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Pros and Cons of the Digital Economy in Russia

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ABSTRACT

The study object is the digital economy. The aim of the article is to define the risks and chances that accompany the rapidly developing digital technologies and penetrate into almost all spheres of human life and society. The following risks were identified: dependence of economic agents on the Internet; replacement of human labor with machinery; backlog of education system from the needs of the digital economy; digital inequality; oligopolization in the information market; reduction of state control over the digital economy; companies gaining significant advantages over consumers due to the use of modern technology for big data analysis; supranational nature of the digital economy and formation of network global market for goods and services; reduced scope of protectionist measures for national producers and import substitution; rise in cybercrime. The chances are: emerging new jobs affected by digitalization; development of security and risk management technologies; automation of industry and provision of services; development of 3D printing and other additive manufacturing technologies; development of end-to-end virtual environment technologies; nearly endless segmentation and restructuring of the digital economy due to permanent appearing and disappearing of its elements (niches); transaction cost reduction; improving the quality of state electronic services for both business and public.*

Keywords: digital economy; digitalization; blockchain; fintech; financial technology; national economy; payment systems; cryptocurrencies; electronic money; cybercrime; labor market; taxes

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INTRODUCTION

The term digital economy as a phenomenon is frequently used in common speech and media. It is relatively new and yet to be studied, although it is of considerable importance for further development of both national and global economies. The term digital economy was first coined in the scientific literature in 1996 [1]; however, for more than 20 years there has not been a single idea of its essence. Scientists made many attempts to formulate its generally accepted and accurate interpretation, although without much success. This might be due to the dynamic nature of the development and the versatility of the digital economy.

Scientists of different periods focused on the development features of the digital economy within a certain period. At the turn of the century, the authors focused on e-commerce [2, 3].

The attention to the institutional component has notably increased since 2010, primarily to the role of state regulation. The phenomenon of the digital economy was already studied at the level of national and su-

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pranational scientific and managerial structures (European Commission, OECD, G20 DETF).

The issues of cybersecurity, privacy, the impact of big data technology, the Internet of things and artificial intelligence on the economy and society have been brought up since 2013–2014. Some scientific papers overview the definitions of the digital economy and their interpretations. The articles by Bukh and Heeks, as well as Rouse [4, 5] are among them. A large amount of research for financial technologies and automation of financial processes was conducted at the Financial University [6–10].

The development of the digital economy undoubtedly has a positive effect on economic growth and the ability of economic agents to fulfill their functions and satisfy needs. Like any complex phenomenon, the digital economy contains both opportunities and threats for various subjects of economic relations. This article provides their detailed analysis and the best ways of managing them.

THE DIGITAL ECONOMY AND FINANCIAL TECHNOLOGIES

Officially the digital economy is viewed upon in the Decree of the President of the Russian Federation "On the Strategy for the Development of the Information Society in the Russian Federation for 2017–2030"[1]. It is an economic activity where digital data is the key to production. Processing big data and using the analysis results may significantly increase the efficiency of various types of production, technologies, equipment, storage, sales, delivery of goods and services compared to traditional forms of management. The digital economy is not a separate industry; in fact it is a way of life, a new basis for developing public administration, economy, business, social sphere, and society as a whole. It is the achievement of a post-industrial society based on the so-called "knowledge economy". In this case, the information becomes an important economic resource. To receive, preserve and disseminate, as well as protect information is important for the development of society and individuals. With other countries competing for leadership in the formation of a new technological order, Russia's successes in the knowledge economy are critically needed for the future of the country.

Modern technologies have influenced social and economic relations and formed a new reality. This reality provides strong interdependence and mutual influence of both elements of individual socio-economic systems and the systems themselves at various levels. The digitalization has led to a psychological "contraction" of the world where distances have partly ceased to be an obstacle to the formation of ties between economic agents. The effect of digitalization can be compared with the development of rail and sea transport in the 19th century, as well as air transport in the 20th century. In the case of transport, distances shortened: traveling and transporting goods became easier, faster and cheaper, transport played the role of the circulatory system of the industrial economy and significantly contributed to its development. Telecommunication technologies had a similar effect on a post-industrial society where information began to play an important role.

Digital technologies are specific about the quality of the infrastructure of the development area, as well as the quality of human capital. Working in the digital economy requires significant knowledge and skills. In the new conditions the consumption function also demands certain specific skills from citizens.

In the context of information transparency and decentralized network structures, reducing information asymmetries, the state is losing its monopoly on managing the information field, and as a result, it partially loses the resource for managing the economy and society. In the future, the states, groups and indi-

[1] On the Strategy for the Development of the Information Society in the Russian Federation for 2017–2030: Decree No. 203 of the President of the Russian Federation of May 9, 2017.

viduals will undoubtedly be able to use material resources, relationships and information faster, more comprehensively and flexibly than their predecessors will gain the power[2].

The past few decades are described by significant political, social and economic instability. The development of information technology supported this turbulence, creating both new risks and opportunities for subjects of economic relations. Due to the traditional inertia of legislative and executive authorities, objective changes are often misunderstood and rejected at the state level. Though in 2018 President of the Russian Federation Vladimir Putin called to intensify digital transformation, little has been done within more than a year.

On May 28, 2019, Chairman of the State Duma Viacheslav Volodin estimated the delivery of the national project "Digital Economy" as too slow: "Of the 20 bills ... only one law has been passed so far, and 19 have not been adopted ... unless we reconsider our attitude to robotics, artificial intellect, we will not reach the indicator, and the task set in the President's message."[3]

In the context of the digital economy and the knowledge economy, changes are highly intense and often radical; they are destroying long-standing socio-economic relations and have a significant impact on the social and political life of countries. The inability of state authorities to keep pace with these changes and respond effectively to them, not to speak of anticipating them, to perform their functions requires a transformation of the management approach. In this regard, the scientific approach aimed at detailing and assessing the risks and chances of the digital economy is of particular relevance.

The major changes resulting from digitalization are observed in the financial sector of the economy. The term "fintech" is often referred to with the term "digital economy". A feature of financial relations is a large amount of information to be processed and transmitted to remote correspondents. Today, none of the areas of financial activity can be "pre-digital". Digital technologies are not only a tool in financial relations. They also determine area for development of financial organizations, change the nature and way of interaction with customers and create the technological basis of new financial instruments and services. The representatives of the financial sector have repeated that it was too late for banks to start digitalization: those who did not do this a few years ago fall far behind and will eventually have to leave the market. Indeed, modern innovations greatly affect the competitiveness of financial companies. Currently, the influence of trends and development of digital technologies determine the development of financial activity. The financial sector plays a key role in the national economy. This is evident in the formation of an innovative economy which requires significant investment and borrowing. Besides, the digitalization of financial relations is necessary for the development of the digital economy, since the intensification of economic relations, in particular, the Internet economy, has required electronic money and electronic payment systems. Therefore, special attention is to be drawn to fintech when analyzing the risks and opportunities for the development of the digital economy.

THE CONS OF THE DIGITAL ECONOMY

Despite having been developed for more than 30 years, the digital economy as a new qualitative phenomenon is still not fully understood. In terms of theoretical research, this slowness is not new or surprising. In terms of legal regulation of the economy and financial activity, lagging behind is not only extremely unacceptable, but also dangerous. Unfortunately, it is precisely the lag in the develop-

[2] Global trends: paradox of progress. A publication of the National Intelligence Council. January 2017. URL: https://www.dni.gov/files/images/globalTrends/documents/GT-Core-Russian.pdf (accessed on 02.10.2019).

[3] Volodin criticized the course of the national project "Digital Economy". RBC. 28.05.2019. URL: https://www.rbc.ru/economics/28/05/2019/5ced15079a7947bc82e3dbeb (accessed on 02.10.2019).

ment of modern economic theory, the insufficient assessment of the risks and chances accompanying the digital economy, which create the prerequisites for making erroneous decisions in its legal regulation.

In this regard, the risks and chances of the digital economy are to be analyzed, including in the financial sector.

The risks are as follows:

• *Economic agents depend utterly on the Internet*. Violating the normal functioning of the telecommunications infrastructure can completely paralyze various systems at all levels of the economy. The WEF Global Risk Report notes a critical failure of the information infrastructure as one of the most dangerous risks for mankind[4].

As already mentioned, digitalization in the financial sector has gone very far. Therefore, it is one of the most vulnerable elements of the economic system for the risk implementation.

It is worth mentioning the psychological dependence of the population on the network, the phenomenon of "clip thinking", and difficulties with perception of reality in a large amount of information whose significant part is false and / or manipulative.

• *Digitalization for the sake of digitalization*. There is a myth that digitalization can solve all multiple problems of the Russian economy. No doubt, the competent use of modern technologies can be beneficial. The Russian economy focuses on the export of natural raw materials at the cost of the manufacturing industry and infrastructure, where digital technologies can be expected to fit most efficiently.

The digital economy should not be limited to IT and telecommunications, as well as to the online economy. The elements of the digital economy are active on all segments of the national economy. Moreover, Industry 4.0 involves the brisk growth of high-tech industries and the introduction of cyberphysical systems in all areas of economic activity.

In Russia, the implementation of Industry 4.0 concepts is very limited due to a degraded non-resource real sector of the national economy. In the midst of economic sanctions, the weak domestic industry (especially machine tool and instrument making industries) significantly reduces the potential for innovation. This is risky as if the national economy continues to lag in technologies, the dependence on foreign technologies, software and high-tech equipment will increase.

In Russia, there is obviously too much enthusiasm for fashionable digitalization by means of budget subsidies; their effectiveness is as a rule questioned. This situation may remain the same until the state planning system of the economy is restored. The system combines strategic (long-term) and program-targeted planning in priority development areas (growth points).

• *Digitalization implies the development of robotics and artificial intelligence technologies* and poses risks for workers, especially for low or medium-qualified people. It is expected that a number of professions will cease to exist, the unemployment will rise and workers' social guarantees will be reduced.

The 2017 PwC report shows the shares of jobs threatened to be replaced by automation in different countries by 2030: 38% in the U.S., 35% in Germany, 30% in the U.K., and 21% in Japan. World Bank experts give even more menacing numbers for developing countries: up to 2/3 of all jobs in the coming years can be automated [11][5]. Domestic scientists predict that in our country 57 "traditional" professions will disappear by 2030, but 186 new ones will appear[6].

[4] The Global Risks Report 2019. The World Economic Forum. URL: https://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf (accessed on 02.10.2019).

[5] Workforce of the future. Pw C. 2018. P. 8. URL: https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf (accessed on 02.10.2019); World Development Report "Digital Dividends" by World Bank. 2016. URL: https://openknowledge.worldbank.org/ (accessed on 02.10.2019).

[6] Atlas of emerging jobs. Agency for strategic initiatives and Skolkovo Moscow School of Management. 2019. URL: https://www.atlas100.ru/index/ (accessed on 02.10.2019).

These problems are not yet relevant in Russia, since the use of industrial robots is still exotic. Nevertheless, the rise of artificial intelligence systems, including in the banking sector, has already led to massive reductions.

In the long term, in case of mass robotization in Russia due to the development of own technologies and production or due to the cheapening of foreign robotics, we can distinguish two serious problems for our society developed over the past decade. First, the age of retirement increase led to a significant number of workers to remain on the labor market. Like many older people, most of them do not have enough aptitude to learning new skills, as well as to retraining and generally possess outdated skills that will not enable them to be highly employable in the face of a reduction in available jobs, as well as jobs requiring low or medium qualifications. Second, a significant number of migrants usually engaged in menial work arrive in the Russian Federation annually. Due to declining demand for their labor, the situation of families of such migrants can worsen significantly. Therefore, it is now necessary to implement programs to integrate at least the children of migrants into the society and to ensure that they can receive a quality education. Otherwise, there may appear a lot of dropouts united by ethnicity, living on state allowance and often engaged in criminal activity. Unfortunately, in the USA ethnic gangs create significant problems for society.

• *The education system lags behind from the digital economy requirements.* On the one hand, standardization of educational process unifies educational programs and training of specialists with a predictable set of knowledge and skills. On the other hand, the education system remains extremely inertial and does not respond to ongoing significant changes caused by digitalization and other results of scientific and technical progress. The rapidly transforming labor market requires a more flexible system of personnel training and updated educational programs.

Labor activity and additional professional education partially reduce the gap between the requirements of employers and the capabilities of the domestic education system. This is positive, since in the knowledge economy, education should be a part of a person's life throughout his entire career. Nevertheless, eliminating the gap between knowledge and skills obtained at a university or college and the real work requirements costs employees and employers extra.

It is important that training of young specialists included developing their habits and needs for continuous self-education, for obtaining not only skills, but also knowledge, as well as readiness to change professions over a long working life. The adaptability of the employee to rapidly changing working conditions is one of the most valuable qualities.

• *Digital inequality*. As a result of previous industrial revolutions, the countries of the world will develop unevenly in Industry 4.0. Due to the development of digital technologies, the division of the world into the center and the periphery will increase even more. The level of the digital economy development varies in the countries of the global North and the global South. According to McKinsey, in 2010, the contribution of the Internet economy to the GDP of developed countries amounted to 3.4%, while in Russia, Eastern Europe, West Asia and other long-term countries this figure was 1.9%.

Inequality in development will be increasing at the regional level due to different quality of regional human capital, financial capabilities, infrastructure development, etc. Similar phenomena are observed in China, where the development of the digital economy in the eastern and southwestern regions is twofold different [12]. A good example is the state of California that surpasses the other states in terms of GRP and is a center for the development of information technology[7].

[7] California is a territory of an endangered middle class. News. Economy. 26.10.2018. URL: https://www.vestifinance.ru/articles/109254 (accessed on 02.10.2019).

At the micro level, digital inequality appears between citizens, considering their age, gender and education.

• *Oligopolization in the information market.* There are key economic resources and dominant social groups at each stage of economic and social development. In a post-industrial society, such roles were respectively acquired by information, as well as owners and top managers associated with data processing. They start fighting with the "old" industrial and especially the financial elite. In the post-industrial society, the main advantage of modern high-tech companies is the ability to accumulate and process large amounts of information about the most diverse aspects of the activities of individuals and legal entities using the Internet. This opportunity is the result of the widespread use of telecommunication technologies and personal electronic devices with permanent net access [13]. Therefore, IT-companies have instruments of active influence on decision-making by economic entities. These companies can offer goods and services even if potential customers do not yet understand they'd like to have them. The companies can shape public opinion and influence political processes (eg. the case of Cambridge Analytica). Thus, a class with intellectual dominance gains power over other citizens, who can lose subjectivity in decision-making.

Based on historical experience, it can be assumed that oligopolization processes will take place in the information market (as an economic resource). Oligopolization will manifest itself in the concentration of production factors belonging to a relatively small number of owners of huge and powerful IT companies, as well as in data concentration (and the processed information) in the data centers of these companies.

In such conditions, the situation of ordinary citizens is expected to become even worse. In the post-industrial society, such phenomena will be more humane than in the previous cases (for example, enslavement of low-land peasants, fast and socially difficult urbanization, cruel exploitation of the working class, etc.). Most likely, they will concern information rights and freedoms related to the protection of personal data, privacy, freedom of thought and conscience. In our opinion, a negative scenario for the development of the digital economy may also be the excessive use of technology by the state to control and suppress citizens.

• *Reducing the state control over the digital economy*, considering the trend for horizontal ties between economic entities and bypassing the traditional channels of exchange and consumption of goods and services. Typical of many relations in the information society, decentralization and anonymity tempt economic agents to avoid commitments to the state, to create an illusion of its uselessness, and to behave as free-riders. The state should suppress such behavior. At the same time, prohibitive regulation will be ineffective since it will create difficulties for law-abiding citizens and entrepreneurs, but will not solve the problem of circumvention of law by violators. It is necessary to find new ways to determine the tax base for entrepreneurs building their business through direct horizontal connections. Also, the state should ensure maximum transparency in the process of spending budget funds, which will lead to public awareness of the need and public utility of paying taxes.

• *Using modern technologies to analyze big data*, as well as collecting diverse user information by various companies lead to significant advantages over consumers. This results in personified advertising, artificial formation of public opinion, cramming. In our opinion, it is also dangerous to diversify citizens according to their well-being and solvency based on an analysis of their digital identity that leads to a selective approach to the provision of services and even rights to them. An example is the experience of the PRC in using a social rating system to divide people into groups with different rights and opportunities. Such experiments are completely anti-demo-

cratic and demonstrate a prospect of returning to the archaic society by means of modern technology.

• *Attempts to establish bans on the use of financial technologies* instead of legal regulation of their application as a consistent development of previously formed legal approaches. The complexity of the problem tempts to solve it by simple and crude methods, primarily prohibitive, which ultimately creates new problems, worsens the general business conditions in the country, and leads to an increase in the shadow sector of the economy.

An example is the prohibitive regulation of the cryptocurrency market. Despite the fact that the authors treat them negatively for non-environmental friendliness, the regulation should still be carried out in a civilized form and reflect a clear pragmatic position. The indecision and inconsistency of the financial authorities led to chaos regarding cryptocurrencies in the field of law enforcement. As a result, "curious" court decisions were made: for example, to prohibit information about cryptocurrencies from the Internet on the territory of the Russian Federation[8].

• *Supranational nature of the digital economy and the formation of network global market for goods and services*, including financial ones. The development of online trading has favorably affected the ability of citizens to purchase various goods in foreign online stores and marketplaces and to receive orders by mail. It is often cheaper than to buy them in local stores. Thus, Russian businessmen are losing customers and profits, and the state does not receive taxes. Restrictive measures reducing the maximum allowable cost of goods that does not require customs duties, to some extent, can limit the penetration of goods from foreign stores into the domestic market. However, a significant part of online purchases is associated with transferring rights to use digital objects (software, video and audio files, books, etc.), as well as a number of services provided electronically in the "gray zone" (for example, the services of numerous freelancers, streamers, creators of network content).

Financial transactions on the world's leading exchanges require only a computer and an Internet connection and are almost not controlled by the state whose resident makes such transactions. Traditional approaches to the legal regulation of these activities will not produce the desired result.

• *In the digital economy, the ability to implement measures to protect national producers and import substitution is reduced.* Protectionism involves the use of economic and administrative methods that artificially increase the competitiveness of domestic goods and services in the domestic market. Protectionism can also stimulate the development of domestic enterprises that ideally should catch up with foreign competitors in terms of production efficiency, product quality and other criteria. In case of the digital economy, a problem arises when its key products / services (microprocessors, storage media, operating systems, software) produced in the country are significantly behind their foreign analogues. Another problem is that copying production technologies for these products may be impossible for technical reasons, and creating own production that can catch up with the leaders is also impossible: regardless of the need for large investments (including in human capital), large-scale R&D and the need to fight for the sales market (preferably not only internal), there is a decisive time factor. Technology is developing faster: while the country is creating its own production of high-tech products, leaders will move further. Thus, in the context of Industry 4.0, the implementation of protectionist policies becomes more complicated and the implementation of the import sub-

[8] Bitcoin got to the Supreme Court. RBC website. URL: https://www.rbc.ru/newspaper/2018/03/05/5a97e79e9a79470de78a6eda (accessed on 02.10.2019); The Supreme Court agreed to determine the status of cryptocurrency sites. RBC website.URL: https://www.rbc.ru/technology_and_media/02/03/2018/5a97e79e9a79470de78a6eda (accessed on 02.10.2019).

stitution policy in high-tech industry is an extremely difficult task.

• *The backlog of legislation and law enforcement from the rapidly changing realities of the digital economy.* The norms of Section VIII of the Criminal Code of the Russian Federation "Crimes in the Sphere of Economics" and their application have a significant discrepancy between the legal interpretation and actual crimes in the sphere of economics committed using information and telecommunication networks, including the Internet [14]. A significant part of crimes is currently committed using information and telecommunication technologies, but they are quite traditional in nature (fraud with bank payment cards, distribution of drugs by the network, etc.). Digitalization has led to emerging crimes whose impact is directed to automated computer systems and the classification of acts (for example, fraud) is very difficult. Supposedly, the development of digital technologies and their application in the economic sphere will accelerate and this gap will grow. It will increase opportunities for actually criminal activity in temporary lags arising between the beginning of the criminal use of new technologies and the emergence of legislative tools to suppress such activities.

• *Increasing risks of cybercrime in the context of the development of the digital economy.* Of particular note is the importance to develop information security technologies. Widespread use of information technology and digitalization of various activities create "cumulation" of risks in the context of many interconnected complex systems. Already mentioned "The Global Risks Report 2019" report notes that there are quite likely and serious risks: "critical destruction of the information infrastructure", "IT fraud and data theft", as well as "cyber attacks". The activities of cybercriminals are dangerous for several reasons. First, it is transnational, which significantly complicates the fight against it even without considering multi-level identity anonymization of the criminal achieved by means of modern technologies. Second, the object of cybercriminal attacks is information, an important "resource" of the post-industrial society. Destruction, theft and compromise of information can lead to extremely negative consequences for both citizens and companies, and for states. Third, the objects of infrastructure and production often become the target of cybercriminals and cyberterrorists. Proliferation of cyberphysical systems and the high level of interaction and interconnectedness of various objects through information and telecommunication technologies make them extremely vulnerable to cyber attacks. Fourth, the cost of resources for committing cybercrimes is not comparable with the possible damage from them. Fifth, the activities of cybercriminals are often not of a pronounced institutional nature, they may not be regarded as "traditional" crime which complicates the activities of law enforcement agencies.

THE GOOD EFFECTS OF DEVELOPING THE DIGITAL ECONOMY

Let us take a look at the chances of the digital economy:

• *Beneficial processes in the labor market.* As already mentioned, digitalization not only clears jobs and professions away, but also promotes new ones. Opportunities for remote work are growing creating great employment opportunities for residents of remote and depressed territories, as well as for people with limited mobility. Statistics on online platforms related to career and remote work show the significant popularity of remote employment and freelance. Linkedin has over 350 million users, Careerbuilder is visited by more than 24 million users a month. Platforms related to freelance are actively developing: 12.5 million users are registered at Upwork, 14.3 million — at Freelancer.com, Uber service alone has about 1 million drivers [15]. According to individual evaluations, by 2020 every second worker in the USA is expected to become freelancer [16].

Distributed and unneedful of offices, new network structures will save companies on rent and employees' commute time. Such transformations in the labor market require reforms of labor legislation, for example, in terms of accounting for working time, monitoring its duration, working hours, part-time work, etc.

Researchers also note returning the production of a significant part of consumer goods and services to households based on improving household appliances [17]. This observation is also evidence of some decentralization of the modern economy in the framework of co-consumption.

• *Using the concepts of the Internet of things and big data to improve business performance and reduce uncertainty.* Smart systems, process automation in various fields of activity consisting in collecting and processing large amounts of data by machines, as well as excluding people from routine activities, will increase economic resources efficiency and reduce the impact of uncertainty in decision-making. The use of industrial Internet technology will positively affect most sectors of the economy. The development of the concept of "smart cities" and "smart homes" will allow for a more efficient use of resource-saving technologies, a beneficial effect on the quality of the urban environment and the lives of citizens, and will increase public safety.

• *Development of security and risk management technologies.* The development of digital identity and blockchain technologies will ensure the security of the activities of economic entities, cut down transaction costs, reduce the influence of asymmetric distribution of information, and diminish the uncertainty factor.

The use of drones, robots and artificial intelligence systems will reduce the need for human participation in hazardous activities, minimize the risk of the "human factor", and automate public safety systems.

• *Automation of industry and the provision of services, as well as the development of 3D printing and other additive manufacturing technologies.* Robotics and artificial intelligence cut the need for labor resources in the context of mass production and standardization of service delivery. At the same time, the development of additive manufacturing technologies opens up opportunities for individualization of products. This may lead to a creative approach to production, an increase in demand for highly skilled workers able to create unique products in accordance with the specific needs of the customer.

• *The development of end-to-end virtual environment technologies to reduce the negative impact on the economy of factors of large distances and imbalances in the economic development of territories.* The use of modern information and telecommunication technologies (augmented and virtual reality, digital identity, blockchain, cloud technology, remote workstations), as well as measures to reduce "digital inequality" will weaken the centripetal processes in the Russian economy and minimize spatially determined gaps in the economic development territories caused (among other factors) by the concentration of economic resources in a small number of regions. This concentration is as a result of socio-economic processes associated with accumulating resources in a limited area in order to achieve a synergistic effect for more intensive economic growth. The use of these technologies and creation of an appropriate infrastructure will reduce the level of this concentration without slowing down economic development. Virtual environment and big data technologies will create mechanisms for identifying the most effective solutions in various fields of activity with their subsequent relay to all subjects of a particular system. A key area is the creation of a large-scale virtual educational environment, integrated into the modern education system at all levels. This measure is focused on the development of human capital, one of the most important factors of scientific and technological progress. Virtual environment technologies can be used in healthcare, state

and municipal administration, as well as in the field of national defense.

• *Virtually endless segmentation and restructuring of the digital economy due to permanent appearing and disappearing of its elements (niches).* Such flexibility opens up opportunities for self-realization and self-sufficiency of citizens that contributes to economic growth and reduces the social burden on the state. Besides, emerging new niches create additional opportunities for small and medium-sized businesses, as well as startups. In this regard, an important postulate of legal creativity should be the creation of favorable conditions for new niches of the digital economy.

• *Reducing transaction costs.* A feature of the digital economy is the diminishing role of intermediaries by creating digital services (for example, electronic trading platforms) that provide direct contact between the supplier and buyer of goods or services. The territory where counterparties are located, language barriers, and currency differences do not anymore have a significant impact on the economic relations of various entities. The legal regulation of such services and the protection of the rights of the parties (given the possible location of sites and one of the parties outside the Russian jurisdiction) are still an urgent problem. At the same time, attempts to regulate such Russian sites will only lead to their loss of competitiveness compared to the foreign ones and will stimulate the departure of both the sites and their customers outside the Russian jurisdiction.

• *Improving the quality of state electronic services for both business and public.* Governments of all countries are increasingly switching to digital technologies. In developing countries the number of jobs with intensive use of IT technologies is higher in the public sector than in the private one. By 2014, all 193 member states of the United Nations (UN) had national websites: 101 of them allowed creating personal accounts, 73 of them could file income tax returns, and 60 of them could register a company. As for the most common basic government administrative systems, 190 UN member states have implemented automated financial management, 179 have used such systems for customs clearance, and 159 — for tax administration. 148 of them have introduced some form of digital identification, and 20 of them have created multi-purpose digital identification platforms[9].

Many efficient and convenient electronic services were already created in Russia. They facilitate relations between authorities and citizens on various issues. In general, it should be noted that in developing this element of the digital economy, the Russian Government has achieved significant success.

CONCLUSIONS

Undoubtedly, the list of risks and opportunities that accompany the development of the digital economy is not complete. Nevertheless, ignoring the mentioned risks and chances of the development of the digital economy in Russia may cause errors in planning and in making decisions in economic regulation at both the legislative and executive government levels.

Due to digital technologies and the ongoing transition to a new technological structure, the Russian Federation has a unique chance to become competitive at the international level, to solve many internal problems, and to improve the quality of life of citizens. Our country has repeatedly experienced modernization in a very short time which often led to severe social and other risks. To manage such risks, one should study them in the framework of scientific activity, conduct predictive analysis, plan measures to minimize and eliminate them. Scientists from various fields of science should focus on the changes in society that accompany the development of digital technology.

[9] World Development Report "Digital Dividends" by World Bank. 2016. URL: https://openknowledge.worldbank.org/ (accessed on 04.10.2019).

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M. A. Eskindarov — development of the common concept and the research methodology.
V. V. Maslennikov –analysis of the digital economy concept and its connection with financial technologies, selection and review of sources of scientific and statistical information, identification of the chances and risks of the digital economy.
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