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## Government socio-economic policy under the digital economy in the foreign countries and Russia

**Abstract.** Socio-economic policy is described in the research as an effective tool of economic change. Goals and objectives, effects and implementation mechanisms of various socio-economic policy types which are based on the analysis of modern foreign and Russian development and implementation practices are discussed in the article. Comprehensive analysis of main methods of the government economic regulations is presented. Their effectiveness and influence on the economic development of the country is assessed.

The state and growth rates of the digital economy in different countries have been analysed (data of Global Cybersecurity Index, Digital Evolution Index, IMD World Digital Competitiveness Ranking, Bloomberg Innovation Index were used). Key areas of interaction between economic policy actors of the state have been identified for the purpose of ensuring economic security and threats' neutralization for the effective performance of their functions within a single economic system. Statistical indicators of the world digital technologies market, macro-technologies, knowledge-intensive products are analysed. Risks of the digital economy are highlighted, in particular: risks of cyber-attacks, cyber-threats, cyber-crimes, computer terrorism, Internet hacking and fraud, information leakage, unemployment growth as a result of automation of production and usage of robots and others.

Current problems of the government economic policy under the digital economy and the main obstacles to its effective implementation are identified. Slow development and implementation of new technologies, low level of the digitalization, and lack of specialists in the field of information technologies and, as a result, a small share of the digital economy in the GDP of the country are of special attention.

**Keywords:** Economic Policy; Digital Economy; Digital Technologies; Innovative Potential; Investment Activity; Tax Policy; Economic Growth

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**Державна соціально-економічна політика в умовах цифрової економіки в зарубіжних країнах і Росії**

**Анотація.** У статті розглянуто соціально-економічну політику як ефективний інструмент трансформації економіки, розкрито цілі та завдання, ефекти й механізми реалізації різних видів соціально-економічної політики на основі аналізу сучасної зарубіжної та російської практики їх розробки й реалізації. Представлено комплексний аналіз основних методів державного регулювання економіки та надано оцінку їх ефективності в частині впливу на економічний розвиток країни.

Проаналізовано стан і темпи зростання цифрової економіки в країнах світу (використано дані Global Cybersecurity Index, Digital Evolution Index, IMD World Digital Competitiveness Ranking, рейтинг Bloomberg

Innovation Index). Виділено ключові напрямки взаємодії між суб'єктами економічної політики держави для цілей забезпечення економічної безпеки та нейтралізації загроз ефективного здійснення їх функцій у рамках єдиної економічної системи. Проаналізовано статистичні показники світового ринку цифрових технологій, макротехнологій, наукомісткої продукції, а також виділено ризики цифрової економіки, зокрема: ризики кібератак, кіберзагроз, кіберзлочинності, комп'ютерного тероризму, Інтернет-хакингу та шахрайства, витоку інформації, зростання безробіття внаслідок автоматизації виробництва й впровадження роботів та інші.

Визначено актуальні проблеми державної економічної політики в умовах цифрової економіки й основні перепони для ефективної її реалізації, серед яких особливої уваги заслуговують: повільне освоєння та впровадження нових технологій, низький рівень цифровізації, брак фахівців у сфері інформаційних технологій, і, як наслідок, мала частка цифрової економіки у ВВП країни.

**Ключові слова:** економічна політика; цифрова економіка; цифрові технології; інноваційний потенціал; інвестиційна активність; податкова політика; економічне зростання.

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#### **Государственная социально-экономическая политика в условиях цифровой экономики в зарубежных странах и России**

**Аннотация.** В статье рассмотрена социально-экономическая политика как эффективный инструмент трансформации экономики, раскрыты цели и задачи, эффекты и механизмы реализации различных видов социально-экономической политики на основе анализа современной зарубежной и российской практики их разработки и реализации. Представлен комплексный анализ основных методов государственного регулирования экономики и дана оценка их эффективности в части влияния на экономическое развитие страны.

Проанализировано состояние и темпы роста цифровой экономики в странах мира (использованы данные Global Cybersecurity Index, Digital Evolution Index, IMD World Digital Competitiveness Ranking, рейтинг Bloomberg Innovation Index). Выделены ключевые направления взаимодействия между субъектами экономической политики государства для целей обеспечения экономической безопасности и нейтрализации угроз эффективного осуществления их функций в рамках единой экономической системы. Проанализированы статистические показатели мирового рынка цифровых технологий, макротехнологий, наукоёмкой продукции, а также выделены риски цифровой экономики, в частности: риски кибератак, киберугроз, киберпреступности, компьютерного терроризма, интернет-хакинга и мошенничества, утечки информации, роста безработицы в результате автоматизации производства и внедрения роботов и другие.

Определены актуальные проблемы государственной экономической политики в условиях цифровой экономики и основные преграды для эффективной ее реализации, среди которых особого внимания заслуживают: медленное освоение и внедрение новых технологий, низкий уровень цифровизации, нехватка специалистов в сфере информационных технологий, и, как следствие, малая доля цифровой экономики в ВВП страны.

**Ключевые слова:** экономическая политика; цифровая экономика; цифровые технологии; инновационный потенциал; инвестиционная активность; налоговая политика; экономический рост.

## 1. Introduction

One of the main tasks in the process of economic reforms is implementation of effective economic policies aimed at innovative development and ensuring of national economy sustainable growth. To find effective tools of managerial and organizational-economic impact on economic growth through mechanisms that stimulate economy to be innovation-oriented and competitive are of great topicality. Regulations of innovative development and support for cluster initiatives have special importance. These are necessary tools for the country's transition to the innovative development. It is necessary to use both acceptable foreign experience and to form national experience in regulating social and economic processes for implementing effective economic policy.

**Problem statement.** Digital economy is actively developing in developed countries. Such countries are characterized by a high rate of innovations and their progressive markets can be an example of successful technological progress and guide for future growth. In the Russian Federation potential of social and economic policy in innovative development regulation, improving the economy competitiveness and national security ensuring is insufficiently used.

## 2. Brief Literature Review

Growth of information and communication technology usage has increased significantly over the past three decades (Castellacci & Tveito, 2018; Nagy, 2017). EU states are on their way to the

digital economy. There is a significant gap in the digital development between different countries (Ryan, 2019; Sturgeon, 2019). Digital technologies are closely related to the country's innovative potential (Kurochkin, 2019). Europe's economic policy of the digital economy formation combines competition policy, industrial development, innovation and strategy to form a single digital market (Yang, Hao, & Cai, 2015; Afonaso, Galichkina, Panfilova, & Ślusarczyk, 2019). When it comes to the digital technology, industrial companies become active investors (Campodónico, Bonfatti, & Pisano, 2016; Mukherjee, Singh, & Žaldokas, 2017; Sari, Dewi, & Sun, 2015). Industry relies on its strengths in the advanced digital technologies and its presence in traditional sectors, using capabilities of artificial intelligence, robotics, the digital platforms and the Internet (Frolov & Kaminchenko, 2019). The onset of the digital progress requires workers to have proper digital qualifications and a certain level of the digital skills (Gonçalves, 2017; Savelyeva, 2019; Tagarov, 2019). The use of the government tax policy instruments allows supporting activities of small and medium-sized businesses in the digital economy, stimulating the development of innovation activity and influencing the level of investment activity (Atems, 2015; Dosi, Fagiolo, Napoletano, Roventini, & Treibich, 2015; Tkacheva, Sevryukova, & Afanaseva, 2016). Russian digital economy is analysed in the context of innovative development by many Russian scientists (Vertakova, Golovina, & Polyani, 2019; Dneprov & Mikhaylyuk, 2019). Risks and threats of the digital economy and ways to overcome them are also under consideration (Volkova, Plotnikov, & Rukinov, 2018).

**3. The Purpose** of the paper is to summarize foreign experience in the implementation of the government socio-economic policy in the conditions of the digital economy and to study the prospects for its application in the Russian Federation.

The following objectives are necessary to achieve this goal:

- to consider the essence of social and economic policy as an effective tool for economic transformation;
- to analyse the state and growth rates of the digital economy in different countries;
- to identify key areas of the government economic policy for the purpose of ensuring economic security and neutralizing threats to the digital economy;
- to analyse statistical indicators of the world the digital market;
- to specify topical problems of the government economic policy and the main obstacles for its effective implementation in the modern Russian conditions and propose ways to solve them.

#### 4. Results

Public economic policy is an effective tool for economy transformation, the main tasks of which are:

- stimulating - promotion of priority areas of social reproduction;
- compensating - redistribution of income in order to reduce damage caused by uneven regional development in the form of backward and depressed regions assistance;
- adapting - support of new activities, creation of special economic zones, clusters;
- counteracting - «deceleration» or complete suppression of some processes in the economy.

The formation of the government economic policy depends on the type of the state structure. Hence, it is logical to analyse the foreign experience of the digital economy development in the combination of technical, technological and socio-economic processes.

Today's society is characterized by the dominance of information technologies in the economy, active use of the Internet, the development of IT sphere. This is a result of the digital revolution. The government economic policy has recently been focused on creating full the digital environment through the implementation of the state programmes. Economic competitiveness is caused by such key indicators as knowledge, technology, the Internet platforms, institutional processes and innovation capacity. Such new directions as neurotechnology, robotics, 3D printing, the digital currency and others are developing now.

Digitalization is actively introduced in all spheres of economic life of the society, operations of companies, public administration. This leads to the economy restructuring. Digital economy is a modern type of the digital economic relations. General goal of the «digitalization» is to achieve economic competitiveness and national security at the new level (Abdrakhmanova et al., 2019).

Peculiarities of the «digital economy» of each country are determined by economic and socio-cultural factors, the quality of human capital and education.

Digital economy is implemented in six key areas:

- training of personnel contributing to the digital economy promotion; education modernization according to the «digitalization» trends;
- expansion of the digital and information platforms (communication networks, databases);
- information security (ensuring the rights of the citizens, individual protection);
- development of the digital technologies competitive in the world;
- formation of a favourable regulatory regime for companies carrying out the digital technology activities;
- creation of favourable conditions for taxation as well as incentives and subsidies for companies carrying out economic activities which involve the digital technologies;
- use of the digital technologies in the public administration and public services.

More generally, the digital economy is information and communication technology activity which can reach up to 25% of GDP in different industries.

If we study the digital economy as a set of markets connected to the Internet infrastructure and related services. In such case, the share of the digital economy in Korean GDP is 12%, in US GDP it is up to 7.4%, in Japan - 6.9%, in Russia - 3% (Figure 1).

Digital economy has significant advantages over the monetary relations in rapid delivery of services, in particular:

- widespread use of the Internet and growth of digital skills;
- increased innovation and investment activity;
- expanding of knowledge-based services and technology markets;
- diversification of labour and service markets;
- inclusive development in regions;
- development of industry in regions;
- other macroeconomic and technological advantages of the new era.

Digital economy facilitates productivity increase; companies' competitiveness increase; reduction of production costs; creation of highly efficient jobs; improvement of the society well-being and national security ensuring.

There are also such risks of the digital economy as:

- risks of cyber-attacks, cyber-threats, cyber-crime, computer terrorism, Internet hacking and fraud;
- «the digital slavery,» leakage of personal information;
- unemployment increase in some sectors of the economy, emergence of outdated jobs as a result of the production automation and usage of robots;
- environmental risks resulting from the rapid aging of machinery and the problem of its disposal.

Global cyber-security index can be used to assess the digital economy risks, which takes into account legislative network and legal support, technical and organizational implementation of programmes, capacity-building for the development and cooperation on the global stage in this area. Figure 2 shows ranking of countries by the cyber-security level.

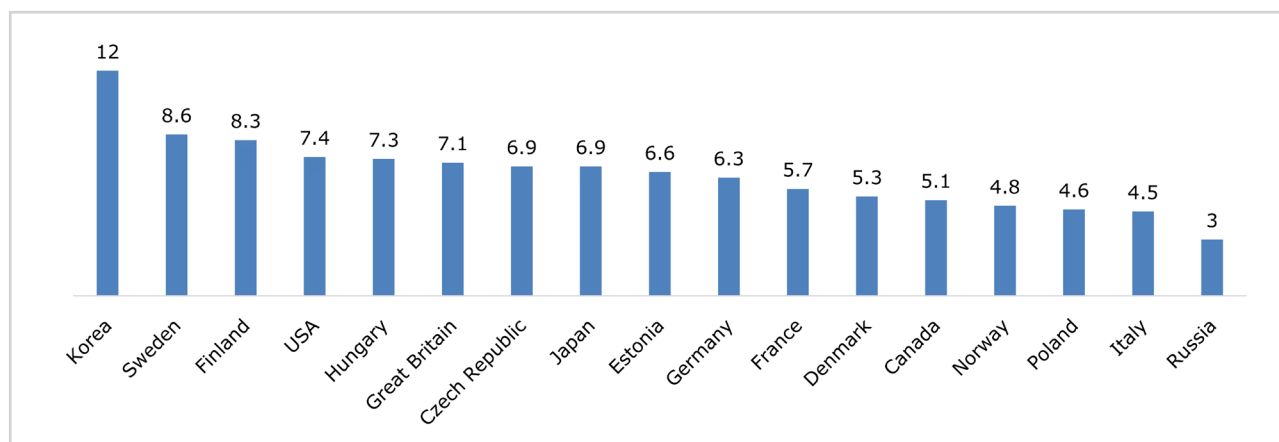


Figure 1:

**The share of the digital sector in GDP in 2018-2019, %**

Source: Compiled by the author based on data by Global Cybersecurity Index (International Telecommunication Union, 2018)

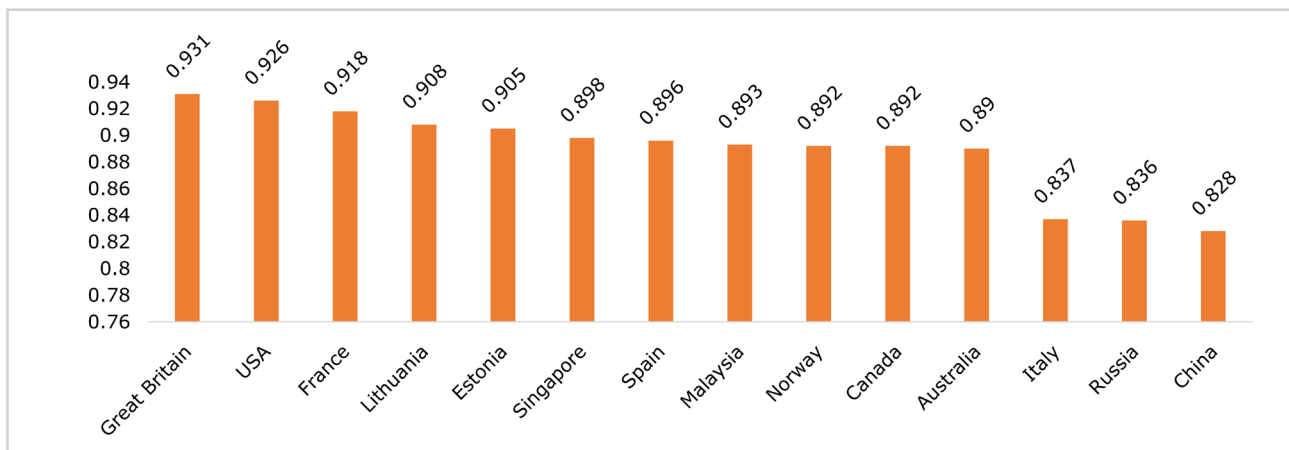


Figure 2:

**Global Cybersecurity Index and World Ranking in 2018**

Source: Compiled by the author based on data by Global Cybersecurity Index (International Telecommunication Union, 2018)

The leading countries in this ranking are the United Kingdom, the United States and France. Russian Federation is 26<sup>th</sup> between Italy and China. It is noteworthy that by 2019 more than 90% of the countries impose liability for cyber-crime (in 2017 - 70%).

Let us consider the ranking of countries by competitiveness and potential of the digital economy within the Digital Evolution Index (Chakravorti & Chaturvedi, 2017). Each state in this rating was estimated according to 170 indicators which determine, in particular, the innovative climate, the spread of the Internet infrastructure, demand for electronic services, etc.

The leading countries in the ranking of the world's digital economies today are the United States, Singapore, Sweden, Denmark, Switzerland, the Netherlands, Finland, Hong Kong, Norway, South Korea. China is on the 22<sup>nd</sup> place, while Russia is on the 38<sup>th</sup>, adjacent to Saudi Arabia.

There are companies which are the digital platforms in the leading countries: in the USA - Facebook, Amazon, Microsoft, Google, Apple, in China - Alibaba, Tencent and others. These companies introduce advanced technologies in the world technology markets. They act as the centres of innovative agglomerations and have a significant place in the development of the digital economy of the countries. In addition, they control print editions, electronic and entertainment resources, affecting society as the participants of the digital economy.

In the World Rating of Digital Competitiveness, International Institute for Management Development divides countries into four groups (World Digital Competitiveness Ranking, 2019). Leading countries showing high rates of technological growth are Singapore, Great Britain, New Zealand, UAE, Estonia, Hong Kong, Japan and Israel. Countries whose development rate has decreased are South Korea, Australia and Western Europe. There is a group of countries attractive to long-term investors. These countries are China, Kenya, Russia, India, Malaysia, the Philippines, Indonesia, and Brazil. Problematic countries for the digital development are South Africa, Peru, Egypt, Greece, and Pakistan.

Bloomberg news agency identified ten countries by level of innovative development in 2019: South Korea, Germany, Finland, Switzerland, Israel, Singapore, Sweden, the USA, Japan, France. Russia is on the 27<sup>th</sup> place between Malaysia and Luxembourg (Bloomberg Innovation Index, 2019).

There are three groups of countries which differ in the scientific and productive development:

- countries leading in science, with developed MIC, implementing major targeted projects of full cycle (USA, England, France);
- countries that rationalize economy structure and actively disseminate innovations through the creation of the favourable innovative climate (Germany, Sweden, Switzerland);
- countries introducing innovations through the innovative infrastructure (Japan, South Korea).

National program of space industry including telecommunications (European Galileo Satellite) with the budget of more than EUR 150 million is implemented in France. National program «National Nanotechnological Initiative (NNI)» with the budget up to USD 1 billion per year is implemented in the USA (cit.by Vertakova, Risin, & Trusova, 2018). In the USA, Japan, a number of EU countries and the People's Republic of China development of the business associations and cooperation in nanotechnologies is due to the state support of the strategic alliances, conglomerates, associations, development of public-private partnership.

**Current problems of formation and stimulation of innovative clusters**

The world market for macro-technologies covers more than 50 types of high-tech products. The USA has 22 items, Germany - 10, Japan - 7, Great Britain and France - 3-5, Russia with the rest of the world has 3-4. Native priorities in innovation are connected to the creation of aerospace equipment, weapons and software products. Highly developed countries have 80-90% and almost all world exports in total world production of knowledge-intensive products, while Russia's share in these exports is 0.3%. The share of knowledge-intensive sector of Russia in the corresponding world sector is 1.2%, while the USA has 34.2%, Japan - 19.6%, Germany - 4.9% (cit. by Risin, Vertakova, & Trusova, 2018).

Cluster creation helps generate demand for innovation. The Government of the Russian Federation has begun to approve clusters as a necessary tool for the development of the certain industries of national priority. This fact is confirmed in a number of normative acts. In total, about 350 competitive agglomerations are on the map of potential clusters of Russia.

A network of organizations in various industries (construction, production, maintenance of life support systems of the population, transport services, etc.), non-profit organizations (NPOs), Universities, research institutes are prospective participants of the cluster for tax incentives. Emerging of the communication systems within clusters may initially be unstable and lack of sustainable communication between the cluster members, which requires attention to cluster group members and their interactions.

One of the problems is difficulty of registering an organization as an NPO. At the same time, an organization registered as NPO has an obligation to provide a large number of reports, complete and submit «zero» declarations. As a result, according to statistics, only 13% of all non-profit organizations are officially registered in Russia.

Medicon Valley Cluster (Denmark and Sweden) provides sustained economic growth as a result of the integration of the cluster members into a single system of 32 hospitals, 12 universities, 25 pharmaceutical companies, about 100 enterprises for the production of medical equipment, 170 medical and technical companies are in this cluster.

It is important to promote the results of intellectual activity (RIA) for the purposes of economic impact, production of new products and services, improvement of regional infrastructure and etc.

Granting tax incentives and preferences to cluster associations that operate out of clusters approved by the Russian Government are unclear. The criteria for the inclusion of organizations into the cluster are rather complex for small business networks, as they imply a rather high level of developed management activities.

Thus, tax privileges are granted to a limited list of economic entities. Remaining companies forming cluster groups operating out of government-approved clusters are not under these benefits and preferences. A similar situation is with the procedure for the subsidies granting in Russia.

Common methods can be used to regulate socio-economic development. It can be direct impact methods or administrative methods and indirect methods (economic ones).

There are the following types of the government support for innovation in Russia:

- tax incentives (reduction of income tax rate, often in the part belonged to the budget of the region; investment tax credit; exemption from property taxes payment, etc.) and customs privileges;
- construction of the special economic zones infrastructure at the expense of the federal and regional budgets;
- budget transfers (subsidies and grants) at the regional level.

However, the existing measures to support innovation are not significant, as income tax is not paid by all taxpayers (due to the lack of profit especially at the initial stage of cluster creation and operation due to the costs incurred). Property taxes have no significant role in the tax burden of the enterprises. Nevertheless, the connection between the fiscal interests of the state and economic entities can be a basis for the justification of financial proportions of the government support development, in particular for determining the most rational limits of the tax exemptions.

The most innovative country in the world is the United States. It applies traditional financial instruments to stimulate innovations: tax credits, loan guarantees, and grants. The state can reduce tax rates by implementing tax policy and stimulating certain sectors of the economy. In this case, mechanisms of the government regulation and development of the priority sectors may include cases when released amounts of tax contributions are reinvested by these enterprises into innovative development, modernization and expansion of production. Thus, the state can create an

indicative mechanism for transforming potential tax revenues into the innovative projects by adjusting the tax burden.

The state can influence innovative development by introducing fiscal elements of the government regulation, taking into account their indicative nature. It can also ensure investment in certain spheres and industries. Budgetary effect from which will be significant. At the macro level, the result of indicative regulation should be implementation of effective fiscal policy, formation of innovative economy, modernization and technological renewal of production (Klimenko & Trusova, 2016).

The formation and regulation of innovative clusters should take into account individual approach to the development problems of each cluster. In order to generate demand for innovation, it is necessary to support not only the «established» clusters, but also to promote enterprises in the long run (participants of cluster initiatives) to the investment market (Risn, Vertakova, & Trusova, 2018).

### ***Proposals for the formation and development of the digital economy***

The analysis of the modern world experience, as well as the results of our study, makes it possible to formulate priorities aimed at the formation of the innovative digital economy:

- 1) implementation of public policy aimed at building public confidence in the digital technologies, active use of the Internet resources, Internet platforms, circulation use of electronic payment systems, etc.;
- 2) formation and scaling of the digital platforms for the main spheres of economy; introduction of electronic document circulation in the public domain (including municipal bodies and budgetary institutions);
- 3) full coverage of the country by the Internet, including expansion of the Internet access via smartphones;
- 4) increase of IT specialists training; implementation of innovation in education and human resources programmes;
- 5) support for the creation and development of business oriented at the digital economy, provision of targeted support in guarantees' provision on bank loans, compensation of costs for patenting, formation of the trust investment funds, support through the public procurement mechanisms, etc.;
- 6) application of the tax incentive mechanisms (reduction of basic tax rates, provision of tax incentives, delay of tax payments, benefits of insurance payments) to support small and medium-sized businesses in the digital economy; development of tax incentives for small and medium-sized enterprises when they are merged into a cluster which is not in the list of clusters approved by the Government of the Russian Federation; public regulation of the innovative development, taking into account the indicative nature of the tax instruments;
- 7) stimulation of markets for the innovative products; demand for innovative goods and services of native production, including newly formed clusters; implementation of the active policy for import substitution of machinery and technology by regulating the level of prices with taxes. Creation of the state demand for the scientific developments and goods as state orders from newly formed clusters through tax exemption and reinvestment of released funds in the innovative and technological development;
- 8) improving of legislative framework for regulating activities of enterprises involved in the digital economy, including solving problems of the regulatory and legal consolidation of such enterprises for the Tax Code purposes; organizations as members of the cluster; the methods of tax stimulation of cluster members;
- 9) development of the cyber-security systems; improvement of the legislation regarding the cyber-crime control, creation of a specialized protection unit in law enforcement agencies (Volkova, Plotnikov, & Rukinov, 2018);
- 10) interaction with the countries with a high level of the digitalization; promoting the digital security among all actors in the global digital economy.

Increase of the national producers' competitiveness is in focus of the government actions of the digital economy strategy development. Promotion of the investments in the development of new technologies, knowledge-intensive industries; increased commercialization of university research developments are among the main directions of the economic policy.

Russia's Government will make structural reforms in terms of creating the integrated digital environment by 2024. Legislation on the digital technologies is being developed, the digital infrastructure is being modernized, practices of the digital technologies in the economy and public

administration are being introduced, and emphasis is being placed on the training of the qualified specialists.

## 5. Conclusion

Digital economy is a new type of economic relations that includes progressive technologies, especially the digital ones, and is used to improve the efficiency of public production.

The government economic policy has a great potential in regulating the innovative development and contains a wide range of mechanisms to support the creation and development of the digital oriented business.

There exists a significant gap in the digital development between the different countries of the world. This difference is in the lack of coherent relations between the level of the digital development, industrial sector, innovative capacity and the human resources.

The government economic policy aimed at creating the fully digital environment should be pursued taking into account peculiarities, specifics of the organization and economy functioning, as well as the type of the country's state structure.

The use of the tax policy instruments to stimulate innovation promotes investments in certain areas and industries and has greater budgetary impact.

The use of foreign experience in the implementation of the effective and adequate economic policies will contribute to the improvement of competitiveness, economic growth and national security growth of the country.

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