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THE USE OF MODERN DIGITAL TECHNOLOGIES AS A FACTOR IN INCREASING THE COMPANY'S COMPETITIVENESS

The modern world is changing rapidly, requiring efficiency and speed in responding to new challenges of the global market. The digital economy is becoming a key tool for increasing the competitiveness of enterprises. However, the transition to a digital environment also raises the issue of mastering new technologies and integrating them to transform information flows.

Digital transformation increases the competitiveness of enterprises and the efficiency of development of regions and sectors of the economy. It ensures access to and dissemination of information, non-discriminatory market access, and conditions for the development of telecommunications based on information communication, and digital technologies (ICT and DT). Attracting investments and introducing innovations promote competition and partnerships in the market.

Improvement of the company's internal operations contributes to its competitiveness. Automation of business processes of data collection and analysis at enterprises accelerates their development and increases their competitiveness, including innovative development in the context of global competition.

This paper presents a model that addresses important aspects of data processing and its application in manufacturing. The model is divided into three phases. Each phase is interconnected and has a cyclical effect. The use of technologies, such as the distribution ledger and big data, allows for the rapid collection and evaluation of data for effective development. This model involves the use of digital transformation technologies.

To build this model, it is proposed to use two technologies: the distributed ledger (Blockchain) and big data. The application of the model is considered on the example of the organization of industrial production and trade in the European Union.

The model is an information space with data on EU industries stored in a cloud-based registry. The data is evaluated by innovation activity. The concept of Big Data is the processing of large amounts of data that are very difficult to manage using conventional tools and technologies. The volume and speed of data processing determine the availability of information using Big Data technology.

With regard to the use of Big Data technology within the EU, the industrial sector is planning to provide information from different locations in the EU. Big Data is an information resource that provides the most accurate and fastest information to EU members. Thanks to Big Data technologies, incoming information is continuously structured and analyzed. This allows to extract the necessary information from the processed data. This process is continuous. It is important that information content is provided by both production facilities, research institutions and other organizations. This affects the production process and the sale of goods. The principle of operation of business processes of Big Data and Blockchain technologies consists of three phases (Figure 1) [2, p. 211–212; 3].

The article presents the concept of a model that considers the process of systematic distribution and storage of information. The first phase accumulates data from external agents into the information space.

Logistics Euro-centers and carriers play a key role in the supply and picking of goods. Fast and accurate information is important for manufacturers and suppliers. The EU consists of more than 25 countries, so, of course, the amount of data is expected to be large. Big Data technology makes it possible to process information as quickly and efficiently as possible.

After digitization of the received data, the II phase of the model comes into force. It should be noted that the II phase is unique in that it is a merger of two technologies, Blockchain and Big Data, and when using the distributed ledger technology (Blockchain), information is exchanged directly between the participants of a single process. After the transformation, the data is distributed by network nodes. Blockchain technology can radically change enterprises, business models, and operational processes. In fact, it forms a basic technology for creating new foundations, existing economic and social systems. The scope of Blockchain application is wide: financial and banking sectors, micropayments, smart contracts, etc. [4].

In this case, Blockchain technologies are used as an accumulation center for the supply chain and the Internet of Things. Blockchain has the advantages of automating and speeding up the business process from production to the end customer, while complying with EU regulations on product use, customs regulations, payment and delivery.

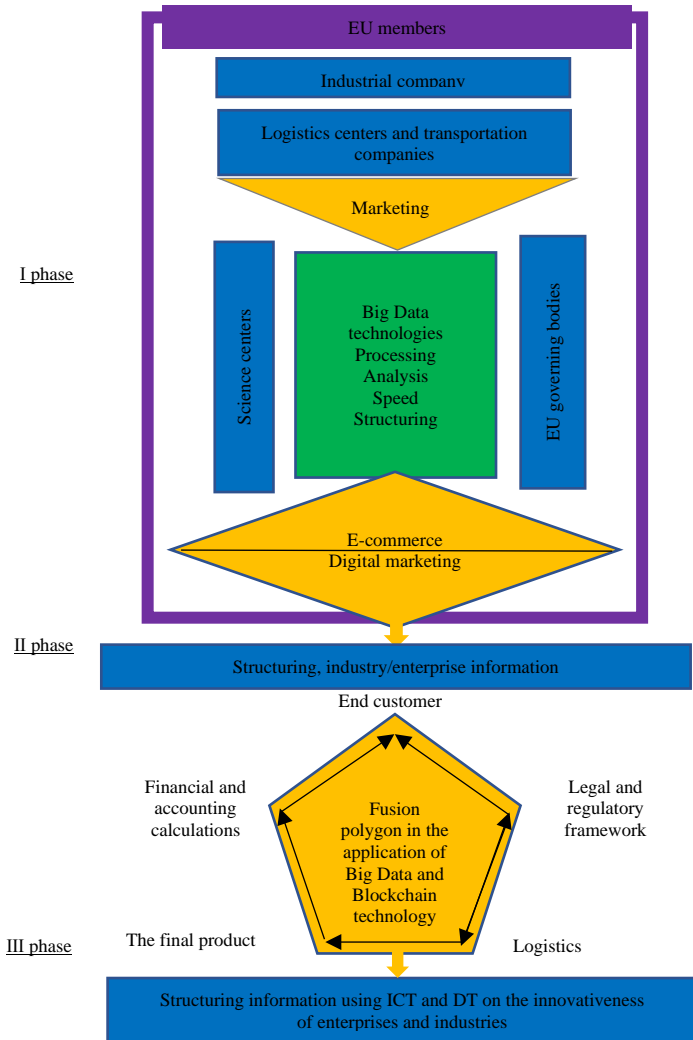


Figure 1. Figure created by the author

This is how the III phase of the technology chain comes into effect. It is in this phase that information is accumulated in the information and innovation potential of both manufacturing companies and industries, which makes it possible to continuously improve production.

The implementation of this method fundamentally changes the methods of measuring the market, taking into account the experience of the EU

countries. Thanks to modern technologies, such as ICT and digitalization, the process of determining the market's innovation potential is becoming simpler, clearer and less costly. Competitive information is available to a limited number of EU members and as many organizations as possible [1, pp. 133–134; 2, pp. 213–214].

This model can use the results of statistical, financial and economic analysis to identify the main areas of activity, opportunities for effective development and even the use of innovative technologies. The empirical method allows analyzing relationships and evaluating partnerships.

The algorithms for determining the information and innovation potential of enterprises and industries of the proposed methodology are incomplete, since they do not include modern forms, management and organization: such as the management component, components of "external" consulting and consulting methods; solving the problem of ensuring human resources and providing financing for production. The issue of determining the information and innovation potential of the industry's innovativeness from the EU is complex, multifaceted and requires careful study.

The potential of enterprises in the sectors is determined by the results of research in the field of innovation and information technology. This facilitates recommendations, commercialization, and implementation of scientific technologies. Obtaining important information improves the EU's competitiveness in the global market and helps to achieve the EU's goals [2].

The transition to new economic relations under the influence of digital transformation leads to the formation and functioning of business information and innovation ecosystems in developed countries (the United States, China, Japan, and the EU) and the emergence of "breakthrough" technologies that can reduce the cost and improve the quality/security of information. Data digitization is exactly the tool that can provide the information and network society with the necessary information space.

References:

1. Popovych O., Pustovit O., Chobal L. Digital tools integration in domestic tourism and restaurant management: potential of cloud computing, blockchain, big data, and ai. *Investytsiyi: praktyka ta dosvid*. 2023. No. 14. P. 128–134.
2. N. Deepa et al. A survey on blockchain for big data: approaches, opportunities, and future directions. *Future generation computer systems*. 2022. Vol. 131. P. 209–226.
3. Big data. *Shaping Europe's digital future*.
4. Svystun O. The future of big data: innovative technologies and trends for ceos to watch. *Techstack*. Blog.