

## THE ROLE OF DIGITAL ECONOMY IN THE EFFECTIVE MANAGEMENT OF MODERN ECONOMIC RELATIONSHIPS

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Digital technologies are becoming an integral part of every sphere of the everyday life of the modern world. Today it is difficult to imagine human activity without the help of electronic, computer network and many other important automated technologies. The digital environment has touched communication, production of goods, provision of services, performance of work, independent firms work. In connection with this, such a unique concept as "digital economy" appeared and originated. This article is devoted to the emergence of a new economic era – the era of the digital economy. The article discusses the nature and meaning of the concept "digital transformation of the economy" at the present stage of management; the development of global digital economies; the place of Russia is indicated in the international ratings of the digital economy. Information and communication technologies stand out as a key component of digital economy. The business benefits of digitization of the economy are considered: saving on resources, lowering the entrance threshold to business, mastering new products and technologies, reducing costs, the possibility of using new business models. Highlighted the challenges and threats that the digital economy brings with it: the possibility of fraud, the risks of information leakage, the threat of job cuts. The research results showed the need for digital transformation not only in human activities, but also in the manufacturing sector. It was proved that digital transformation is an integral part of the innovation management process.

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**Keywords:** innovation management, digital economy, digitalization, information and communication technologies

Digital economy is an economic activity caused by billions of everyday online connections between people, businesses, appliances, data, and processes. The basis of the digital economy is hyperlinks, which interconnect people, organizations, and technical devices based on the Internet, mobile technologies, and the Internet of Things (IoT).

New technologies are increasingly developing on a global scale. The explosive growth of social networks, the smartphone market, broadband access to the Internet and artificial intelligence is changing the world space. Currently, about 40% of the world's population have access to the World Wide Web. The use of digital technologies for the sale of goods and services, the provision of public services, education of citizens will allow the whole society to receive the so-called "digital dividends", which are understood as the growth of national welfare, material profits, and transparency of government.

Digital technologies are changing the very operating model of companies, especially in the banking and telecommunications sectors, increasing cost efficiencies and identifying new market opportunities. Methods of analyzing large amounts of data are actively used to obtain new information and make effective and optimal management decisions. This phenomenon is called "digital economy".

Forming and developing, digital economy changes traditional ideas about the work of enterprises; the cooperation between different companies; the services, information and products, which consumers can get.

Professor W. Brenner of the University of St. Gallen in Switzerland considers that the

comprehensive use of digital data transmission technologies transforms existing business models, contributes to the creation of new products and services, gives rise to the new processes that become more efficient and form a new management culture [5].

For the first time the concept of "digital economy" was introduced in 1995. Nicholas Negroponte a computer science specialist, founder of the Media laboratory of the Massachusetts Institute of Technology (MIT), notes that the new economy is characterized by lower resource costs and instantaneous global movement of goods through the network. According to A. Engovatova, digital economy is an economy based on the new methods of generating, processing, storing and transmitting data, as well as digital computer technologies [3]. Another famous scientist R. Meshcheryakov defines digital economy as economic production, which uses digital technologies (Internet of Things, Industry 4.0, fifth generation communication networks, etc.) [3].

The World Bank describes this term as a variety of economic relations, reducing long chains of intermediaries using the Internet, information and communication technologies that accelerate relations between companies, banks, government and public, transactions and operations: sales, loans, leases, taxes, fines, fees, payments and settlements, etc. [1]. Modern understanding and analysis of this term is presented in the Strategy for the Development of the Information Society of the Russian Federation for 2017-2030, where the concept is viewed as an economic activity, in which the key factor in production is data in digital form,

processing large volumes and using the results of the analysis compared to traditional forms of management, which can significantly improve the efficiency of various types of production, technology, equipment, storage, sale, supply of goods and services [7].

Taking into account all the definitions, we can conclude that “digital economy” is an economy of a new technological generation who uses a huge amount of data produced in a wide variety of information systems [2].

Creating conditions for the development of a knowledge society in the Russian Federation, improving the well-being and quality of life of citizens of our country by increasing the availability and quality of goods and services produced in digital economy using modern digital technologies, raising awareness and digital literacy, improving the availability and quality of public services for citizens, as well as security both within the country and abroad.

The problem of the formation and development of the digital economy is relevant not only in theoretical, but also in the field, including at the state level, in connection with the understanding of the crucial role of digital technologies in the development of the country's strategic competitiveness.

Digital economy is represented by the following three levels, which in their close interaction affect the lives of citizens and society as a whole:

- markets and sectors of the economy (areas of activity), where the interaction of specific subjects (suppliers and consumers of goods, works and services);
- platforms and technologies where competencies are formed for the development of markets and sectors of the economy (fields of activity);
- the environment that creates the conditions for the development of platforms and technologies and effective interaction of market entities and sectors of the economy (spheres of activity) and covers regulations, information infrastructure, personnel and information security.

The digital age makes us rethink the usual business standards and established business processes. Immersion in the digital environment becomes a necessity.

The world industrial giants were convinced by their own experience that production in the format of a new sample is a reduction in costs and an increase in productivity due to the informatization of production. A key success factor is the ability to react sensitively and quickly to changes in the market and customer needs, realigning itself to digital

production (when all operations are automated, robotic equipment is used).

To move to Industry 4.0, you must first fulfill three conditions:

1. To computerize workplaces and production equipment.
2. To use modern software for the preparation of production, production management and resource management.
3. To create a single information space at an industrial enterprise, with the help of which all automated enterprise management systems, as well as industrial equipment, production personnel will be able to quickly and timely exchange information.

Business benefits from the project:

- saving on resources
- avoiding long deliveries and eliminating a series of intermediaries,
- lowering the entrance threshold to the business,
- mastering new products and technologies
- creation of smart factories and network production,
- reducing the cost of products, reducing the time to release,
- the possibility of using new business models.

Digital transformation of production will lead to increase efficiency of labor productivity; improving the quality of products; complication of products; production automation at all stages of product manufacturing.

Digitalization will allow production to optimize costs, increase the profitability of existing assets and increase profitability.

Despite bright prospects, the digital economy carries with it obvious challenges and threats:

1. control of the field of digital services is reduced, and opportunities for fraud are increasing;
2. increased risks of information leaks, which requires an increase in the level of protection, the allocation of additional investments in information security;
3. the threat of job cuts. The transition to a digital economy also makes it difficult to use foreign software;
4. A digital divide is a gap in digital education, in terms of access to digital services and products, therefore, in the degree of society of one or different countries located in one country or in different countries.

Interest in the digital economy is due to the fact that research by scientists, international organizations, in particular the World Development Report 2016: Digital Dividends of the

World Bank, shows that information technologies are becoming increasingly important in the economic development of all countries of the world without exception.

Currently, digital economy is a strategic sector of the economy that promotes the growth of productivity and competitiveness of various companies and countries. The cross-border nature of the digital economy affects all areas of activity and is the source for the development of new innovative sectors in business.

According to The Australian Bureau of Statistics, digital economy is a global network of economic and social activities, which is based on such platforms as the Internet, mobile and sensor networks, including electronic commerce. Actual areas of the digital economy are improving the efficiency: production processes, inventory management and knowledge management.

It is noteworthy that advances in digital technology are directly related to organizational innovations aimed at improving business efficiency by optimizing the organization's management process (for example, reduce administrative costs, transaction costs, increase productivity).

It should be emphasized that internet economy offers new business opportunities and contributes to the creation of new jobs. Besides, information and communication technologies (ICT) are the key components of the digital economy. For their effective functioning in this area, it is necessary to develop; cloud applications; new business models and innovations in the field of trade and services; new digital security technologies in the implementation of digital business operations; norms, standards and special programs to ensure the integration of traditional technologies with ICT through user-friendly interfaces.

In this regard, the training of specialists in this field of knowledge is essential and relevant, as new jobs created in the field of digital economy imply compliance with high standards. These standards should be implemented by qualified staff with specific skills.

Today, the concept of digital economy for enterprises includes the use of virtual processes for the most optimal and rapid adoption of effective industrial, economic, managerial decisions.

To improve the efficiency of their activities, industrial enterprises are actively beginning to use digital technologies, which allow them to reduce the cost of a product, to decrease the market time, to improve their technical and consumer properties.

With the help of modern digital technologies, it is possible to conduct virtual tests of equipment (and, if necessary, promptly make changes to the digital model), optimize its loading and maintenance; manage production processes; effectively and quickly interact with suppliers, partners, etc. Digitalization is needed to increase the final efficiency of digitized processes [5].

According to the data, Norway, Sweden, Switzerland, Denmark, Finland, Singapore, South Korea, Great Britain, Hong Kong, the USA were in the TOP-10 countries with the most developed digital economy in 2017[8].

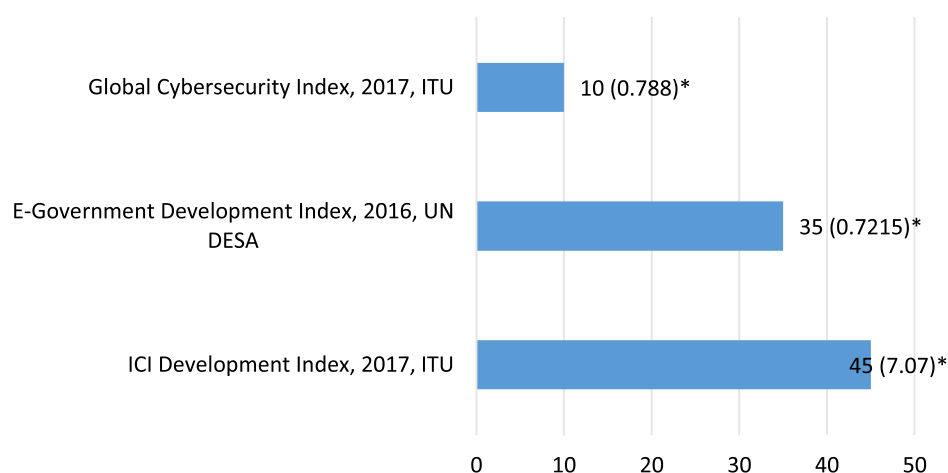
For example, in the United States, the departmental program Digital Economy Agenda was announced, in which the Internet is viewed as a global platform for communication, trade, and innovation. Digital Attache program was implemented for American companies so that they could participate in the global digital economy and work in the market of any country in the world.

Russia is adjacent to China, India, Malaysia and the Philippines. These states are at the peak of digital development and demonstrate steady growth rates (figure) [4, 8].

Today in Russia the question on creation of own systems of development of digital economy is given attention. Digital technologies are becoming a ubiquitous part of economic, political, and cultural life of enterprises of the Russian Federation. Russia is on the progressive stage in the development of modern civilization, which is characterized by the domination of knowledge, science, technology and information in all sphere of life of the country. Events Russia's foreign policy and global trends of recent years, our country faces the issue of global competitiveness and national security. No small role in this issue played by the development of the digital economy in the country. Some elements of the digital economy are already successfully functioning. For example, bulk transfer of documents and communications in digital media, resolution, electronic signatures, communication with the state are also moving to an electronic platform.

The analysis of indicators of development of the digital economy, namely, level of digitalization, the digital economy share in GDP, average delay in the development of technologies, leads to the conclusion that Russia is not included in the group of countries-leaders in the development of the digital economy, but despite this, the development of digitalization of our economy in recent years has been steadily growing and a significant number of positive trends.

## Place in the Rating



The place of the Russian Federation in the international ratings of digital economy development (\*the corresponding index value is indicated in brackets.) ITU – International Telecommunication Union [4]

There are companies that have achieved high results in the field of digitalization in Russia. Such organizations have made digital transformation of production one of the development priorities. Among these companies are “Gazprom” and “KamAZ”. In particular, Gazprom called digital platforms a key asset ensuring production efficiency. “KamAZ” also participates in the digitalization program, which includes the transition to digital design and production [9].

It seems logical to assume that the intensive introduction of digital technologies will significantly reduce the backlog of the Russian Federation from the leading countries, as well as increase long-term sustainable development. According to the forecast, by 2020 the share of the digital economy in Russia will increase. Such economic forecasts are associated not only with the automation of processes, but also with the introduction of fundamentally new, breakthrough business models and technologies. Among them are digital platforms, digital ecosystems, in-depth analytics of large data arrays, Industry 4.0 technologies, such as 3D printing, robotization, Internet of things [6].

The development of the digital economy will expand trade diplomacy, provide a link between politics and trade, and give the necessary assistance to small and medium-sized

enterprises that can use reliable channels for e-commerce.

To sum up, digital economy is a new type of economic relations in all sectors of the world market, which is rapidly developing and can become the main type of commodity-money exchanges at the global world level. Russia faces tremendous opportunities to improve technological progress in many areas. The intensive introduction of digital technologies will significantly reduce the backlog of Russia from the leading countries, as well as increase long-term sustainable development.

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