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OPTIMIZING THE DEVELOPMENT OF THE DIGITAL ECONOMY

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Abstract:
The development of scientific thought, the introduction of digital technologies and artificial intelligence have led to fundamental changes in economic relations. The fight against the new coronavirus pandemic , the transfer of most employees around the world to remote work, and the increase in the level of digitalization of society in this regard make the topic of scientific research even more relevant. This article summarizes and develops the theoretical foundations for the development of the phenomenon of "digital economy", based on the analysis of the conceptual and categorical apparatus, a number of terms are clarified, and acute debatable problems of the formation of a global digital divide in society are identified. The study concluded that the adoption of national digital strategies is the basis for the development of the digital economy and the information society as a whole.

Key words: digital economy, IT technologies, information and communication technologies, artificial intelligence, robotics, transaction costs, Internet

Introduction

Relevance of the chosen research topic. The introduction of digital technologies over a long period has led to fundamental changes and determined the development trajectories of the economy and the entire society as a whole. The formation and development of the digital economy is one of the priority areas for most countries. In recent years, there has been a rise in the wave of transformation of activity models in business and the social sphere, caused by the creation of new-generation digital technologies, which, due to the scale and depth of influence, have been called "end-to-end". Such technologies include artificial intelligence (AI), robotics, the Internet of Things, wireless communication technologies and a number of others. According to experts, the introduction of end-to-end technologies can increase labor productivity by 40%. In the near future, the effective use of new digital technologies will determine the

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level of international competitiveness of both individual companies and countries as a whole, as well as form the infrastructure and legal environment for digitalization (digital law).

The goal is to research and develop the definition of “digital economy”, as well as to assess the practice of implementing the digital economy.

Theoretical foundations of the digital economy

The concepts of "digital economy" and "digital money" are included in the lexicon of journalists, lawyers, economic commentators, experts and politicians. This term was first introduced 25 years ago by Professor Nicholas Negroponte (Massachusetts Institute of Technology, USA) [1], however, there is still no clear definition, which contributes to the creation of a significant obstacle to its conceptual design. According to the President of the World Bank Group Jim Yong Kim, humanity is currently experiencing an information and communication revolution. The number of the poorest households with a mobile phone is higher than those with access to comfortable living conditions or drinking water [2]. The digital economy as one of the consequences of the progress of science and technology implies the transfer of production and distribution of goods and services to the digital Internet environment [8, 10] (Kirillov , 2018; Kraskovskiy , 2017) .

At the new level of development of digital technologies, one of the main risks and threats is the powerful growth in the quantity, quality and diversity of relationships between companies, socio-economic systems, social platforms and people [7, 13] (Inozemtseva , 2018; Utkina , Emshanova , 2016) . This growth is accompanied by exponential dynamics of the number of transactions and volumes of data, information and information, which leads to an even more complex integration of economic and social opportunities, the consequences of which humanity has yet to assess. These serious consequences and transformations require new competencies, abilities and skills from society and each individual, as well as adaptability in the use of new technologies in the phenomenon of everyday life. Today, the processes of forming educational programs that meet global trends in changing the socio-economic and political life of society, as well as the personalization of individual learning trajectories that ensure a high level of "digital literacy" are of particular importance.

The role of the influence of digital technologies on the process of transformation of socio-economic systems and social platforms is beyond doubt [3, 17] (Aubakirova , Isataeva , Kuatova , 2020; Shchegoleva , Malsagov , 2019) . However, the issues of regulation of cyberspace and the digital environment still remain poorly studied and controversial. In the scientific field, insufficient attention is paid to the development of the digital potential of companies in order to achieve innovative growth of individual economic entities, industries and territories [3] (Aubakirova , Isataeva , Kuatova , 2020) . It should also be noted that the institutional aspects of the development of the digital economy remain without due scientific attention, the problems have not been resolved and the prospects for the development of small and medium-sized businesses in the context of digitalization of the economy have not been assessed, the role and place of the digital economy in the general system of modern economic relations are not reflected [18] (Cerruela Garcia , Luke Ruiz , Gómez-Nieto , 2016) .

According to experts, at the beginning of the third decade of the 21st century, about 15–20% of humanity lives and interacts in a post-industrial (information) society, 60–70% remain on the foundation of an industrial society, 15–20% of the Earth's inhabitants have not overcome the threshold of primary industrialization. The main reason for the formation of such polarization of human society is the "global digital divide". The previously existing paradigm of social opposition between the owners of the means of production and hired workers is being replaced, according to M. Castells , by a division

into the "Internet haves" and the "Internet have-nots" [14, p. 66] (Skibitskiy , 2015, p. 66) .

Certain modern digital technologies imply a high level of public involvement in the digital transformation process. The most widespread use of technologies is to solve problems of effective supply chain management (SCM). This technology is used in more than 50% of companies in high-income countries, which allows for optimization and almost complete control over the technological cycle of raw material procurement, production of material goods and their subsequent sale. In 2nd and 3rd place with approximately the same indicator of about 25% are technologies for solving enterprise resource planning (ERP) problems and effective customer relationship management (CRM) systems . Online shopping, online sales and cloud computing systems are also widely used. In last place is the use of the radio frequency identification system (RFID), applied in 5% of companies. This small share of the application area is explained by the fact that companies must directly interact with clients - individuals who are engaged in retail trade or logistics services. In the most economically developed countries, companies operating in the field of digital technologies have an annual market capitalization of over $ 1 billion (these are mainly companies in North America, Asia and Europe). This indicator correlates with the indicators of the general level of development of digital technologies [16] (Tagarov , 2021) .

Based on the above, it can be stated that the digital economy is the processes and methods of implementing economic activity based on the use of digital technologies related to electronic business and trade, allowing the implementation of digital goods and services in the cyber environment [3]. In other words, it is a system of concluding transactions using electronic means of transmission, exchange and storage of information (stationary and mobile Internet) using the capabilities of electronic means of payment, cryptocurrency and digital currency.

The operationalization of the definition of “digital economy”, its clear description allows to create a unified system of statistical measurement of the digital economy for the implementation of full-scale public-private regulation and monitoring, substantiation and assessment of the effectiveness of the activities of companies and states in this area [20] (Abdrakhmanova , Vishnevskiy , Gokhberg et al ., 2020) .

In our opinion, the concept of "digital economy" is much broader than the traditional understanding of the processes of simple digitization of data and automation of various types of processes. This is an innovative way of implementing the inclusion of a variety of advanced information and smart technologies, as well as new types of social digital platforms that allow creating an environment of hypercommunication , giant databases (big data), wireless networks, various types of mobile devices and gadgets, as well as social media platforms [15] (Semyachkov , 2020) . Within the framework of the digital economy, all of these technologies are successfully used in both individual and integration modes.

The survival and increased competitiveness in cyberspace of manufacturing and trading companies, enterprises and structures providing services, non-profit organizations and government agencies depends, among other things, on the level of adaptation of employees and their ability to apply innovations and use digital technologies [5] (Grachev , 2021) . In this regard, the importance of the digital economy as a vital sector that provides the opportunity to achieve significant growth in the production of goods (works and services) should be emphasized.

The competitiveness of participants in the digital environment has its own specific features and forms, in particular, competition between business models and digital platforms arises; a powerful “network effect” and “scale effect” appear; two-way digital

markets are created (for example, various types of search engines); conditions are formed for high rates and volumes of investment and innovation, leading to rapid technological progress [4] (Vasilenko , 2017) .

Today, the digital economy is penetrating all areas of social and economic life, creating a digital landscape for acquiring new skills, making optimal decisions, and generating new scientific research and breakthrough technologies.

According to the World Bank, the digital economy is a system of economic, social and cultural relationships based on the use of digital information and communication technologies [4].

There are three basic components of the digital economy, which include:

1) infrastructure – hardware, software, telecommunications, etc .;

2) the ability to conduct electronic business transactions – business processes implemented through computer networks within the framework of virtual interactions;

3) electronic commerce (online trade) – delivery of goods via the global Internet (“Internet of Things”), which currently represents the most significant segment of the digital economy [9] (Kiselev , 2013) .

The main characteristics of the digital economy are:

- implementation of economic activities through special digital platforms and ecosystems;
- application of personalized service models;
- direct interaction between producers and consumers in a computer network [19] (Gomonov , Berezin , Matyushok , Balashova , 2017) ;
- the spread of the sharing economy;
- significant role of the contribution of individual participants.

Practical implementation of the digital economy

In many countries, special, close attention is paid to the process of transition to a digital information society. This is confirmed by the adopted state strategies and programs for the development of the digital economy. For example, in Denmark such a strategy was adopted in 2000, in Singapore - in 2005, in Australia, Hong Kong, Great Britain, New Zealand - in 2008, in the EU countries - in 2009, in Canada - in 2010, in Malaysia - 2012, in South Korea - in 2013, in India and Kazakhstan - in 2015, in the Russian Federation - in 2017.

Statistics show that ten years ago, 18% of the world's population had access to the global Internet. In 2020, during the pandemic of the spread of the new coronavirus infection and the introduction of lockdowns, about 3 billion people (43% of the world's population) were connected to the Network for interaction [5].

The most developed in terms of the use of information technology is the city-state of Singapore, where digitalization of all sectors and spheres of public life has been implemented, the entire list of public services has been transferred to electronic format, thus, the Smart Nation concept is being fully implemented (after the successful implementation of the Smart City and Smart Region concepts).

Conclusion. Summarizing the results of the conducted scientific research, it can be concluded that the digital economy is a new type of economic relations in all sectors of the rapidly developing world market, using high information technologies. The creation and improvement of new technologies are associated with the general information and technological flows of updates. According to experts, the implementation of the principles of the digital economy increases the development potential of the information society. The use of the global Internet significantly accelerates the formation of digital markets for goods, services and labor, and also improves the quality of public sector services [11] (Pankratov , Svertilova , Lide , 2018) .

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