

Problems of Innovative Development in the Conditions of Digitalizing the Russian Economy

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Abstract. The modern economy is at the third stage of its development – the digital economy has replaced the agrarian and industrial economy. The main characteristic of this stage is the significant growth of the IT sector, increasing the number of people employed in it, as well as using the advanced technologies in all spheres of human activity and industries. For enterprises, digitalization is becoming one of the ways to reduce costs and improve the efficiency of used resources. The article reveals the problems of transiting the country's economy to a new stage of development, shows the place of the Russian Federation in the ratings, assessing the level of digitalization, as well as the use of new technologies. The authors present the main advantages and disadvantages of using artificial intelligence in the organization work. The article reveals the existing problems of innovative development, shows that the Russian Federation is inferior to the leading countries of the world in a number of innovative development indicators (the Knowledge Economy Index, the value of high-tech exports, the number of patents). The authors marks some paradoxical relationship – increasing the number of enterprises using innovations leads to decreasing the output of products, works or services, as well as to reducing the output of innovative products. The authors show that this fact is caused by problems with transferring new technologies in the country.

1. Introduction

There is no doubt that improving the efficiency of the country's economy is directly related to its digitalization. The Russian Federation is not an exception, the transition to a digital economy is a state priority.

Innovative activity of enterprises, the use of innovations in the process of their activities allows enterprises to achieve advantages over the competitors, to manufacture better products at a lower level of costs. At the country's level, this will allow transiting to a new type of development, ensuring a sustainable economic growth [16-20].

We will name the main advantages arising for enterprises as a result of using digital technologies:

- 1) increasing the volume of performed services, manufactured products;
- 2) reducing the time for repetitive operations;
- 3) reducing production costs;
- 4) increasing the product quality;
- 5) carrying out a consumer analysis based on the data from social networks and the “digital follow-up”;
- 6) using the computer technology for implementing risk management systems and preventing risk situations [3, 6, 10].

However, the process of digitalization is accompanied by some negative consequences, among which the following should be mentioned:

- 1) increasing the number of cybercrimes;
- 2) replacing people with computers and robots, rising the level of unemployment;
- 3) the impact of the virtual world on the people’s psyche, especially children’s psyche [7,8, 21].

Thus, the digital economy and using achievements and innovations allows enterprises to be more competitive, and the country’s economy to develop at a faster pace.

2. Developing a Digital Economy: A Comparative Country Analysis

At present, in terms of ICT development (ICT Development Index), Russia is in the 45th place out of 176 countries surveyed. In this case, by the largest index of e-government development (E-Government Development Index) Russia is in the 35th place, and by the largest global cybersecurity index (Global Cybersecurity Index) Russia is in the 10th place.

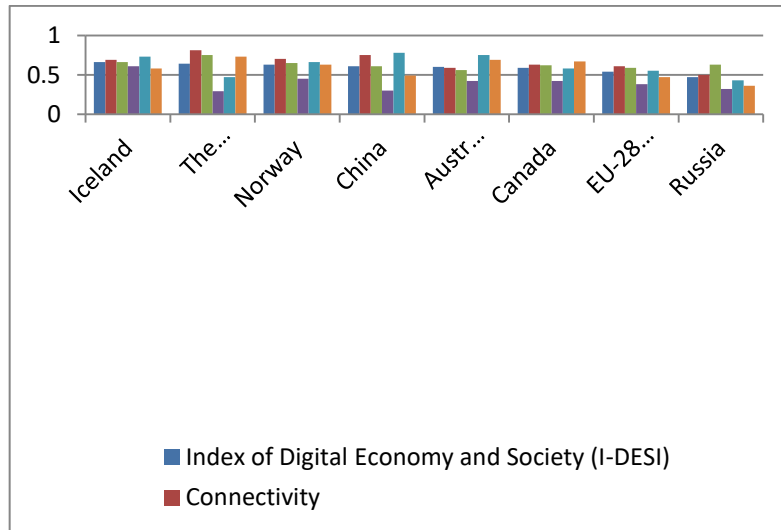


Figure 1. “The Index of the Digital Economy” and its subindices for other countries.

Figure 1 presents data for a number of key countries, including Russia: it is clearly seen that, in general, by the value of the Digital Economy and Society Index (I-DESI) indicator, the Russian Federation lags far behind the leading countries; by the indicator “Human Capital” Russia is at their level; and the values of the indicators “Use of the Internet” and “Digital Public Services” are almost 2 times as low as those for the countries with highly developed digital economies.

Table 1. Indicators characterizing the development of the digital economy in Russia.

Index	Indicator value	Place of the RF
“Global Innovation Index”	38,8	45
“Human capital and research”	50	23
“Infrastructure”	47,5	62
“Business Sustainability”	40,3	33
“Developing creative activity”	31	62
“Global Competitiveness Index”	4,64	38
“Infrastructure”	4,93	35
“Higher education and training”	5,12	32
“Technological readiness of the country”	4,55	57

The value of the International Digital Economy and Society Index (I-DESI) in Russia is 0.47 with the maximum possible value of 0.66 and the average value of this indicator across the EU countries is 0.54. Here are the values and other indicators characterizing the development of the digital economy in the Russian Federation (Table 1).

Thus, the lag of the Russian Federation from the leading countries is clearly visible. On the other hand, if we analyze the information presented on the website of the Federal Statistics Service, it turns out that from 2003 to 2017, organizations used digital technologies very actively in their own activities. So, in 2017 92.1% of organizations used personal computers in their activities; 61.1% used local computer networks; 88.3 used email; 89.7% used global information networks; besides, almost every year the value of the indicators increased.

Consequently, it can be concluded that the indicators used by the Federal Statistics Service and the World Bank are not comparable with each other.

3. Innovative development in the Russian Federation: some problems

Despite the fact that innovative development has been chosen as a priority vector of movement for quite a long time, in terms of the Yingdex Knowledge Economy index, calculated by the World Bank, the Russian Federation is in the 53^d place out of 145 countries surveyed.

The authors analyzed some indicators characterizing innovative activity in some of the world countries: the number of scientific and technical articles, residents' applications for patents. The findings were the following: firstly, the Russian Federation lags far behind the leading world powers in terms of the value of these indicators. Secondly, the volume of GDP (in 2010 prices) and the number of patent applications in the whole world demonstrate a pronounced directly proportional linear relationship, as well as increasing the number of scientific articles is accompanied by increasing GDP.

In turn, for the Russian Federation there is no dependence between the specified pairs of indicators. This fact can be explained by the low level of demand for patents among Russian enterprises, the lack of connection between scientific research and a real economic activity.

Also, between some indicators, a stable feedback is generally traced (Fig. 2).

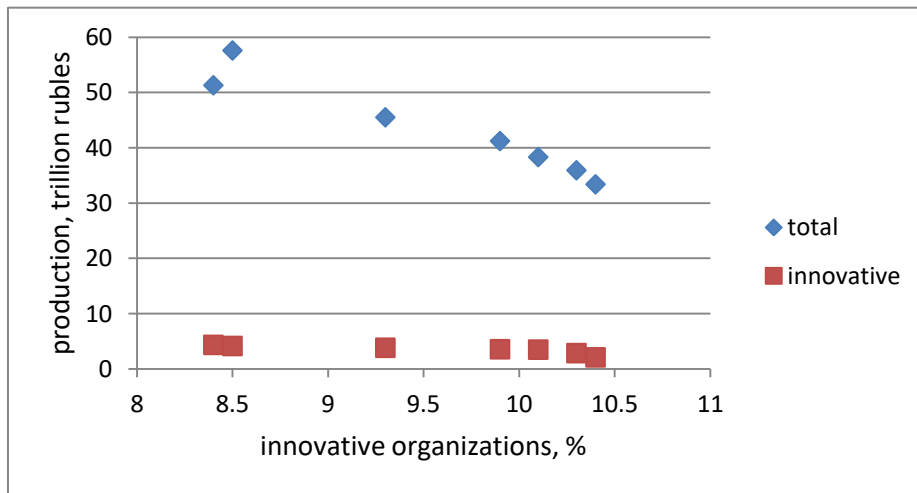


Figure 2. Dynamics of indicators reflecting Russia’s innovative development.

Thus, in the Russian Federation, declining the share of innovative enterprises leads to increasing the total shipment of innovative products, innovative work performed, innovative services rendered, and the total volumes of goods, works, and services. This dependence can be explained, for example, by the combination or integration of enterprises that implement innovations.

4. Conclusion

The authors formulate the following relevant conclusions.

First, despite the growth of indicators that characterize the level of digitalization in the Russian Federation, our country does not even belong to the 30 leading countries of the digital economy worldwide.

Secondly, for a number of indices characterizing the level of the innovative economy development, it can be established that the Russian Federation does not only show a steady growth, but, on the contrary, reduces the values of indicators. Thus, the share of innovative products in the global volume of output, the proportion of organizations that carry out technological, organizational, marketing innovations is annually reduced.

Thirdly, despite the fact that there is a direct correlation between the indicators “the number of scientific and technical articles”, “the number of applications for patent registration” and “GDP value” both on a global scale and in a number of the developed countries, such a correlation wasn’t observed in the Russian Federation.

Fourthly, there is an inverse relationship between the volume of innovative products, the volume of output and the shares of enterprises implementing innovations, which indicates problems in the method of classifying products as innovative, as well as the possible integration of enterprises implementing innovations.

Thus, as a result of the analysis, problems of innovative development and digitalization of the country’s economy are revealed. To change this situation, it is necessary to bring the economy out of its current state, due, apparently, to reaching the potential of the used equipment and engineering. Increasing the level of the applied technology, technical innovations, the number of people employed in the production using new technologies, preventing the decrease in the number of traditional technologies will lead to some economic growth on a qualitatively new basis.

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