

**BELARUSIAN STATE UNIVERSITY
БЕЛОРУССКИЙ ГОСУДАРСТВЕННЫЙ
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**Matseiko Margarita Ivanovna. *Digital transformation of
transport and logistics processes***

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In recent years, the concept of "digitalization" has been a subject for discussion in the leading departments of organizations, on international forums and in business circles. The term is different from the "digitization" – the process of converting information into a digital format⁵¹. Digital transformation implies changing the organization's business model with the help of modern technologies and innovations.

"A digital funnel model"⁵² is used to illustrate the digital transformation in different industries. In its center there are industries for which new technologies are a strategy of "survival", the main way to maintain competitiveness in the market - finance, telecommunications, media, services, sales. For other industries, digital transformation is still a strategy of opportunities that allows to analyze and understand what can be achieved in the near future. Such industries include production, tourism, education, real estate, pharmacy, transport and logistics.

There is a worldwide increase in the number of freight traffic on the international transport corridors, in competition among carriers, in customer requirements for accessibility and quality of services. The main objective of logistics is to manage the movement of material, financial and information flows. The main objective of digital logistics is to optimize the management of the flows with the help of new technologies.

⁵¹ Sabbagh, K. Maximizing the impact of digitization / K. Sabbagh // Strategy and formerly booz and company. – 2012. – 32 c.

⁵² Research activities [Electronic resource] / Science and technology center Gazprom. – Mode of access: <https://ntc.gazprom-neft.com/research-and-development/>. – Data of access: 15.04.2019.

So, what is meant by the reference to digitalization of transport and logistics? The main trends are:

1. The creation of digital transport infrastructure. Technical control systems allow to obtain relevant information about the state of the infrastructure, including the situation at border checkpoints, timely identify the need for repair and modernization, take into account engineering specifications when planning the freight.

2. The establishment of digital information platforms to connect all supply chain members. The platform includes a "Single window" system that enables to provide all information for import and export into a single entity at once, and "E-commerce" mechanism, which makes possible the competition between different suppliers of transport and logistics services.

3. The use of new separate technologies:

- cargo control system, which independently determines the appropriate mode of goods transportation and storage, notifies the necessity of overloading;

- satellite-based monitoring system, which allows to optimize the time of empty movement, loading, unloading, repair and downtime.

The need to acquire additional transport to increase the number of transportations will be completely removed by the possibility of intensive work of already existing vehicles.

4. The creation of international digital transport corridors. To date, it seems quite unique to transport the goods along the route China-Europe by rail in 15 days, but the digital transport corridor will halve the time.

The international transport corridor is a single trusted space, which is implemented through a number of international agreements between the participating countries (China-EAEU-EU). In each country, a national sealing operator is created, who is responsible for transit tracking, provides seals for cargo carriers, and send data to the state authorized bodies. The cargo is consolidated in China, where the customs clearance is carried out and the transportation is brought under control of sealing operators and customs authorities of all transit countries. On

arrival at the territory of the EAEU, the cargo carrier is registered automatically; the customs authorities issue electronic transit and activate the seals. Cargo tracking is carried out the whole way. On carrier's departure from the territory of the Union customs authorities complete electronic transit. The removal of the seals takes place directly at the place of delivery by the sealing operator. It is worth noting that all the information contained in the seal, as well as the inspections results and customs decisions are entered into a single database.

The effects of the introduction of a single transport corridor include: the reduction in the time required to inspect the goods, assured transit payments, increased transparency of cargo transportation and partners' trust in each other. Intelligent seals allow to control the movement of the vehicle and notify about incidents during the route (deviations from the track, unauthorized actions with the seal, etc.).

It is worth mentioning that every opportunity is often accompanied with a certain degree of risk, especially if it is connected with new technologies – risk of information leakage, external market management, unpredictable losses, fraud, etc. Government's role is to provide legislation, train competent specialists and create favorable business conditions.

The use of transit potential is a key factor in maintaining the economic competitiveness of the Republic of Belarus. The technological gap with neighboring states in the supply chain management is unacceptable. Therefore, the main goal in the development of the Belorussian logistic system is the introduction of information technologies. Despite the fact that customs authorities and foreign trade operators use automated information systems, most declarations are submitted electronically, transport monitoring is carried out with GPS/GLONASS navigation system, the process of digitalization of logistics of of Belarus is still at the stage of determining the goals and working out the main directions.

All things considered, the obvious conclusion to be drawn is that the main directions of digital development of transport and logistics are: the establishment of digital transport infrastructure

and digital information platforms, the use of certain new technologies and development of international transport corridors. Prospects for further research are seen in a more detailed study of the trend of digitalization, which will definitely affect economic processes, including the supply chain management. In the classical industry, it is possible to influence only two elements of the management triangle "Cost, Speed, Quality"⁵³. Transportation can be organized quickly and efficiently, but require large investments. The only way to achieve simultaneous effect on all the three elements is through digitalization. The main thing does not only lie in the qualitative introduction of new technologies, but also in the willingness of society to adopt them.

**Матейко Маргарита Ивановна. Цифровая
трансформация транспортно-логистических процессов**
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В течение последних лет концепция «цифровизации» часто упоминается в обсуждениях ведущих отделов организаций, на международных форумах и в деловых кругах. Данное понятие отличается от процесса «оцифровки», связанного с представлением информации в электронном виде⁵⁴. «Цифровая трансформация» подразумевает изменение модели деятельности организации, с помощью современных технологий и инноваций.

Для наглядного представления цифровой трансформации в различных отраслях используется модель «цифровой воронки»⁵⁵. В ее центре находятся отрасли, для

⁵³ Hall, K.A. Perceptions of time, cost and quality management on building projects / K.A. Hall // The Australian journal of construction economics and building. – 2002. – №10. – p. 48-56.

⁵⁴ Sabbagh, K. Maximizing the impact of digitization / K. Sabbagh // Strategy and formerly booz and company. – 2012. – 32 с.

⁵⁵ Research activities [Electronic resource] / Science and technology center Gazprom. – Mode of access: <https://ntc.gazprom-neft.com/research-and-development/>. – Data of access: 15.04.2019.