

DIGITALIZATION AS A COMPONENT OF THE WORLD ECONOMY

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ABSTRACT

Nowadays developed and developing countries start and continue to develop a theoretical and legislative base of economic digitalization, increasing practical experience of introducing new technologies in the economical processes of at the same time. The article investigates the emerging technologies value in the economy and the economic growth of some selected countries. Authors summarise reports and researches of international organizations and scientific schools that explore such issues as smart technologies, informatization, digitalization, and so on. Taking into account the new technologies implementation features in the production processes of the selected countries provides the scientific novelty of the paper. Authors describe the features of digitalization in different countries and group them according to the trends of the phenomenon. Economic, statistical and mathematical methods are used in the paper. In conclusion, the authors combine solutions from different countries to make recommendations for the exchange of experience.

Keywords: digital economy, digitalization, information society, emerging technologies, international comparisons.

INTRODUCTION

In recent years digital technologies became an effective tool in the economic relations arising in the course of production, distribution, exchange and consumption of the benefits between economic subjects. In July 2017 in Russia the state program "Digital Economy of the Russian Federation" in which the complex of tasks which solution has to promote the realization of strategic national priorities of the Russian Federation is established has been adopted. [1], [7]

The widespread introduction of these technologies in the economic activity of society stimulates profound infrastructure changes in scales of all global economic space. By data for 2016, the specific weight of the sector of information and communication technologies (further – ICT) in Russia was 2,8%. In 2017 specific weight occupied in the sector of ICT in the total number of the busy population was 1,7%. [2]

The sector of ICT not only stimulates the process of informatization of society in many developed countries but also is the most dynamic segment of the national economy and has a significant effect on rates of economic growth. Now the majority of the countries seek for formation of an information society, and the most priority directions of development are a creation of the electronic government, introduction of information technologies in education, culture and health care.

WORLD TRENDS OF DEVELOPMENT OF DIGITAL TECHNOLOGIES

Tendencies of global world development of digital technologies are crucial for an increase in competitiveness of the economy, expansion of opportunities of her integration into the world system of economy, safety in society, stimulations of innovations and creation of new jobs. The level of development of the sphere of information and communication defines her place in world economic, political and social spaces. Due to the above, one of the important questions creation of rating of the countries on the level of development of ICT in the world information community and in a way of his measurement as which the index of development of ICT (IDI) acts is.

The index of development (IDI) allows to carry out classification of the countries with the use of the indicators relating to infrastructure, use of ICT, and skills of work with ICT. The purpose of carrying out the real research is objective international assessment of efficiency of a branch of ICT on the basis of quantitative and control indices which will serve as the major contribution to the discussion of policy in the field of ICT in Member states of the International Telecommunication Union (further – MSE). [3]

According to data of the International Telecommunication Union for the last year IDI values have grown in all countries of the considered selection, but differences in prevalence and use of ICT remain. The growth of values of the ICT index demonstrates the continuing expansion of access to ICT and their increasing use, these results also pay attention that the present levels of development of ICT in the world very strongly differ, and IDI values vary from 0,96 (Central African Republic) to 8,98 (Iceland). Following the results of 2017 Iceland is in the lead in ICT rating with the highest value of the integrated index (8,96 points), having pressed a long time winning first place Republic of Korea (8,85 points) (fig. 1).

Other countries entering the top ten on IDI are mainly in Europe (Switzerland, Denmark, the United Kingdom, Norway, the Netherlands, Finland, and Luxembourg) and also in the Pacific Rim (Hong Kong - China). So, Great Britain, takes the fifth position with a value of rating 8,65 (a gain for 8,1% in comparison with the level of 2013), Japan, is in 10th place - 8,43 points (an index gain in a year for 1,3%), Australia (8,24 points) and the USA (8,18 points) share the 14th and 15th place according to a gain for 4,3% and 8,6% of the level of 2013 Finland takes the 22nd place in rating with the index 7,88 points. It should be noted that in dynamics of the developed countries saturation process is observed by

information technologies owing to what the rate of a gain of the integrated index has the fading character. The smallest gain of the ICT integrated index among the considered set of the countries characterizes Germany and Korea – less than 1%. [4], [5], [6] Distinctive features of the countries - leaders in IDI are high levels of income, the competitive markets and the qualified population.

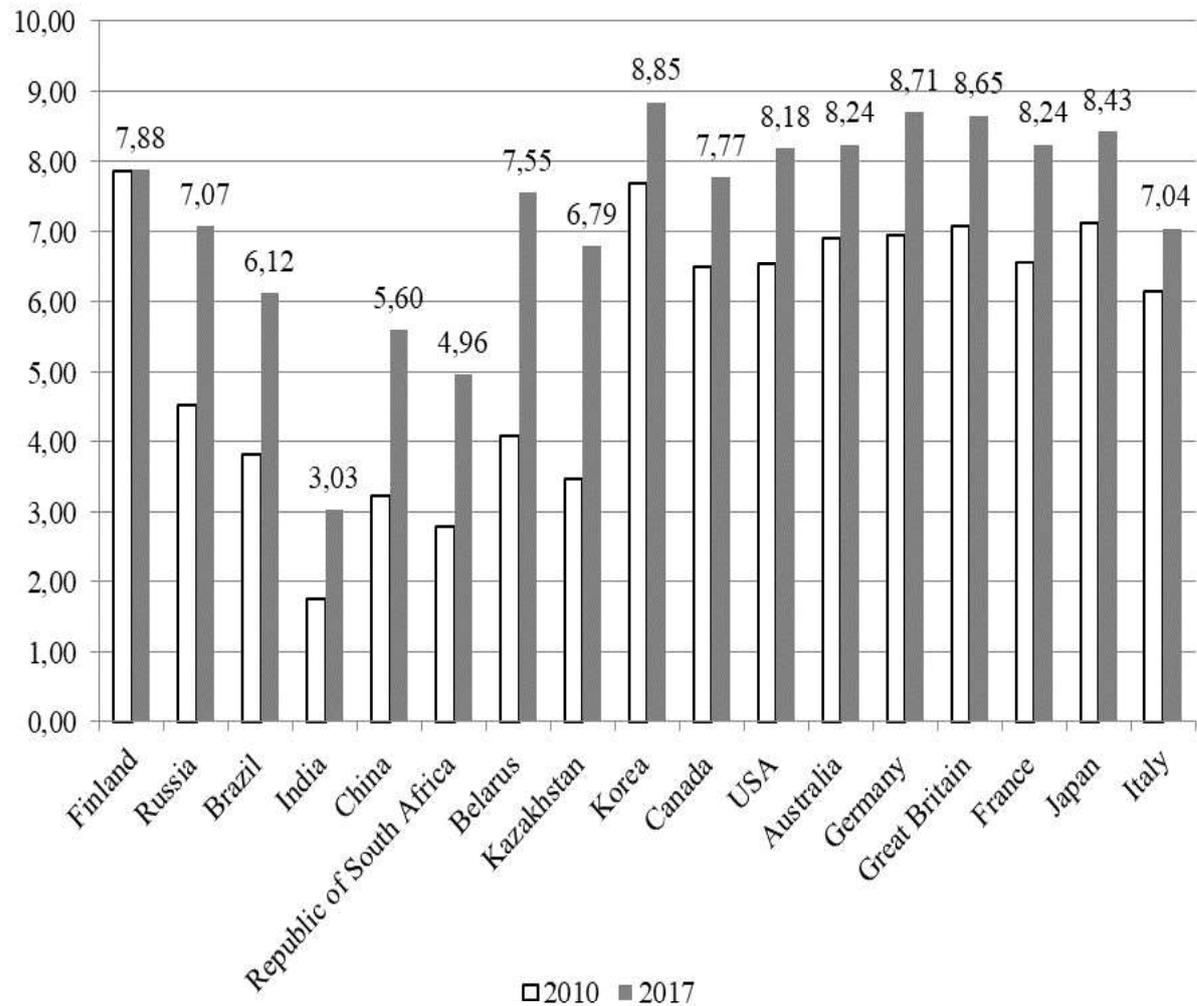


Figure 1 Dynamics of the index of development of ICT (IDI) in 2010 and 2017 in some countries of the world

In the countries with the highest achievements according to the index of development of ICT the governments recognize ICT as the serious engine of growth, innovations and economic development. For stimulation of information economy, they have planned a number of the large purposes in the ICT area, including ensuring superfast Internet access for the most part (and sometimes and for everything) the population, assistance to the development of wireless broadband access (including LTE) and introduction of ICT in houses. For example, in the Digital agenda accepted by the Evraziisky economic union (further – EAEU), providing general broadband access can provide a gain of gross domestic product (further – GDP) to EAEU till 2025 for 1,7%, and economy level due to elimination of legal barriers can potentially reach 2,6% of GDP. It is expected that the introduction of Digital agenda of EAEU will accelerate

penetration of mobile communications closer to saturation levels due to regional harmonization of regulation, falling of the prices and growth of the competition. The influence of these processes on GDP of EAEU can provide a gain to 0,76% till 2025. According to European Parliament, such innovations as cloud services and analytics of data will be able to add 200 billion euros to GDP of Europe by 2030 due to an increase in efficiency of branch processes. [8]

The return tendency is observed in the economy of developing countries. From the considered set of the states India – 14,3% of a gain in 2017 in comparison with 2016 (IDI has made 3,03), the Republic of South Africa – several more than 1% of a gain differs in the highest rates of development (IDI has made 4,96). Russia in 2017 has fallen by 45th place from 176 considered countries with value of the index 7,07 (in 2016 Russia took the 43rd place with value of the index 6,91 at a value of the leading country 8,80 points). Average annual rate of a gain of the integrated index in Russia from 2010 for 2017 was 6,5% (fig. 2). It should be noted that the value of the integrated index of development of ICT for Russia in 2017 is 6% lower, than for the developed countries (7,52 points) and 60% above, than for developing (4,26 points). The Russian dynamics of the development of ICT have allowed reducing a rupture of values of the IDI index across Russia and the leading country of (Iceland) (fig. 2). [4], [5]

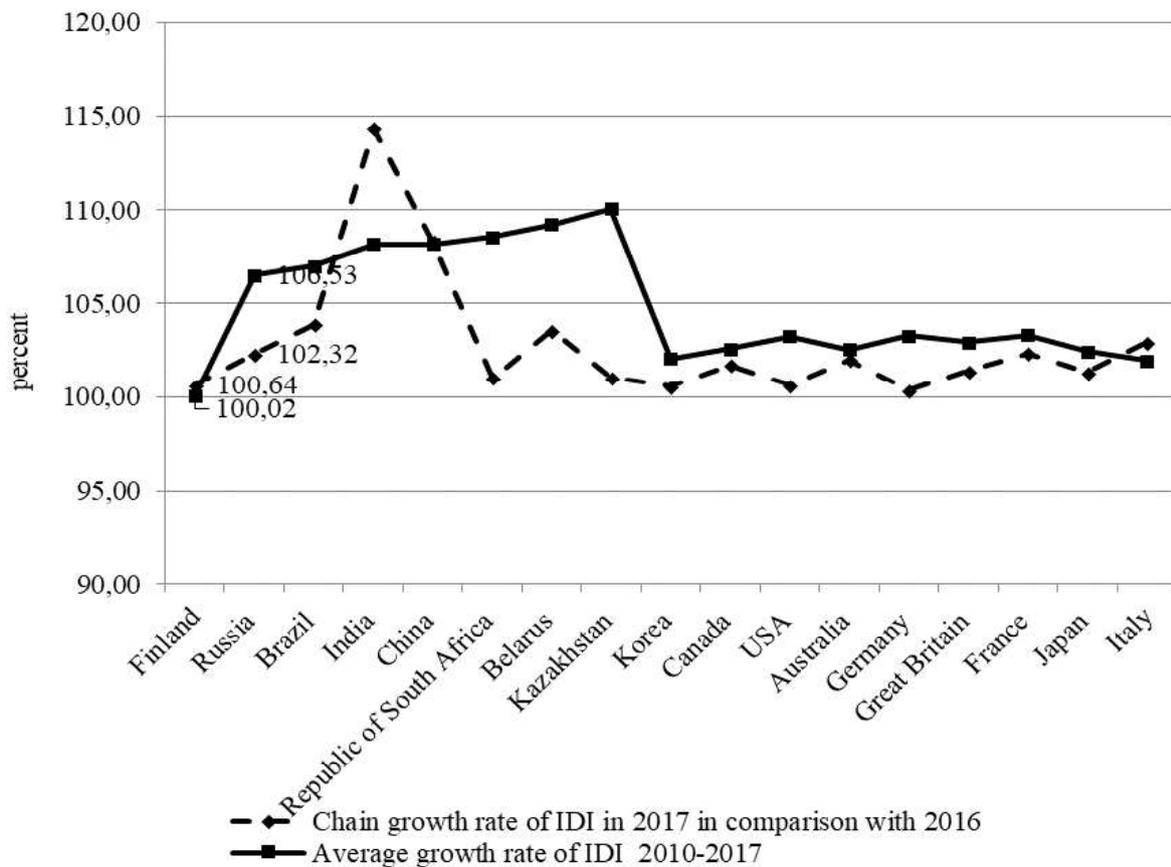


Figure 2 Dynamics of chain and average growth rates of the index of development of ICT (IDI) in 2010-2017 in some countries of the world

The analysis of average rate of a gain of the integrated index of development of ICT from 2010 for 2017 shows rather high rates of development of Russia. At the same time such developing countries of the studied selection as Kazakhstan, Belarus and the Republic of South Africa are characterized by the highest annual average rates of a gain which are 10,1%, 9,2% and 8,57% respectively. Comparison of IDI values for the period between 2016-2017 shows that the largest rates of a gain of IDI value are characteristic of such countries from the studied selection as India (14,3%), Belarus (3,57%), China (8,3%) and Brazil (3,9%) significantly exceeding chain rate of a gain of Russia which is 2,3%. At the same time, chain gains of other countries in this sample it is less, than across Russia. For example, in Finland, the USA, the Republic of Korea, Germany the IDI index for the last year has increased less, than by 1%. While Russia begins to reach saturation level, in particular as for contracts for mobile cellular communication and access of the Internet, households of India, Belarus, China and Brazil where levels of penetration remain much lower, still have the huge potential for growth. Drawing a parallel at rates of development of ICT in developed both the developing countries and the place of Russia we will note that the rate of a gain of development of IDI in Russia in 2017 in comparison with 2016 was slightly higher than the level of the developed countries (2,0%), but there was lower than the level of developing countries (4,9%) and in general on the world rate of a gain of IDI value – 4,9%. [4], [5]

In spite of the fact that in one year the majority of the countries don't move sharply up in the rating of IDI (and some countries fall in rating, for example, Russia), there were some considerable and remarkable changes. Developing countries on the level of development of ICT are given in table 1 most dynamically, that is those which have moved up to the greatest number of steps in the general IDI index. [3]

Table 1 Most dynamically developing countries in IDI rankings, 2016-2017

Country	IDI rank 2017	IDI rank change
Uzbekistan	118	8
Afghanistan	81	6
Croatia	114	6
Suriname	139	6
Uganda	28	6
Uruguay	111	6
Lao P.D.R.	112	5
Latvia	122	5
Myanmar	67	5
Namibia	80	5
Timor-Leste	135	5
Turkey	95	5

Apparently from table 1, the most dynamic jump shows Uzbekistan, having risen to 8 places up and having taken the 118th place in rating. Follows him, Afghanistan, Croatia, Suriname, Uganda and Uruguay, having improved the

positions on 6 places. Thus, the carried-out analysis has shown that among 176 countries entering in members of the International Telecommunication Union are strongly differentiated on the level of development of digital technologies.

CONCLUSION

The direct impact of digital capital on growth rates of the gross domestic product significantly differs in developed and developing countries. However optimistic forecasts of the World Bank confirm the growth of this indicator in developing countries owing to a decrease in a digital divide in world economy. At the same time, it is specified in the Report of the World Bank that the qualitative characteristic of increase in the welfare of people due to the introduction of digital technologies isn't supported with quantitative measurement of the received economic benefits. Thus, the relevance and prospects of development of the statistical approaches, techniques and indicators characterizing the welfare of the person in an information society and the benefits acquired by him as a result of digital transformation are quite obvious. [9]

In recent years in Russia in the field of development of digital technologies, a number of the reforms directed to decrease in administrative barriers and creating favourable conditions for the development of information society, improvement of quality of services in the sphere of information and telecommunication technologies is realized. At the same time in the conditions of the fierce international competition in the sphere of ICT realization of further measures for improvement of regulation in the considered sphere is important that it will demand essential investments (both state, and private) in infrastructure, development of personnel potential and also in the creation of favourable investment climate for the development of the information and communication sphere. The major market factor which will provide growth of number of subscribers is the extensive growth of coverage of small settlements communication networks of average and large Internet – providers. In this regard, a revival of providers of satellite broadband access is possible. The growth of a share of package offers among new connections of telecom operators will become the main trend of the market of broadband access in Russia in the medium term.

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