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**DIGITALIZATION OF THE RUSSIAN ECONOMY: FIRST  
RESULTS**

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***Abstract***

This article represents the study of the Russian digital economy development. The growth of digital technologies is changing the existing economic system in all developed countries with traditional processes of production and consumption. The research is based on the analysis of a large number of scientific and statistical data concerning macro- and microeconomics for 2008-2017, government regulations and programs, official orders, local instructions, as well as research data of international organizations. During the study of the developed and approved state program "Digital economy of the Russian Federation", the authors analyzed all five directions of its development as of the first half of 2018. In particular, some positive trends, problems and recommendations for their solution, as well as some prospects for the formation of other industries and areas of economic activity, assessment of the impact of information society on them, were offered. Particular attention was given to the current difficult situation with "digital inequality" in the subjects of the Russian Federation, which can further inhibit the development of five areas of the digital economy of the whole country. Nowadays digital technologies create another reality for governments, people, enterprises, organizations, global markets and provide a new promising growth path for any country.

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**Keywords:** Digital economy, innovation, information infrastructure, research and development, security, priority projects and programs.

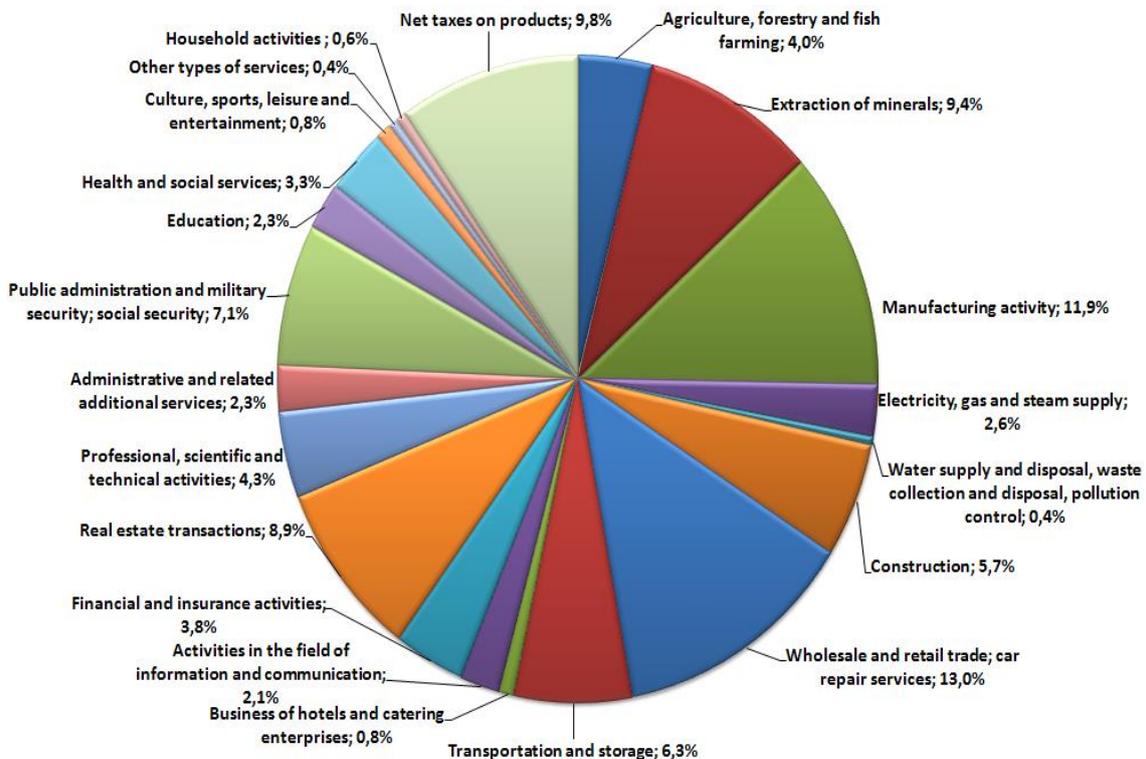


## 1. Introduction

Digital technologies in the Russian economy build a new model of today's reality, creating effective fundamental developments, allowing to reach a high level of application of knowledge in the field of science and technological progress. Innovations are based on digital technologies and business models that make the usage of information and communication technologies (ICT) effective. The Russian government has a strong reserve within state programs providing incentives for business to introduce its innovations in the economic and social spheres, which is one of the key factors of the country's development.

Modern digital society is in the fourth technological mode, characterized by the development of robotics and artificial intelligence, work with big data (BD), the spread of the Internet, which becomes the basis of economic development and intelligence of citizens. As a result, new values, priorities and services are formed that make people's lives rational, comfortable, and the country's economy powerful and modern.

The Russian economy, contrary to the stereotype of its raw material component only, has other "supports". As the sectoral structure of Russia's GDP for 2017 (figure 01) shows, the structure of the economy is dominated by wholesale and retail trade, repair of motor vehicles and motorcycles (13%), manufacturing (11.9%), net taxes on products (9.8%), mining (9.4%) and real estate operations (8.9%). The presented data shows that there is no critical dependence of the economy on the results of the use of natural resources.



**Figure 01.** Sectoral structure of Russia's GDP in 2017, according to Rosstat. Data from the Federal state statistics service (National accounts, 2018)

However, in order to bring the Russian economy to a new technological development cycle – to the level of digitalization and high technologies – it is necessary to ensure that the sectoral structure of GDP is also based on activities in the field of information (last year it was only 2.1% of GDP), education (2.3%), health and social services (3.3%) and professional, scientific and technical activities (4.3%).

The government needs to make efforts to maintain an enabling environment for companies' competition in the field of ICT and to add increasing value to the economy. The ICT sector will contribute to a significant flow of targeted investment, both domestic and foreign. In addition, the demand for computer-aided design and PLM-systems is growing every year, they need the construction industry, nuclear power, nuclear engineering and many others (Velitskaya & Golubeva, 2018).

## **2. Problem Statement**

According to the Organisation for economic co-operation and development (OECD), the most important trends in the digital economy are:

- mobility;
- cloud computing;
- social network;
- wireless sensor network;
- big data analysis.

These areas together are prerequisites for the creation of a single intellectual world space in which there are no barriers to business, there is a smooth exchange of knowledge and access to data, management of objects on remote access and reading data from them, as well as the availability of a variety of energy sources and their use. As a powerful impetus for the development of all sectors of the economy, these areas of the digital economy expand the rights and opportunities of enterprises, consumers and society as a whole.

However, the sustainability of Russia's digital economy, like any other country, increasingly depends on its adaptation to new global needs and the creation of innovative capacity to meet such needs. In addition, the spread and success of the digital economy throughout Russia can help to empower society through its solutions and positively affect the level of economic growth and well-being of its population.

In July 2017, the government of the Russian Federation developed and approved the program "Digital economy of the Russian Federation", which was made to update all economic activities of the country and create the necessary conditions for the country's transition to the digital economy. Coordination of experts and business communities participation in the planning, development and evaluation of the effectiveness of the program is carried out by Autonomous noncommercial organization "Digital economy", created by successful Russian high-tech companies. The main factor in this activity is the work with data in digital format. It is important, because the digital economy cannot be considered without production potential, it is necessary to position their development in close cooperation.

According to this program, the development of the digital economy model is provided in five areas: "Information infrastructure", "Information security", "Regulatory", "Formation of research competencies and technological reserves" and "Personnel and education" (Program "Digital economy of

the Russian Federation”, 2018). Let us consider in more detail the development degree of each of these areas.

### **3. Research Questions**

Given the degree of novelty of the theme of the economy digitalization and the lack of sufficient research materials on this topic, the questions for this study are:

- What is the level of development of the Russian economy digitalization according to the five areas provided by the state program?
- Which problems can be identified in the implementation of this program and what solutions can be proposed?

### **4. Purpose of the Study**

The objectives of this study are:

- to analyze five areas of development of the Russian economy digitalization as of the first half of 2018.
- to examine, based on a large number of scientific and statistical data for 2008-2017, government regulations and programs, official orders, local instructions, research data of international organizations, positive trends, problems and to propose some recommendations for their solution.

### **5. Research Methods**

#### **5.1. Information infrastructure**

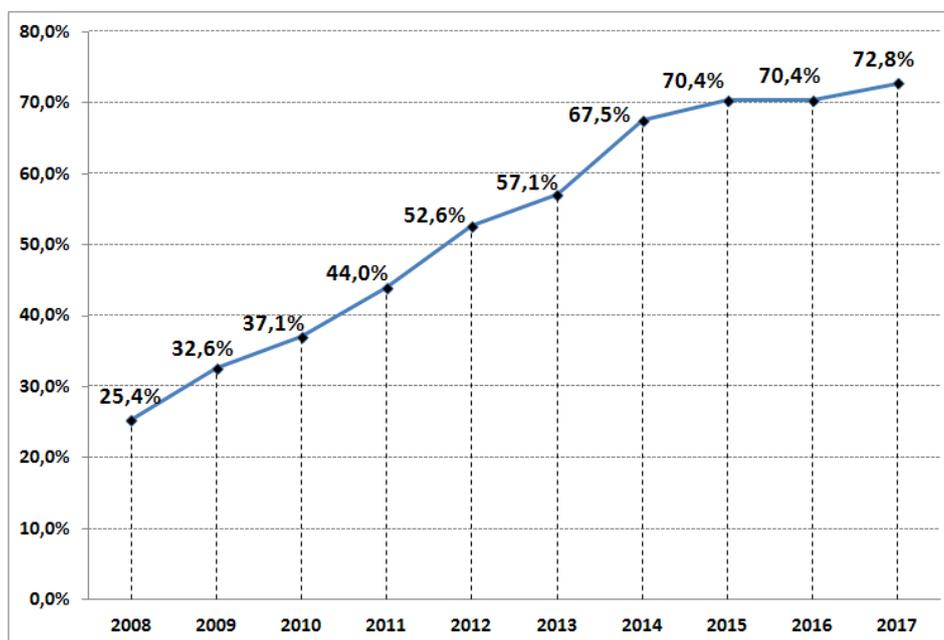
The Russian model of the digital economy is based on computer technologies, which provide online services, Internet trading, industrial Internet, electronic banking and other fees, crowdcasting etc. Digital technologies are needed to be implemented and used in atomic and aerospace industries, medicine, education, public administration, i.e. in all fields of economic activities.

As an example of the initiative to introduce digital technologies in everyday life of Russians, we can cite the program of electronic system in health care using ICT. Today's society is aware of the important role played by ICTs in helping to reduce existing health inequalities. The Ministry of communications is working with the Ministry of health to build the capacity of both medical and administrative personnel, to establish well-developed networks to improve communication, data collection and transmission, and to automate procedures. Another example is the creation of e-government portals that seek to provide basic activities and benefits to citizens through automated services. This helps to connect organizations with consumers and allows them to evaluate the services provided.

The ubiquity of the Internet is the main gateway to the digital economy in Russia, which stands for the creation of a powerful Eurasian digital content industry, understanding its importance for the development of the economy of the country and the region, noting the special importance of preserving the Russian identity and heritage. Thus, it tries to provide each segment of society with easy access to

digital information in order to build an information society through the digitization and marketing of Russian content for its promotion at the world level. In the programs developed by the Government, along with other important issues, is the creation of broadband Internet coverage throughout the territory of the Russian Federation with the active placement of 5G networks.

The degree of ICT infrastructure development has a direct impact on the number of Internet users in any country. The Russian branch of the research concern GfK (Gesellschaft für Konsumforschung) Group, in January 2018 published the report "Internet Penetration in Russia: results of 2017" (Internet penetration in Russia, 2018). According to the study, in 2017, compared to the previous year, the level of Internet penetration in Russia increased from 70.4% to 72.8% among the population of 16+ and amounted to 87 million users (figure 02), and the mobile Internet audience grew by 16%: from 47% of the population to 56%, respectively.



**Figure 02.** Internet penetration in Russia (among the population of 16+)

According to the website Internetworldstats.com as of the end of 2017, Russia ranks seventh in the total number of Internet users (table 1). In our opinion, this indicator is not very informative, as the number of Internet users depends on the population. Therefore, it would be more logical to analyze the share of Internet users from the total population of the country. According to this indicator, Russia has a value of 76.1% and is also in 7th place. Before it in this list there is Thailand-82,4%, and above it there are 6 countries with values of this indicator over 90%. There is a problem of lagging behind, the solution to this problem is time-consuming, complex, directly related to the creation of information infrastructure throughout Russia.

**Table 01.** Top 20 countries with the largest number of Internet users\*

<b>№</b>	<b>Country or region</b>	<b>Population in 2018</b>	<b>Number of Internet users as of 31.12.2017</b>	<b>Share of Internet users in the total population of the country</b>
1	China	1 415 045 928	772 000 000	54.6
2	India	1 354 051 854	462 124 989	34.1
3	USA	326 766 748	312 322 257	95.6 (2 <sup>nd</sup> place)
4	Brazil	210 867 954	149 057 635	70.7
5	Indonesia	266 794 980	132 700 000	49.7
6	Japan	127 185 332	118 626 672	93.3 (3 <sup>rd</sup> place)
<b>7</b>	<b>Russia</b>	143 964 709	<b>109 552 842</b>	<b>76.1 (7<sup>th</sup> place)</b>
8	Nigeria	195 875 237	98 391 456	50.2
9	Mexico	130 759 074	85 000 000	65.0
10	Bangladesh	166 368 149	80 483 000	48.4
11	Germany	82 293 457	79 127 551	96.2 (1 <sup>st</sup> place)
12	Philippines	106 512 074	69 000 000	64.8
13	Vietnam	96 491 146	64 000 000	66.3
14	Britain	66 573 504	62 091 419	93.3 (3 <sup>rd</sup> place)
15	France	65 233 271	60 421 689	92.6 (4 <sup>th</sup> place)
16	Thailand	69 183 173	57 000 000	82.4 (6 <sup>th</sup> place)
17	Iran	82 011 735	56 700 000	69.1
18	Turkey	81 916 871	56 000 000	68.4
19	Italy	59 290 969	54 798 299	92.4 (5 <sup>th</sup> place)
20	Egypt	99 375 741	48 211 493	48.5
Total:		5 146 561 906	2 927 609 302	56.9

\*Note: Source: Internet World Stats - <https://www.internetworldstats.com/top20.htm>

The number of mobile phone users is another important new indicator reflecting the opportunities for young people to use ICT. The percentage of people who own mobile phones is growing every year. According to MVideo and Eldorado, the smartphone market in the first quarter of 2018 amounted to 95 billion rubles and 6.3 million devices, that is 23% and 2% higher than a year earlier, respectively. At the same time, 4G smartphones are rapidly replacing previous generations of Internet access. According to the results of the first quarter of 2018, the share of 4G in piece sales of smartphones is at 87% (Smartphones (the market of Russia), 2018).

From the research report published in late January 2018 by the analytical company GfK, dedicated to the study of the Russian smartphone market, it follows that in 2017 Russia demonstrated the highest growth rates of mobile phone sales compared to other major world regions. The second place in dynamics was taken by Central and Eastern Europe, in which sales rose by 26%, largely due to the Russian market (Internet penetration in Russia, 2018).

Positive trends in the Russian market of services in the field of data storage and business analysis systems (Business Intelligence-BI) should be noted as a separate aspect of informatization (Mazhorova, 2018). Ubiquitous digitalization of business has become a key factor in the growth of the market of business intelligence and BD, as almost all of its processes are reduced to work with data.

## 5.2. Information security and normative regulation

In today's digital world, cybercrime is a key threat to global economic growth. Improving the culture of citizens' online behaviour, as well as the dissemination of clear global rules against cybercrime, can help to combat such crimes. According to the Ministry of communications and mass media of the Russian Federation, in the 2017 ranking of the International telecommunication Union (ITU) on the cybersecurity index, Russia took tenth place, one point ahead of such technologically developed countries as Japan and Norway. The report "Global index on cybersecurity" (GIC) has been published on the ITU website. Russia is also ahead of a number of other major global ICT leaders (National standards on big data and cybersecurity may appear in Russia in 2020, 2017). So, according to the rankings, the UK was ranked 12th, South Korea — 13th, Finland — 16th, Germany — 24th, Italy — the 31<sup>st</sup>. In Total, the study involved 193 countries.

Russia, like some other countries, actively engaged in the development of national standards in areas such as information security, BD, the Internet of things (IoT), Smart Manufacturing, Smart Cities and Artificial Intelligence that can be developed in 2019 and approved in 2020.

It is also assumed that by 2019, the Russian legislation may have unique requirements for the visualization of electronic signatures in electronic documents - the Ministry of communications with the participation of the Bank of Russia, the Ministry of economic development, as well as Rosfinmonitoring is already preparing the relevant draft law. The bill will contain a definition of a "cloud" electronic signature.

In the near future, Russia will develop:

- legislation on smart contracts containing their standard forms;
- legally defined terms such as "distributed Ledger technology"(blockchain), "cryptocurrency", "token" and "mining";
- legally fixed right of insurance agents and insurance brokers to conclude insurance contracts in electronic form;
- the concept of "biometric personal data" is legally fixed;
- legislative possibility for Telecom operators to enter into contracts for the provision of communication services remotely.

In addition, the legislation of the Russian Federation is planned to be amended in order to create conditions for the development of the market for the use and processing of BD. In this case, any users will be responsible for unauthorized access to data.

In addition, by 2019, Russia may approve a concept for the development of legislation on robotics and cyber-physical systems, including the classification of such systems, information on their use of BD and risk insurance, as well as laws on the use of unmanned vehicles, subway trains and unmanned aerial vehicles.

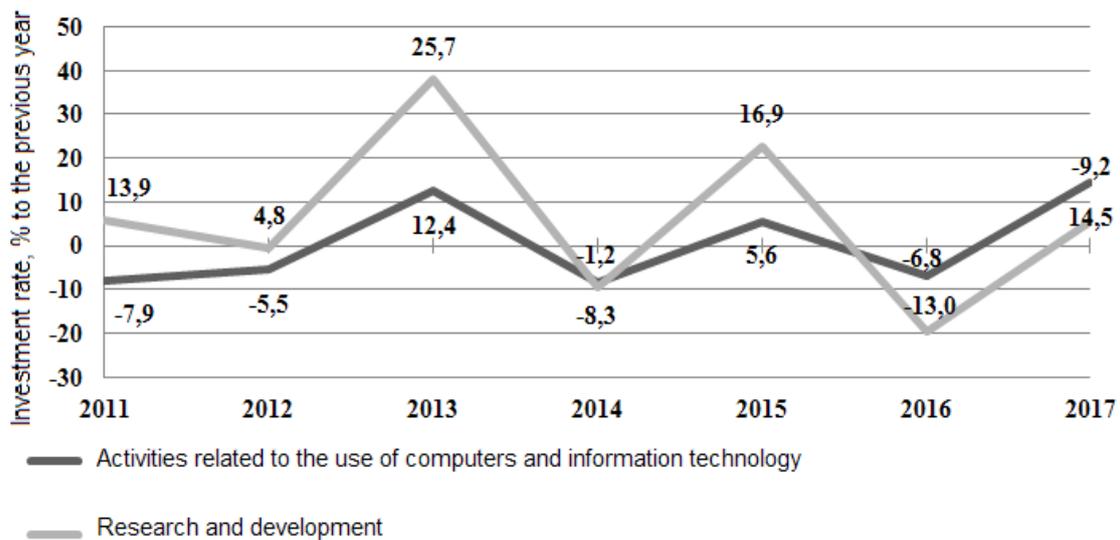
The government of the Russian Federation also provides for tax incentives for companies implementing digitalization: tax-exempt investments aimed at the transition to robotics, quantization, opticalization, intellectualization and convergence of space and nuclear technologies.

The tools at the disposal of the Government will bring together all the participants of the economic market to successfully address the goals of socio-economic problems and challenges.

### 5.3. The formation of research competences and technological groundwork

Building a strong digital economy depends on stimulating innovation and its diffusion in society. Innovation is recognized as an important source of business competitiveness. They can do this in different ways: reducing production costs, increasing the existing range of products, and they can lead to the creation of new products, to the implementation of more effective ways of their supply and sales.

Innovation is related to the level of investment in ICT in a country. Figure 03 shows the dynamics of fixed capital investment in the Russian Federation in two economic activities at comparable prices (as a percentage of the previous year).



**Figure 03.** The dynamics of fixed capital investment in the Russian Federation in two economic activities at comparable prices (as a percentage of the previous year)

As can be seen from the graph, the trend in the level of investment in research and development and in activities related to the use of computers and information technology, has been unfavorable: funding over the past 7 years is non-system, increases and decreases. This fluctuation may be related to the funding of individual research projects and programmes. There are no criteria of efficiency and minimum parameters of necessary works on both indicators. In this regard, it is important to form and support at the state and municipal level not only the trend of grants and funding of individual projects and programs, but also to identify the key parameters of continuous investment in research and development, as well as in activities related to the use of computer technology and information technology.

At the same time, analyzing some indicators of science and innovation sections from the Rosstat website, given in table 02, it can also be concluded that innovation activity fell over the periods of 2014-2016, spending on science from the Federal budget is also reduced, while domestic spending on research and development tend to increase.

**Table 02.** Dynamics of indicators of science, innovation and information society\*

Indicator		2010	2011	2012	2013	2014	2015	2016
Number of organizations performing research and development in Russia, total		3492	3682	3566	3605	3604	4175	4032
Expenditure on civil science from the Federal budget, (% of GDP)		0,51	0,52	0,52	0,58	0,55	0,53	0,47
Domestic expenditure on research and development (% of GDP)		1,13	1,01	1,03	1,03	1,07	1,1	1,1
The share of organizations that carried out technological, organizational, marketing innovations in the reporting year, (% of the total number of surveyed organizations)	activities related to the use of computers and IT	10	9,2	9,4	9,6	8,8	8	6,3
	research and development	-	29,8	30,1	31	33,3	32,2	30,7

\*Note: Data source: Rosstat, section "Science, innovation and information society" -

[http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/science\\_and\\_innovations/](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/science_and_innovations/)

On August 30, 2017, the Federal state statistics service issued Order No. 563 "On approval of statistical tools for the organization of Federal statistical monitoring of activities in the field of education, science, innovation and information technology" (2018), which provides for the collection, systematization of various information of Russian organizations, including the preparation of annual reports of the following nature:

- "Information on the development and (or) use of advanced production technologies";
- "Information on the use of information and communication technologies and the production of computer equipment, software and services in these areas»;
- "Information on the implementation of research and development»;
- "Information on innovative activity of the organization".

Of particular importance is the last section. It will collect data on the practice of innovation in Russian companies, namely:

- Information about the innovative activity of the organization, containing information about the completed innovations of the company over the past 3 years, i.e. new or significantly improved products, services or methods of their production (transfer), introduced into practice new or significantly improved production processes, new or significantly improved marketing methods, organizational and managerial changes;
- The volume of innovative goods, works and services for the reporting year;
- Information on General economic, internal and other barriers to innovation;
- Costs of technological, marketing and organizational innovations by types of innovation activities and sources of financing for the reporting year;
- The results of innovative activities;
- Number of joint projects and types of research and development partners in the reporting year;
- Patenting and other methods of protection of inventions, scientific and technical developments of the organization;

- The number of new technologies (technical achievements), software acquired and transferred by the organization for the reporting year;
- Organizational and marketing innovations;
- Environmental innovation.

The collection, systematization and interpretation of such detailed information should contribute to a detailed analysis of the development of activities in the field of education, science, innovation and information technology at the microeconomic level (on innovation activities of Russian organizations), at the meso-level (in the formation and development of a system of management of intellectual capital of science cities and evaluation of the effectiveness of innovation), at the macro level (in the creation and support of innovation infrastructure, as well as the solution of the identified problems).

#### **5.4. Personnel and education**

The state program “Development of education”, approved by the government of the Russian Federation on December 26, 2017 No. 1642 includes five priority projects - "Creation of a modern educational environment for schoolchildren", "Universities as centers of the space for creating innovations", "Training of highly qualified workers taking into account modern standards and advanced technologies", "Affordable additional education for children", "Modern digital educational environment in the Russian Federation" - and the inter-program priority project "development of export potential of the Russian education system". It should be noted that the implementation of the state program became possible due to the growth of Federal budget expenditures under the section "Education". In 2014-2016, there was a decrease from 448.49 to 395.76 billion rubles (Halimon, 2016), but by the end of 2018 this figure should reach 482.74 billion rubles.

With the aim of gradual integration of online technologies in the educational process the Ministry of education and science adopted a number of normative legal acts the subject of regulation – the introduction of online courses in the educational program, the possibility of transfer of students to other educational organizations with the classification results of online learning, the order of application of e-learning and distance educational technologies (About results of activity of the Ministry of education and science of the Russian Federation in 2017 and tasks for 2018, 2018).

To improve the image of education, improve the role of Russia in the international arena, the Ministry of education and science of the Russian Federation carried out reforms and transformations (Halimon, 2017). The result of the work in 2017 was the introduction into trial operation of an information resource that provides access to online courses on the principle of "one window", with the possibility of remote development of disciplines (modules) of educational programs of secondary professional and higher education. Currently, the database includes more than 450 online courses are 13 online education platform.

In order to form the infrastructure and human resources in 10 constituent entities of the Russian Federation, a network of regional centers of competence in the field of online learning has been created-a kind of providers for the widespread introduction and effective use of online courses in universities and professional educational organizations – on the basis of which more than 3.5 thousand employees of educational organizations have been trained. In total, 241 thousand people were trained in online courses

for formal and non-formal education in 2017, including school students, students of universities and technical schools (colleges).

In accordance with the order of the President of the Russian Federation (January 15, 2017 № PR-75), the Ministry of education and science together with the Ministry of Finance and the Ministry of economic development of Russia is developing a draft state program "Scientific and technological development of the Russian Federation" (SE NTR), providing for the creation of a holistic model of public investment. Within the framework of SE NTR will be implemented separate complex scientific and technological programs and (or) projects focused on the implementation of the priorities identified by the strategy of education development. The priority complex scientific and technological programs and projects, which are in a high stage of development, are:

- Photonics as a platform for scientific and technological development;
- Scientific potential of socio-economic development of the Arctic zone of the Russian Federation;
- Genomic highway;
- Digital breakthrough: supercomputer technologies for new and transformable markets.

In addition, in accordance with the Consolidated plan of participation of the Ministry of education and science of Russia in exhibitions, fairs and congresses in science, technology, education and innovation in 2017, the participation of the Russian side in various international events (exhibitions, salons, fairs, forums, conferences, sessions), as well as the holding of its international scientific conferences.

So, at the end of 2017 at the State University of management (SUM, Moscow) held the 1st international scientific and practical conference "Step into the future: artificial intelligence and digital economy" (Terelyanskij, Lukyanova, & Smirnova, 2017). Its participants presented advanced achievements in the field of artificial intelligence, which allowed not only to exchange experience and identify the difficulties and shortcomings in the implementation of the strategy to achieve leadership of the Russian Federation in this high-tech and science-intensive sphere, but also to formulate for the Federal Executive authorities, research teams of the country implementing the policy of scientific and technological leadership, as well as industrial policy, the main directions of further development of this priority area. The recommendations given in the framework of the conference, formed the basis of the collection, based on the results of the project No. 2.10161.2017/5.1 "Analysis of key areas of research and development in the field of artificial intelligence and the possibilities of its use in the national economies" performed by the SUM in the framework of the state task of Russian Ministry of education and science.

## **6. Findings**

### **6.1. Information infrastructure**

- the broadband Internet coverage throughout the territory of the Russian Federation with the active placement of 5G networks is not still realized.
- the level of Internet penetration in Russia is constantly increasing.
- Russia ranks seventh in the total number of Internet users. The highlighted problem should be solved comprehensively and in the shortest possible time, as the country's transition to a new

level of digitalization depends on the development of information infrastructure in the regions. The problem of "digital inequality", which will be discussed at the end of this article, plays a crucial role here.

- in 2017 Russia demonstrated the highest growth rates of mobile phone sales compared to other major world regions.
- in addition, it should be noted that the policy and economy have a powerful impact on the development of the domestic market BI. Summing up the interim results of the import substitution policy, the players assess its impact in different ways. On the one hand, Russian developers are provided with good conditions for development, resulting in a large number of interesting Russian developments. On the other hand, Russian solutions have not yet reached the level of opportunities to force business to follow the public sector and abandon foreign developments. However, the Russian BI market has changed under the sanctions: some players, especially state-owned companies, are beginning to abandon the use of foreign BI-tools, and due to the fact that it is difficult to find Russian analogues with equivalent processing speed and data provision, they have to look for compromise combined analog solutions.

## **6.2. Information security and normative regulation**

- Russia took tenth place on the cybersecurity index, one point ahead of such technologically developed countries as Japan and Norway (official statement of the Ministry of digital development, communications and mass communications of the Russian Federation, 2017).
- by 2019 the Russian legislation may have unique requirements for the visualization of electronic signatures in electronic documents.
- by 2019 Russia may approve a concept for the development of legislation on robotics and cyber-physical systems, including the classification of such systems, information on their use of BD and risk insurance, as well as laws on the use of unmanned vehicles, subway trains and unmanned aerial vehicles.

## **6.3. The formation of research competences and technological groundwork**

- the level of investment in research and development and in activities related to the use of computers and information technology, has been decreasing.
- innovation activity fell over the periods of 2014-2016, spending on science from the Federal budget is also reduced, while domestic spending on research and development tend to increase. The government needs to take measures to stabilize the situation with an increase in spending on civil science from the Federal budget, which in turn will indirectly affect the growth in the number of organizations performing research and development in the Russian Federation, and the growth of innovative activity of organizations.
- the Federal state statistics service issued Order No. 563 "On approval of statistical tools for the organization of Federal statistical monitoring of activities in the field of education, science, innovation and information technology". It should contribute to a detailed analysis of the

development of activities in the field of education, science, innovation and information technology at the micro-, meso- and macroeconomic level.

- particular attention is paid to the formation and expansion of the list of science cities in Russia due to the fact that the level of development of science and research in them is higher than in other cities that do not have this status. As centres of science and innovation, science cities act as "points of growth" of the regional economy on an innovative basis.

#### **6.4. Personnel and education**

- the Russian government sponsors and enhances the opportunities of members of society, especially young people, and provides them with the necessary skills and tools to promote and advance their careers based on new knowledge.
- it implements programs of professional development of human potential of the world level, practical training and implementation of the latest technological trends for modern education of schoolchildren and University graduates, academic staff and professionals.
- it helps young innovators transform their ideas into successful businesses through various projects and programs offered by various institutions in their technology parks. I
- it also helps marginalized and remote communities, develops people's ability to communicate and access the global information environment, and supports Internet security.
- new digital technologies create the basis for a thorough study and development of the Arctic, Eastern Siberia and the Far East, training in high-tech specialties: digital production operators, operators of robotic systems, etc.

## **7. Conclusion**

Summing up, it is possible to assess the results of digitalization of the Russian economy by the following indicators: reduction of capital costs in industries and companies; reduction of operating and other costs and losses; efficiency of operation of digitalization centres in real time; efficiency of personnel (operators, it, administration). According to the analysis of the overall level of digitalization, conducted in 2017 by an international company working in the field of management consulting McKinsey & Company, an indicator was derived that characterizes the level of digitalization of countries - the digital economy and society Index (I-DESI) (Aptekman et al., 2017). It is calculated on the basis of 24 indicators to assess the level of use of digital technologies in the daily activities of consumers, companies and government agencies, as well as the provision of ICT infrastructure and the development of digital innovation.

The company's report shows that Russia has achieved some success in the development of the digital economy. Currently, the country is among the leaders of the group of "active followers" by investing in the expansion of ICT infrastructure and the introduction of digital technologies in government, but far behind the leading countries, especially in terms of digitalization of companies.

The digital economy of Russia is characterized by the so – called "digital inequality"-disproportions in the development of it technologies between regions. According to CNews Analytics, Moscow accounts for 40%, and 10 of 86 regions account for 80% of total government spending on information technology (Mazhorova, 2018). The level of digitalization of Moscow and St. Petersburg will

be appropriate to compare with world leaders, while the regions are more comparable with the States of the categories of "Active followers" and "Lagging followers". The digital divide created by the existing economic and social gap between the capital and the regions also contains opportunities to overcome it through the rapid and relatively inexpensive scaling inherent in digital solutions and services.

The digital economy is a new modern sphere of today's economic life, completely changing the existing connections and existing system models and methods of economic management. The need to meet the new challenges of the time is due to the policy of digitalization of the world economy and planning aimed at improving the efficiency of the global telecommunications infrastructure, expanding the capabilities of the export sector and creating a competitive environment that stimulates the development of new economies. This ultimately will increase the performance effect can be monitored by indicators such as reducing unemployment, increasing productivity, growth of economic indicators, the development of new industries, trends and activities. The exchange of information and the reduction of transaction costs will contribute to the transformation of society into a digital economy (Malyshkin & Halimon, 2018).

The draft program "Digital economy of the Russian Federation" regulates and specifies the main goal of digitalization of the economy. This is a new paradigm for natural resources, labour and other potentials and complexes, the concept of innovative values based on systematic approaches to solving emerging problems aimed at the digital development of industries in real time. The main thing is to create the foundations for such economic development.

Digitalization allows solving problems and challenges in the economy in a short time, efficiently, efficiently and with minimal risks, opens up great opportunities for growth, expansion of production and economic, financial and other activities of economic entities.

Combining advanced technologies and experience, the digital economy, as a new model of society, makes it possible to move to the next stage of improvement of socio-economic life in the country. This is a fundamental information base for the new technologies being created - already with light speeds of moving objects and all living things to space distances. The matrix of the digital economy makes it possible to develop the solar system, the nearest planets and galaxies for the needs of the country. Only through its development will it be possible to carry out such ambitious projects and programs in the near future. The digital economy is the prosperity of Russia and future generations.

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