivery on technology «just in time» [9], to bring to a certain place in time, to know whether the driver will have time and to warn the consignee, whether the driver has time to load the cargo and to compare the plan and the fact of the performed works.

Modern logistics companies in Ukraine have started to introduce a system of routing of goods (delivery on points of sale) and receive constant errors, because routers pass the knowledge base on the basis of the plan, but the fact is not taken into account, so the indicators are very different, and if the driver is competent, the load makes it to the point appointment. Therefore, the current delivery process should be digitized, not the correct one.

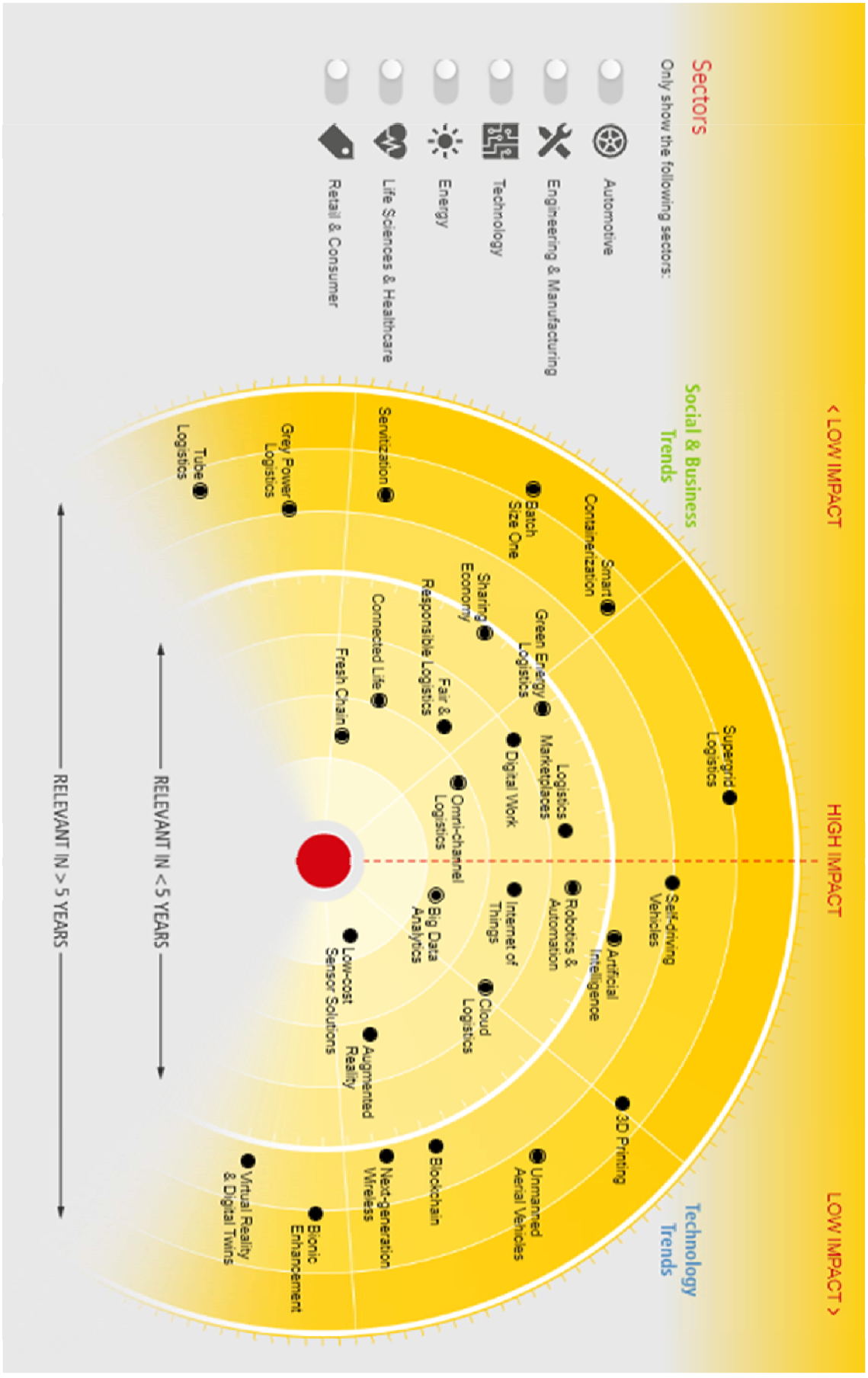

Figure 2. DHL Logistics Trend Radar [4]

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The main resources in logistics are material assets, labor and time. Warehouses and vehicles are the key of material resources. Logistics digital platforms based on Sharing Economy business models have been developing in the world for 3-5 years, for example, Park Circa – parking space exchange, Zipline – easy access to idle vehicles through mobile application, Tamyca – platform for Carting, Floow2 – provides a platform for exchanging assets through the exchange of equipment and personnel, Wonolo – a platform for finding temporary logistics staff, Parcelly – a platform for reallocating local businesses to parcels, etc., and Logistics Marketplaces, such as INTTRA – marketleys largest in sea transportations, Saloodo! – DHL freight marketplace, Flexport – the largest international freight forwarding marketplace, iContainers – a comprehensive shipping and forwarding tool for shipping, FLEXE – an online platform for empty warehouse delivery and more. These platforms allow you to manage material, labor and time resources more efficiently. In any business, there are situations when it is unable to fulfill its obligations. For example, DHL found 5-10% of cargoes that were not profitable for them and did not want to spend their resources on them, created a marketplace like Saloodo! and assembled carriers in Germany, Poland, the United Arab Emirates and Africa. That is, when there is a problem of business optimization, you can create a separate project that will help the main business. Saloodo! does not work in Ukraine because it is not a priority market for DHL. And FLEXE operates on the basis of such transport exchanges (marketplaces) as Dilla, Lardi, Timocom, Trans.eu, and there is a verification of carriers, in which a lot of resources are invested. Lardi is changing a lot now, and updates are coming soon. Trans.eu is a site like Lardi, but there is not only a search for vehicles, but also registration of documents for transportation, which is now actively developing in Ukraine.

There are only a few case studies of the use of blockchain technology, such as bitcoin [10], and in the logistics of many Ukrainian experts it makes no sense to use this technology. The main advantages of blockchain technology are the control of events in the supply chain of products, but they can also be controlled on the basis of marketplaces, which are not engaged in the deletion of information and allow you to configure the integration of data from marketplaces to the storage system of a particular company.

Transport exchanges are actively developing in the Ukrainian market, where logisticians can choose vehicles. But in the market of Ukraine and Community of Independent States countries there are no sites where you can simply choose the warehouse on demand (as a service), that is, there are no stock exchanges (marketplaces).

FLEXE falls under the typology and stock exchanges, as it is a platform for renting warehouses, but only in the USA. Created in 2016 and restructured for 42 billion dollars in 2019, they have become a full-time competitor to Amazon. FLEXE provides services 30-50% cheaper than Amazon and allows you to brand your parcels. There are no tools in the Ukrainian market for quick search and safe rent of warehouses for different types of products. Searching for a warehouse is a complicated and lengthy procedure for the following reasons: the lack of a warehouse database in one source and the complexity of comparing warehouses (search on OLX.ua or through a local or international broker, or on the recommendation of acquaintances), the risks of renting warehouses from unverified agents / owners, the procedure for selecting and concluding warehouse lease agreements, the need for free warehouses under peak load, continued.

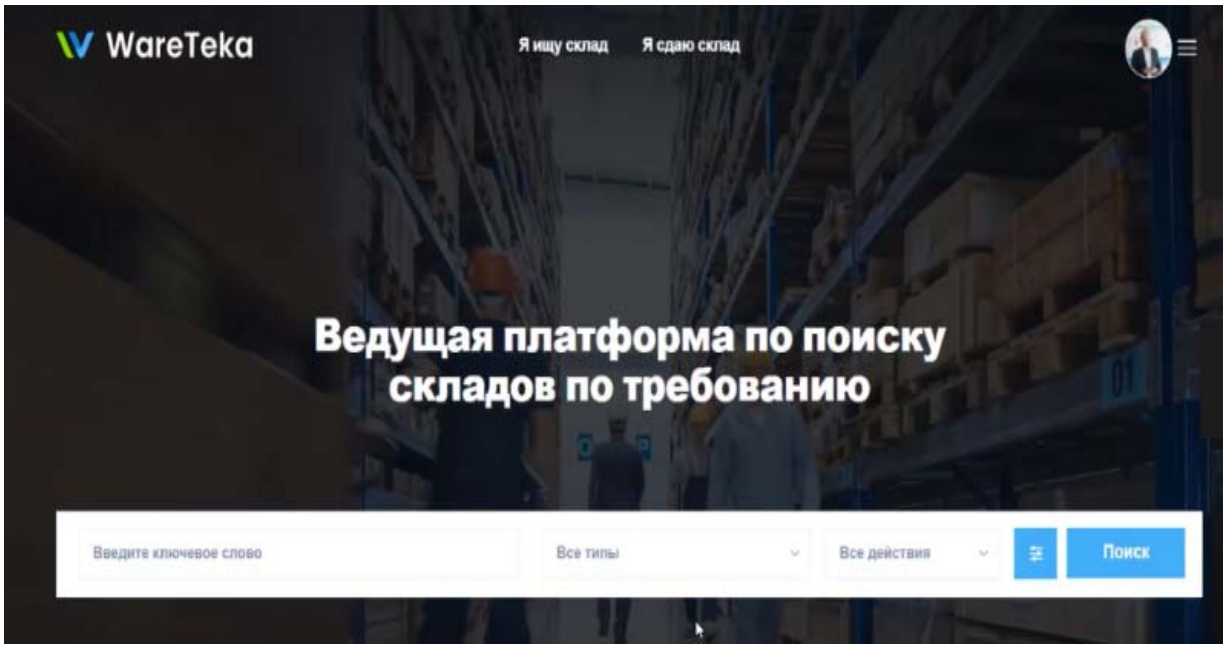

Figure 3 – Ware Teka online platform interface in 2019 first product release

Historically, transport is a dynamic system, so transport and warehouse exchanges are needed. There are up to 10 companies in the world that operate on a similar business model. In Ukraine, in 2019, a new Ware Teka online platform has emerged for finding warehouses for rent or purchase with the largest warehouse real estate base to date, allowing real estate to be leased as soon as possible (figure 3). In one place both search for a warehouse and services of 3 PL operators and brokers (assistance in selecting a warehouse, advice on rental rates and assistance in determining the optimal rental value, etc.). The two largest broker leaders in Ukraine, Cushman and Seberer, have already confirmed their participation on the Ware Teka platform. This is the first version of this product. And the second version of the product appears in May 2020, taking into account the wishes and recommendations of 3 PL operators (fig. 4), already more than 300 warehouses of almost 5 million m2 in the base and it is possible to place its warehouse (fig. 5-6) if the company has empty space and should be disposed of for 3 or 6 months.

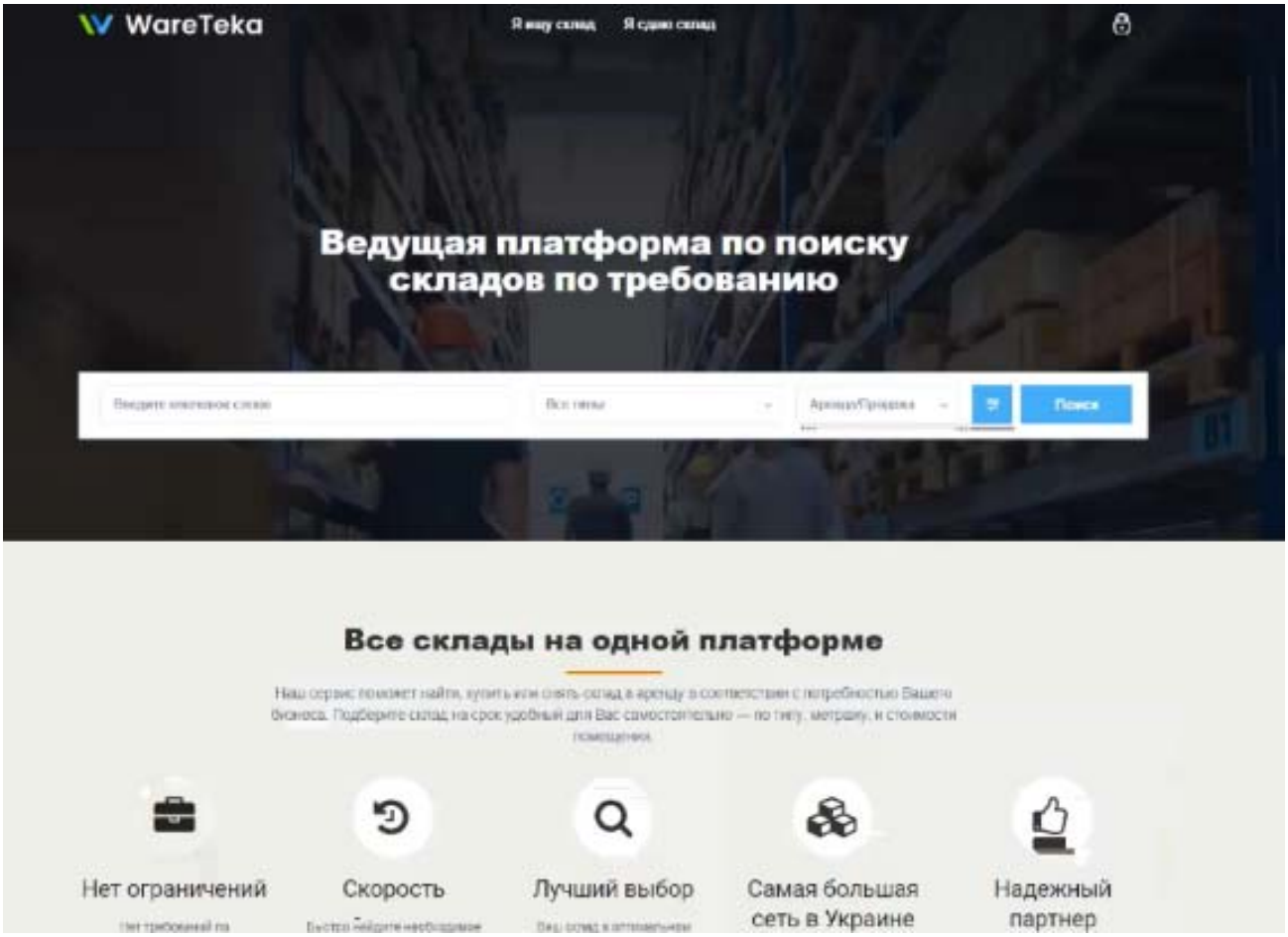

Figure 4 – Ware Teka online platform interface in the second updated product of 2020

Figure 5 – Ware Teka online platform interface when looking for a warehouse in Ukraine

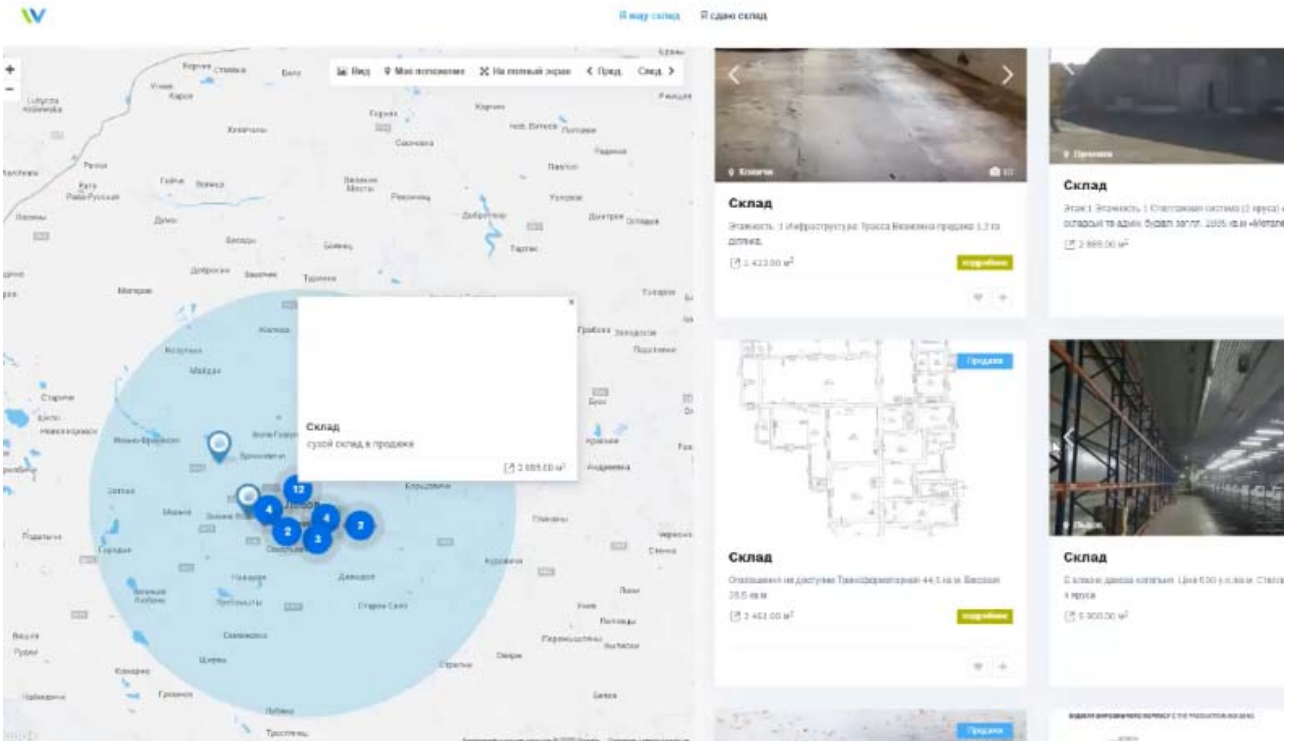

Figure 6 – Ware Teka online platform interface when searching for warehouse in Lviv region of Ukraine, 30 km radius from Lviv city

Also on the Ware Teka platform is a new «Urgent lease» service, where the warehouse and services needed today for tomorrow and payment can be made by card through the platform (fig. 7).

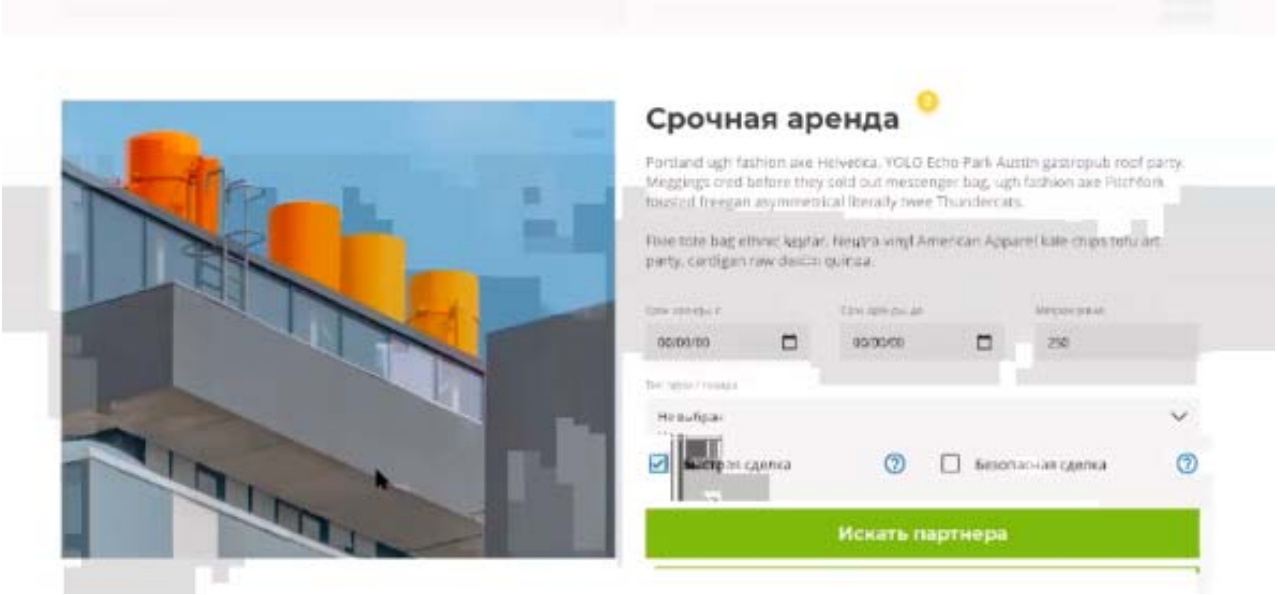

Figure 7 – Ware Teka Urgent Rental Service

Conclusions. Thus, the results of the analysis of automation of the processes of transportation and distribution indicate the need to introduce the developed world logistics technologies in the Ukrainian market of transport services on the basis of their adaptation to market conditions of uncertainty and coordination with existing software products. On this basis, the main tasks of the study were solved. A positive effect was found when implementing the digitization of logistics processes of transportation and distribution on the example of existing companies. The processes of consolidation of transport services in logistics are investigated. The relevance of using a collaborative economy, marketplaces and big data in implementing innovations in logistics and their examples and the positive productive effect are proved. A study of transport and warehouse exchanges was carried out, which showed that warehouse exchanges have just started to develop in the Ukrainian market in their global understanding and perspective direction of research.

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