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# LEVEL OF DIGITALIZATION OF THE ECONOMY IN RUSSIA AND THE EUROPEAN UNION

***Abstract.*** *Currently, the process of digitalization covers all branches of human activity. The essence of this process takes place within the framework of the developing the fourth industrial revolution, when a computer and information and communication technologies are introduced into various sectors of activity. The paper discusses the concept of "digital economy" and the level of digitalization in Russia and the European Union. The comparison of the levels of digitalization demonstrates how successful this process is in these countries.*

***Keywords:*** *Digital economy, cyberphysical systems, the Fourth industrial revolution, neoindustrialization, the level of digitalization.*

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# УРОВЕНЬ ЦИФРОВИЗАЦИИ ЭКОНОМИКИ В РОССИИ И ЕВРОПЕЙСКОМ СОЮЗЕ

***Аннотация.*** *В настоящее время процесс цифровизации охватывает все отрасли человеческой деятельности. Сущность этого процесса происходит в рамках разворачивающейся Четвертой промышленной революции, в процессе которой происходит внедрение компьютерных и информационно-коммуникационных технологий в различные секторы деятельности. В статье рассматривается понятие «цифровая экономика» и уровень цифровизации в России и Европейском союзе. Сравнение уровней цифровизации более точно показывает, насколько успешно проходит этот процесс в данных странах.*

***Ключевые слова:*** *Цифровая экономика, киберфизические системы, Четвертая промышленная революция, неоиндустриализация, уровень цифровизации.*

The digital economy is an economic activity based on digital technologies and related to e-business and e-Commerce. Payments for goods and services are made in digital currency via digital devices. The digital economy reflects the transition from the third industrial revolution to the fourth industrial revolution. The third industrial revolution, sometimes referred to as the digital revolution, refers to the changes that occurred at the end of the 20th century with the transition from analog electronic and mechanical devices to digital technologies. The fourth industrial revolution is based on the digital revolution [1]. The purpose of the study is to compare the level of digitalization of the economy in Russia and the EU countries.

The countries of the European Union have made a significant progress in the field of digital economy. The Russian economy as a whole is still far behind in terms of digitalization of the developed countries of the world. According to McKinsey consulting company, the share of the digital economy in Russia barely reaches 4%, while in the USA - 11%, China - 10%, EU countries - 8%, Czech Republic, Brazil - 6%, India – 5,5% (Figure 1) [3].

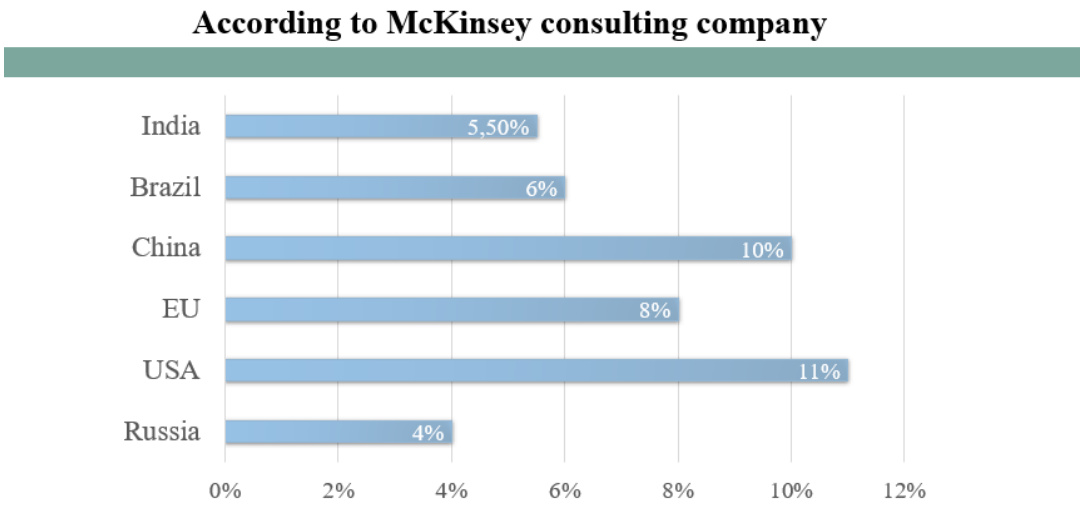
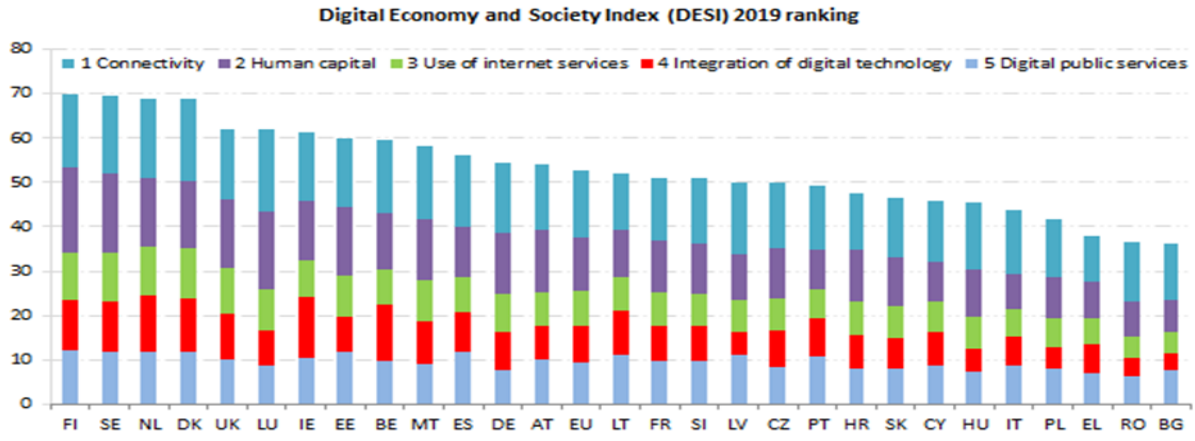



Figure 1 - The assessment of The McKinsey consulting company

The EU has improved its DESI index (digital economy and society Index) in all categories over the past year, the greatest progress has been made in the communications category (from 0.51 to 0.55). This is mainly due to the expansion of mobile coverage (from 58 to 67 users per 100 people) and the increase in high-speed coverage (the share of high-speed Internet increased from 18 to 22% of all Internet coverage). The level of basic digital knowledge of citizens has also increased (from 55% to 59% of the EU population) [**Ошибка! Источник ссылки не найден.**], but there are still many tasks ahead to provide the population with the necessary skills in order to use the digital economy more effectively.

The index shows that both the European Union as a whole and its individual member countries are progressing towards a digital economy and society [Picture 1].




Picture 1 – Digital economy and society index (DESI) 2019

The integration of cyber-physical systems, in turn, has influenced the development of digitalization. It should be noted a steady increase in the index of cyber physical digitalization. This fact confirms the hypothesis of the transition to the fourth industrial revolution, the digitalization of manufacturing industries. Data on the most industrialized countries of Western Europe look much more convincing. It follows that developed countries are moving towards neo-industrial development, the main content of which is cyber-physical digitalization. This fact confirms the hypothesis of the transition to the Fourth Industrial Revolution, the digitalization of manufacturing industries. Data on the most industrialized countries of Western Europe look much more convincing. For example, the share of German manufacturing enterprises using RFID increased in 2009 – 2017 from 4,98 to 26,37%, that is, more than five times. The same indicator for the UK – 2,14 and 11,85%; France – 2,25 and 14,14%. [3].

According to a number of formal signs Russia demonstrates a high level of digitalization. The level of Internet penetration among the population and business is quite high. In 2017, 76% of households and 89% of organizations had access to the Internet. Russia is also successfully developing public online services. In 2018 Russia ranks 25th (out of 193) in the UN ranking of development of public online services (37th in 2016) [2]. At the same time, large-scale digital projects are implemented in the country: the introduction of online cash registers in the retail sector, the launch of the system for collecting payments from freight transport «Platon», the equipment of vehicles with the emergency response system «ERA-GLONASS», etc.

At the same time, Russia is significantly inferior to developed countries in terms of the development of the digital sector – the core of the digital economy, which includes the information and communication technologies (ICT) sector and the content and media sector. There is rather low level of use of digital technologies by the population in key aspects of socio-economic life (shopping, financial transactions, job search, education) in Russia. The integration of digital technologies by Russian businesses is also at a relatively low level. Thus, the share of Russians using the Internet for shopping, financial transactions, job search and distance learning is 2 times less than in the EU countries. The share of Russians who use the Internet to search for goods

and services is 1.5 times lower, and the share of those who download software is 3 times lower [2].

The data presented above show that Russia has not yet made a full transition to Industry 4.0, since the introduction of digital technologies is not fully developed not only in the digital economy, but also in other areas of activity. The main reasons for Russia's lagging behind the world leaders in the digital economy are the unfavorable environment for business development, the transfer of innovations to production, and the lack of development of digital technologies.

We have considered the concepts of «digital economy» in the EU and Russia and can conclude that these countries have a common goal in the economic sphere, but the level of development of digitalization differs significantly. Currently, the EU countries are undergoing a neo-industrial transition with the introduction of cyber-physical systems, while Russia is still undergoing the process of Industrialization 4.0.

## REFERENCES


1. Babkin A. V., Burkaltseva D. D., Kosten D. G., Vorobiev Yu. N. Formation of the digital. 2017, 3 9-25.

2. Institute of growth Economics. Stolypina P. A. Russia: from digitalization to the digital economy. – 2018. Text: electronic. – https://stolypin.institute/wp-content/uploads/2018/09/issledovanie_tsifrovaya-ekonomika-14-09-18-1.pdf

3. Tolkachev S.A., Bykov A.A., Morkovkin D.E., Borisov O.I., Gavrilin A.V. Digitalization of manufacturing in Russia, Belarus and the European Union. - 2020, 2-8. – Text: electronic. – URL: https://www.researchgate.net/publication/338433805_Digitalization_of_manufacturing_in_Russia_Belarus_and_the_European_Union

4. Tolkachev S.A., Romanova Yu.A., Morkovkin D.E. Analysis of international experience in the development of the digital economy and the formation of proposals for its adaptation in the industry of Russia. Scientific works of the Free Economic Society of Russia. 2018, 211 3 229-45.