

**DIGITAL TECHNOLOGY AND SAP SYSTEM IN LOGISTICS**

National Aviation University

**Abstract:** *The article examine the general provisions on digital technology and in-depth disclosure in the field of logistics on the example of SAP system*

**Key words:** digital technologies; development; logistics; SAP system; IoT; business process; software; innovative logistics trends.

In today's world, digital technologies and their development have become an integral part of the economy and society. Such trends require enterprises to be flexible, quick to respond to change and constantly generate new ideas. In many areas of the economy, digital technologies have become drivers. In such areas as logistics, digital technologies have been used already long time, the improvement of which will always be relevant. Such use significantly increases the competitiveness and investment attractiveness, not only of an individual enterprise, but also of the whole industry. In recent years, logistics as an industry has advanced significantly in areas such as artificial and advanced intelligence, advanced analytics and automation. The Internet of Things, Big Data, Cloud Computing, Wireless Communications, Next-Generation Sensors and Sensors are technologies already used in enterprises. These systems are able to increase the efficiency of routine, often repetitive, physically complex logistics operations. [1] Another modern digital technology is robotics. But robots are not only material objects, but also software products, the task of which is the robotization of business processes. In accordance with the IEEE Corporate Advisory Group, Robotic Process Automation (RPA) is the use of a “preconfigured software instance that uses business rules and predefined activity choreography to complete the autonomous execution of a combination of processes, activities, transactions, and tasks in one or more unrelated software systems to deliver a result or service with human exception management.” [2]

Real-time supply chain management is an important part of innovative logistics trends. This technology provides 20% more efficiency due to the provision of the scheme of transport movement, road conditions, weather conditions and allows you to optimize delivery routes. Undoubtedly, warehousing operations have undergone significant changes in recent years, so one of the obvious innovations is warehousing robotics and IoT sensors that allow you to track inventory, vehicles and equipment using cloud services.

The next significant element of digital logistics is electronic document management. It reduces transportation costs by 10-15% by reducing paperwork and delays in delivery, which is associated with its registration.

The most well-known software used in logistics include [3]:

- Enterprise Resource Planning (ERP);
- Warehouse Management System (WMS);
- Transport Management System (TMS);
- Customer Relationship Management (CRM);
- Radio Frequency Identification (RFID).

The effect of using digital technologies in the design of travel documents using electronic signatures in direct international communication is formed at the highest level of management of the company has a synergistic effect of interaction of all its elements, and eliminates waste of time at all stages of the life cycle. . Creating a single information space through digital technology opens up new opportunities for management logistics processes.

On the other hand, digitalization has not only advantages but disadvantages too, that could include: data security, complexity, privacy concerns, social disconnect, work overload, digital media manipulation, organization and storage etc. [4]

Let's consider some example of ERP system as SAP. SAP is business process management software that develops solutions that simplify efficient data processing and information flows across the organization. [4]

SAP consists of several functional blocks, includes management, integration and solution of all tasks for:

- personnel, administrative activities;
- accounting and finance department;
- trade, customer relations (CRM systems);
- system administration, data control and web-services;
- budgeting;
- production, supply, warehouses, logistics (SCM, EWM);
- Risk and Strategic Planning (GRC).

This tool, which significantly facilitates the interaction between management and administrative structures, helps to share information with partners, integrate new conditions and solutions with existing ones.

The next-generation ERP system is SAP S / 4HANA, which uses in-memory computing to process vast amounts of data, as well as supporting advanced technologies such as artificial intelligence (AI) and machine learning.

The SAP Integrated Business Planning system is designed to automate and manage supply chains. They become more transparent and stable, the company receives materials and raw materials for production on time, optimizes the timing and cost of delivery of goods to customers.

Adaptation of SAP S / 4HANA and SAP IBP to the needs of the enterprise allows:

- optimize routes and interaction between employees;
- increase the efficiency of work with clients;
- reduce the cost of transport services by improving the quality of logistics;
- manage integrated supply chains through end-to-end analytics;
- provide employees with a convenient tool with a single interface, available both in the office and on the go.

Thus, in order to achieve economic growth in the face of rampant digitalization, the ability to adapt to the changes that bring decisions about the point or total use of digital technologies into the business is critical. SAP professionals are driven by digital transformation trends such as smart enterprise, internet of Things (IoT) and cloud technologies, using artificial intelligence and machine learning technologies. Constant updates of the system allow the company to stay afloat and constantly improve its product and increase the efficiency of the enterprise.

## REFERENCES

1. Пять ключевых технологий для цифровой трансформации в логистике. *Everest Innovation Integrator*. URL: <https://www.everest.ua/pyat-klyuchovyh-tehnologij-dlya-cyifrovoyi-transformacziyi-v-logistyczi/>.
2. Molchanova K. M. RPA prospects in transport and logistics. *Матеріали XV Міжнародної науково-практичної конференції "ABIA-2021"* (м. Київ, 20-22 квітня, 2021 р.). URL: <http://conference.nau.edu.ua/index.php/AVIA/AVIA2021/paper/view/8068/6712>.
3. Краснобока А.М. Вплив цифровізації економіки на логістичну діяльність підприємства. *Матеріали Міжнародної наукової конференції «Сучасні виклики сталого розвитку бізнесу»* (м. Житомир, 5-6 листопада 2020 р.). URL: <https://conf.ztu.edu.ua/wp-content/uploads/2021/01/333.pdf>.
4. Hryhorak M., Molchanova K. Disadvantages of Digitalization of Logistics. *Science, Education, Innovation: Topical Issues and Modern Aspects: 2<sup>nd</sup> International Scientific and Practical Conference* (Tallinn, May 11-12, 2021). Tallinn, Estonia: Ühingu Teadus juhatus, 2021. P. 48-50.
5. Як підібрати SAP-рішення під галузеві потреби. *Benoy*. URL: <https://benoy.com.ua/blog/yak-pidibraty-sap-rishennya-pid-galuzevi-potreby/>.

**Sirenko Vladyslava O.** – student of the Logistics Department, National Aviation University, e-mail: [vlada.sirenko1@gmail.com](mailto:vlada.sirenko1@gmail.com)

**Molchanova Kateryna M.** – Senior Lecturer of the Logistics Department, National Aviation University, e-mail: [molchanova\\_@ukr.net](mailto:molchanova_@ukr.net)