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PRIORITIES OF RUSSIA'S INDUSTRIAL POLICY AMID THE CHALLENGES OF FOURTH INDUSTRIAL REVOLUTION. PART 1

The article substantiates that industrial policy is not only a coordinating component for various types of state policies, but also a platform for building the economic policy of the state. It categorizes the studies in five areas of the traditional approach to understanding the industrial policy and in three areas of its new understanding. The author emphasizes that it would be right to interpret the achievement of the "image of a 'good economy'" as a new goal of industrial policy. The article substantiates why the "standard projects" of regional industrial policy should be avoided. It identifies new features of the fourth industrial revolution. The author establishes that the fundamental difference of this revolution is harmonization and integration of a large number of scientific disciplines, which imposes new requirements to formation of priorities for both the federal and regional industrial policies. The author shows that a particular feature of the fourth industrial revolution is the emergence of digital economy. The article analyzes its progress in Russia compared to developed countries. It catalogs the studies on identifying the readiness of Russian companies for digital economy. The author analyzes the development of information and communication technology as a key factor for the formation of digital economy in its regional dimension. This allowed to identify a high differentiation of regional indicators describing the development of information and communication technology (ranging from 1.5 to more than 300 times). The findings point out that the development of information and communication technologies allow to describe the Middle Urals as a region that leads virtually by all indicators in this area not only in the Ural Federal District, but also in Russia as a whole. The author notes growing importance of new business models as the most significant innovation during the fourth industrial revolution, which defines new subjects and objects of industrial policy. The results of these studies can be used to adjust regional socio-economic development strategies and laws on industrial policy.

Keywords: industrial policy, image of good economy, technological innovations, Industry 4.0, fourth industrial revolution, priorities, digital economy, regional dimension of information and communication technology, Middle Urals, new business models

Introduction

Socio-economic policy of any state is based on a variety of policies that define the development of various activities, including economic, social, investment, innovation, environmental, institutional, and other activities. The coordination of above policies in order to successfully implement social and economic policy can be the most effective when it is based on the formation and implementation of industrial policy [1, 2]. But industrial policy is not only a coordinating component for various state policies, but also a platform that serves as a basis for building the economic policy of the state (Fig. 1).

Industrial Policy as a Subject of Discussions

The issue of industrial policy has been debated for decades. There are continuing active discussions on the very concept of industrial policy and tools of its implementation, the use of which can lead to the desired outcome. In the current environment, there is a change in the understanding of what the subject and object of industrial policy are. The systematization of multiple studies in this area allows to identify five main groups which can combine traditional, widely used concepts of industrial policy (Fig. 2).

In the first group of interpretations, the industrial policy is viewed as a tool for creating the conditions for economic growth and better competitiveness. The concepts of industrial policy, which can be combined into the second group, are related to defining the impact of the government on the operation of markets. The third group in the traditional understanding of industrial policy combines its supporters from the point of view of defining impact on the development of sectors with high value added. The fourth group brings together the experts focusing on the need to combine support for the development of new industries with the simultaneous modernization of traditional production facilities. The most common interpretation of industrial policy defines it as a policy associated with a

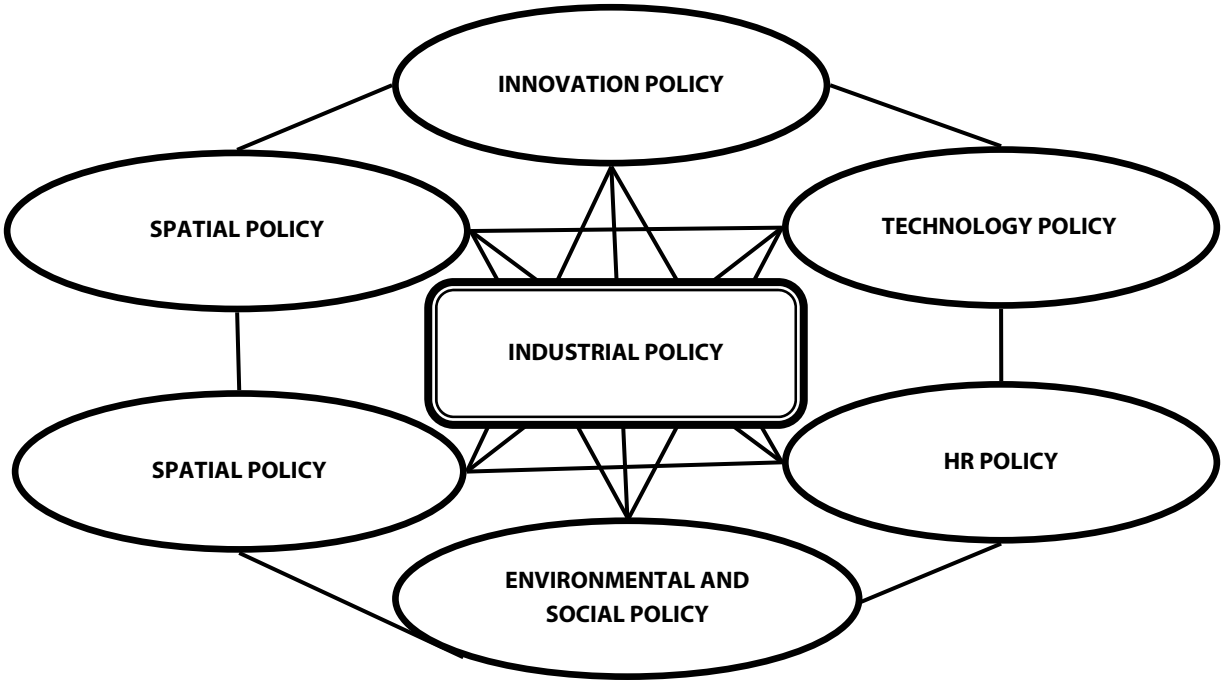

Fig. 1. *Coordinating role of industrial policy*

Traditional approach	• Creating conditions for economic growth and higher competitiveness (V. M. Polterovich, V. V. Popov, 2006; J. Beath) [3, 4]; • Influence of the government (ruling elite) on the markets (G. Federico) [5]; • Supporting the development of sectors with high value added (Yu. Simachev, 2017) [6, p.12]; • Developing new and modernizing traditional industries (V. E. Dementyev, 2013) [7]; • Target-oriented change in the structure of the economy (B.V. Kuznetsov, Yu. V. Simachev, 2014, A. I. Tatarkin and O. A. Romanova, 2007, D. Rodrik, 2004, C. Warwick, 2013) [1, 2, 8, 9]
New understanding	• Realization of comparative advantages within the framework of "new structural economy" of J. Lin [10]; • Image of "good economy" (E. Phelps, 2009, B. Cutter, 2016) [11-13]; • "Good economy" as the foundation of industrial policy (V. L. Tambovtsev, 2017) [14].

Fig. 2. *Traditional and new approach to understanding the purpose of industrial policy*

target-oriented change in the structure of the economy. The supporters of this approach are combined in the fifth group.

We view this concept as the one that reflects to the fullest extent the substance of industrial policy. We consider it expedient to note that, amid high uncertainty and geopolitical transformations, the understanding of industrial policy as an evolving system of relations between the state, business entities, and civil society institutions can become a common theoretical foundation for all groups of above interpretations. Such system of relations emerges in reference to the formation of structurally balanced, competitive economy (industrial policy in the broad sense) or structurally balanced, competitive industry (industrial policy in the narrow sense). At the same time, it is important to mention that industrial policy in the narrow sense may relate not only to industry, but also to any other sector of the economy.

The first decades of the 21st century were marked by the appearance of works that offer a new understanding of industrial policy. The need to implement it from other positions is substantiated within the framework of "New Structural Economics" of J. Lin [10]. In this case, the industrial policy is viewed as a tool for implementing the comparative advantages of economies in different countries. At the same time, it is argued that a positive outcome can be achieved only if the government priorities reflect structural changes based on specific assets of the economy that allows certain sectors to have

advantages in global markets. Since these advantages are internal, there is a need for special efforts by the state to identify them. Materializing the identified advantages also requires the participation of the state, which is implemented through the state industrial policy.

We also see the development of another approach to understanding industrial policy based on the notion of a "good economy." This includes the differentiation between the notions of "good economy" of state entities and elites of individual countries, the population of the country and its government. Some authors view the so-called "new entrepreneurial economy" as a good economy. For example, in the works of B. Cutter, the high quality of such good economy is ensured by at least 2 % annual productivity growth with an overall economic growth of 3 %, stable increase of labor, high level of new business creation, unemployment at the level of 5–6 %, and self-employment at about 30 % [11]. According to B. Cutter, a new entrepreneurial economy can emerge by the mid-2030s.

There is an interpretation of a good economy as an economy that ensures a good life for people, at the core of which is the opportunity of successful state development and implementation of multi-faceted prospects in such state with the mandatory creation of conditions for personal development. The parameters of such economy were described by E. Phelps, who wrote that a good economy should ensure challenge, engagement, mastery, discovery, and development for people [12, 13]. The image of a good economy as the basis of a new industrial policy was convincingly substantiated by V. Tambovtsev [14].

As noted above, it is advisable to consider the industrial policy as a basic one in the system of socio-economic development policies. In our view, the industrial policy should focus not only on target-oriented changes in the structure of economic activity and provision of increasing human needs, but also on the formation of a structurally balanced humanitarian and technological space, which is a prerequisite for building a "good economy."

A particular role in the formation of successful industrial policy for Russia is played by its regional component. It is the regional industrial policy that allows to use the investment and industrial potential of the regions to address the issues of effective economic restructuring not only in a certain area, but also in Russia in general. Highly uneven development of Russia's territory, small population density in vast areas of Siberia and Russian Far East, unacceptably high gap (28 times) between the subjects of the Russian Federation in terms of per capita GDP makes this issue relevant not only for reducing the socio-economic inequality of regions, but also for aligning long-term development goals stated in the federal and regional laws on industrial policy [15]. To develop an adequate industrial policy, it is necessary to consider the characteristics of scientific and technological, industrial, resource, and human potential of the regions. It is known that, when analyzing the effects resulting from the implementation of Washington consensus principles for developing countries, D. Rodrik came to the conclusion that it was impossible to create a set of industrial policy measures that would be applicable to any country. He demonstrated that any reforms should be adapted to specific circumstances, and "standard projects" of reforms are no longer relevant in the current environment. This understanding has become almost a mantra for development economics and financial experts, as well as for international agencies [16, p. 190]. When it comes to inadmissibility of "standard projects" of regional industrial policy, the relevance of this provision fully applies to Russia.

There were significant changes in the priorities, regulatory and legal framework for preparation and implementation of industrial policy in Russia, starting from the priorities stated in the Decree of the Russian President "On the Concept of Industrial Policy of Russia" (1997), priorities identified in a number of draft laws on industrial policy in Russia, and up to adoption of the Federal Law "On Industrial Policy in the Russian Federation" (2014). The rapidly changing economic and geopolitical situation, as well as the emergence of new trends in technological development require the adjustment of priorities, the achievement of which is the goal of both the federal and regional industrial policies.

Today, there is no doubt that technological innovations are key drivers of economic growth, as emphasized in the so-called "new industrial policy" [17, p. 466]. The radical renewal of technological production base is the time of unpredictable events called "black swans" that cause severe effects [18]. In these circumstances, the industrial policy can be an effective tool for preparing a resource maneuver for improving the readiness to face unpredictable challenges. Such unpredictable challenges are largely determined by the complexity of upcoming transformations and ambiguity of their effects that alter our views of the world we live in.

Fourth Industrial Revolution

Today, the world is at the beginnings of a new, fourth industrial revolution. Currently, there is no conclusive assessment of the type of revolution being experienced by the world community. There are two main schools of thought—the first one asserts that today's world is living the third industrial revolution, while the second one claims that radical systemic changes in all principal human activities indicate the onset of a new, fourth industrial revolution. In 2011, an initiative called "Industry 4.0: The Internet of Things on Its Way to the Fourth Industrial Revolution" was presented at the Hannover Fair. In 2016, Klaus Schwab, the founder and long-standing president (since 1971) of the World Economic Forum in Davos, published his widely known book "The Fourth Industrial Revolution" [19]. The book convincingly demonstrated that the modern world is the world of upcoming fourth industrial revolution, which will fundamentally change the way we live, work, and communicate with each other. It substantiated the reality of technology breakthroughs in all vital areas and showed that the Industry 4.0 is not just an implemented stage on the way to the fourth industrial revolution, but the fourth industrial revolution itself. According to Klaus Schwab, the foundation of the third industrial revolution was provided by digital revolution, which began in the 1960s and was the basis for the emergence of digital economy in the modern world. New features that point out the onset of the fourth industrial revolution are shown in Fig. 3.

The fundamental difference of the fourth industrial revolution is the harmonization and integration of a large number of scientific disciplines, synthesis of resulting technologies, and their interaction in physical, digital, and biological systems.

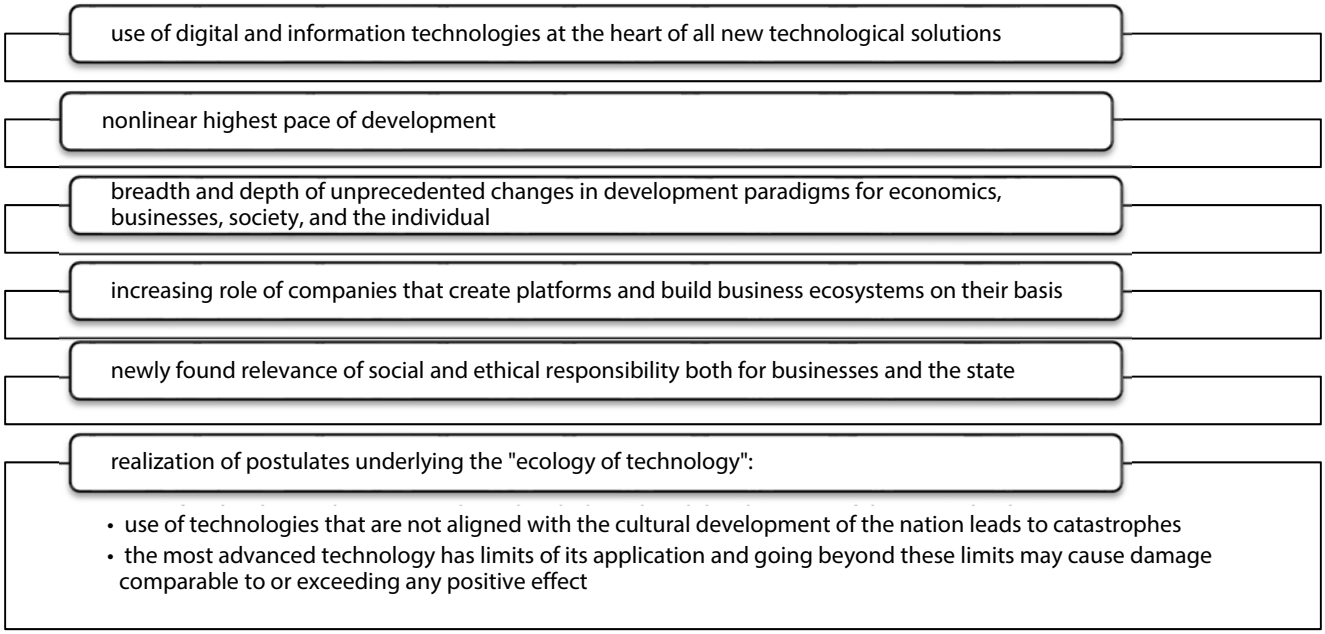

Fig. 3. *New features of the fourth industrial revolution*

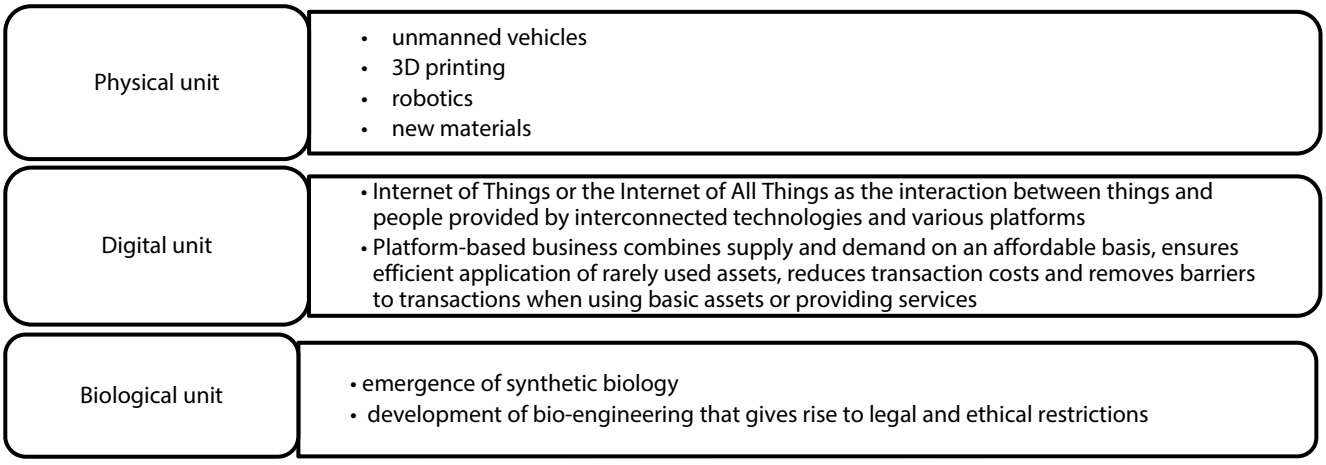

Fig. 4. *Megatrends of technological development (prepared on the basis: Schwab, K. (2016). Chetvertaya promyshlennaya revolyutsiya [The Fourth Industrial Revolution]. Moscow, Eksmo, 208. (in Russ.)*

Translation

Megatrends of technological development in the era of the fourth industrial revolution can be combined into three units (physical, digital, and biological) (Fig. 4).

A fundamentally new feature of these megatrends is the fact that digital technology, as the foundations of all new technology solutions, penetrates into all units, which allows to use the achievements of the digital revolutions as a basis for the development of digital economy.

Digital Economy

A distinctive feature of the fourth industrial revolution is the emergence and rapid development of digital economy in the developed countries. At the meeting of the Council for Strategic Development and Priority Projects held in July 2017, the Russian President said that the development of digital economy is currently the most important issue for Russia's national security and competitiveness of Russian companies. The emergence of such phenomenon as "digital economy" is caused by the rapid development of information and communication technologies. The very concept of "digital economy" is not yet adequately defined, although it was included in a number of Russian legislative documents. In particular, the Strategy for the Development of Information Society in Russia for 2017–2030 defines the digital economy as "an activity in which the key factors of production are data presented in digital form, while their processing and use in large volumes can substantially improve the efficiency, quality, and productivity in various types of production during storage, sale, delivery, and consumption of goods and services" [1].

A somewhat clarified concept of digital economy was provided in the program "The Digital Economy of the Russian Federation." In this case, the digital economy is defined as "an economic activity, in which the key factor of production are data in digital form and which contributes to emergence of the information space by taking into account the needs of citizens and society in obtaining high-quality and reliable information, development of information infrastructure of the Russian Federation, creation and application of Russian information and telecommunication technologies, as well as the formation of a new technological foundation for social and economic environment" [2].

The subject matter of the digital economy remains a debatable issue. In this discussion, a fundamental matter is the understanding of digital economy as either an economy of exclusively digital objects, or an economy of the subsequent phase in the development of traditional industries and formation of new industries based on the intensified use of the Internet and digital technology. The second interpretation of the subject matter of the digital economy seems to be more legitimate. The systematization of studies in this area allows us to propose an understanding of the digital economy as a particular economic paradigm or data economy, in which the data are created, communicated, and stored. The analysis of these data provides the basis for management decisions that allow to improve the efficiency of the economy, efficiency of administration and, therefore, the quality of life of people.

For the development of Russian economy, its "digitalization" acquires a special importance both in terms of addressing the issues of development and implementation of information technology, and in terms of using the achievements of digital revolution as a tool for modernizing the real sector of the economy, creating conditions for the emergence of new, advanced industrial technologies not yet created in Russia. It is the development of 3D printing, robotics, unmanned transport, artificial intelligence, and other technologies that determine the emergence of the digital economy.

In accordance with the aforementioned Program, the basic principles of digital economy should be first of all applied in such areas as health care, public administration, and "smart city." The state plays a significant role in these areas of very high social importance. However, if only these priorities are declared, this Program will not allow to bring the existing industry in Russia to a new technological level of development, and it will not be able to make a fundamental impact on modernizing the real sector of the economy. In our view, the Program for the Development of Digital Economy should also include the priorities related to the formation of the new technological basis for the economic environment, which is written in the very definition of the concept of digital economy stipulated by the Program.

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[1] The Strategy for the Development of Information Society in the Russian Federation for 2017–2030. Approved by the Decree of the President of the Russian Federation No. 203 of May 9, 2017. Retrieved from: http://docs.cntd.ru/document/420397755 (date of access: March 15, 2018).

[2] The Digital Economy of the Russian Federation, a program approved by the Order of the Government of the Russian Federation No.1632-r of July 28, 2017. Retrieved from: http://static.government.ru/media/files/9gFM4FHj4PsB79I5v7yLVuPgu4bvR7M0.pdf (date of access: March 15, 2018).

According to the Minister of Industry and Trade of the Russian Federation D. Manturov, a systemic transition to a digital model of development can ensure, by 2024, the growth of labor productivity in processing industry by more than 30 % and increase the contribution of sectors based on advanced manufacturing technologies to the country's GDP up to 15 %. The main areas, in which the development of digital economy in the real sector of the economy is expected, include the design of modern equipment, materials for ensuring the "digitalization," design of complex software and intelligent control systems. These areas should be a priority in terms of supporting the industrial policy.

Information and Communication Technologies as a Factor for Building Digital Economy

The development of information and communication technologies (ICT) reduces the impact of many traditional obstacles, especially those related to time and distance. This allows to achieve higher levels of development, but the benefits of digital revolution embodied in the emerging digital economy are very unevenly distributed between developed and developing countries (Fig. 5)

This situation, which was initially described as the "digital divide," is currently more often referred to as the "digital abyss." As shown in Fig. 5, the share of digital economy in Russia's GDP is less than 4 %, but the growth of Russian digital economy already exceeds its GDP growth. In 2011–2015, the GDP of Russia grew by 7 %, while its digital economy increased by 59 % over the same period. In other words, its growth rate exceeded by 8.5 times the growth rate for the economy in general. Of course, there is a low base effect, but when it comes to GDP growth in this period, the digital economy provided virtually a quarter (24 %) of the total gain in the GDP of Russia.

As previously noted, the "digitalization" of the economy is considered from two standpoints — in terms of the output of goods and services directly generated by the digital economy, and in terms of consumption of products and services of the digital economy in various sectors of the economy. Moreover, the level of technological development of a country is described primarily by the output of

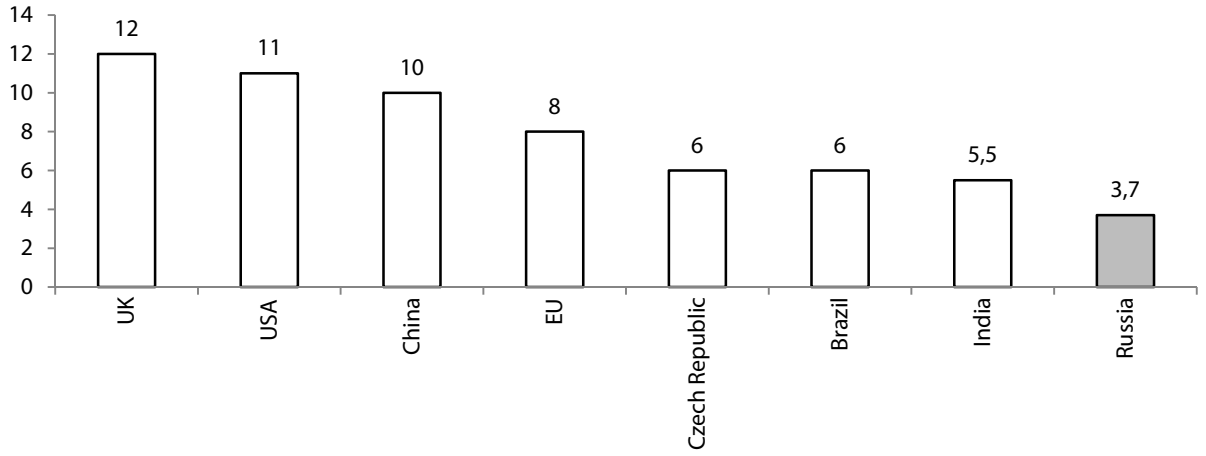

Fig. 5. *Share of digital economy in GDP of different countries, % (source: Grammatchikov (2017, July 17–23). Tsifrovaya realnost [Digital Reality]. Ekspert [Expert], 29(1038). (in Russ.)*

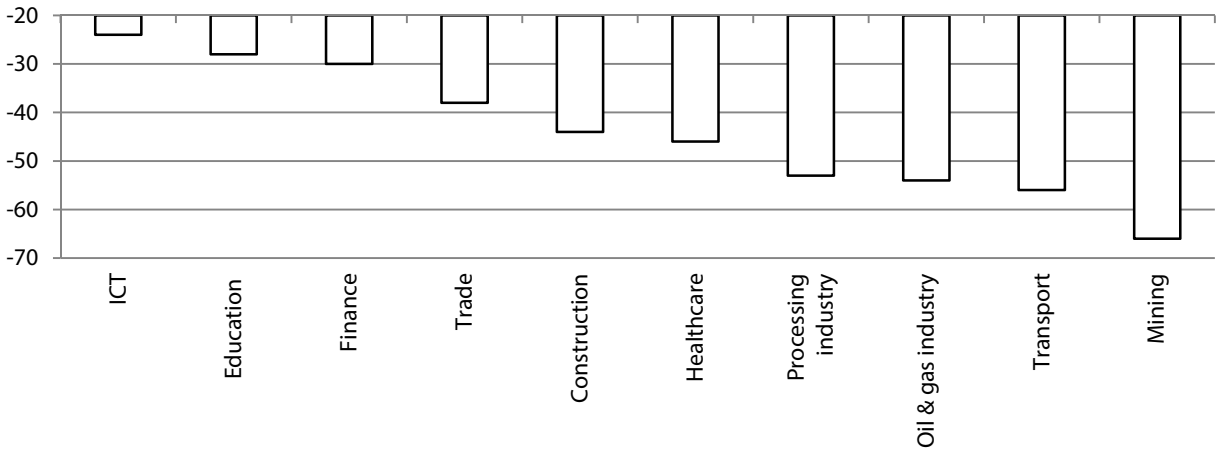

Fig. 6. *The difference in the digitalization of economic sectors in the Russian Federation and leading EU countries, % (source: Grammatchikov (2017, July 17–23). Tsifrovaya realnost [Digital Reality]. Ekspert [Expert], 29(1038). (in Russ.)*

digital products and services in that country rather than by their consumption. But even in terms of consumption of products and services of the digital economy in various sectors of the economy, Russia is far behind the EU (Fig. 6).

As shown in Fig. 6, the minimum lag of Russia (less than 30 %) in the digitalization of economic sectors is reported in information and communication technologies (ICT) and education. The largest lag (more than 50 %) is observed in such economic activities as mining, oil and gas industry, and processing industry (which are the sectors of specialization for the Urals). However, overall, the situation in Russia is not so dismal. For example, the International Telecommunication Union publishes annually its ICT Development Index for all countries. This index is based on 11 indicators grouped into three sub-indices. The first one describes access to ICT and considers five infrastructure indicators. The second one reflects the use of ICT and includes three indicators related to the number of Internet users, availability of fixed broadband and mobile broadband, while the third sub-index takes into account the skills and ability of the public to use ICT. This is an indirect indicator that considers the adult literacy, number of students in higher and secondary education systems. In 2002, Russia ranked 52nd out of 154 countries in the integrated ICT Development Index. But, in 2015, it already ranked 45th out of 167 countries. Moreover, the sub-index of skills was evaluated by experts at 9.04 points (out of 10); sub-index of ICT access, at 7.24 points; however, a lower score in sub-index of use (5.52 points) prevented Russia from getting a more decent rank [20, p. 23].

A study on the readiness of Russian companies for digital economy was conducted in 2017 by the experts of SKOLKOVO Foundation and NAFI Research Center. This center was founded in 2006 and specializes in the study of public opinion, business climate, consumer behavior, etc. The survey of 500 entrepreneurs from traditional industries (representative sample) and 120 entrepreneurs among high-tech residents of SKOLKOVO conducted by these organizations demonstrated that most Russian companies were not ready for the digital economy [23]. The low level of readiness for the transition to a digital model of development was shown not only by the companies from traditional sectors, but also by high-tech startups. Of 100 possible points describing the complete readiness to operate in the digital economy, the companies from traditional sectors scored 36 points, while the high-tech startups scored 49 points. The main challenge limiting the ability to operate in the new environment is the low level of human capital development (7 points for traditional companies and 20 points for high-tech startups). This results from inadequate attention to providing the personnel with training in the area of digital technology. In H1 2017, only 8 % of companies from traditional sectors of the economy implemented centralized training programs in the area of digital technology while, for high-tech startups, this figure was 33 %. A positive sign is the fact that most respondents (63 % in traditional businesses, 79 % in high-tech startups) have an online presence. At the same time, less than half of companies (28 % in traditional businesses, 47 % in high-tech startups) use digital channels of communication in instant messengers or have their own pages in social networks. The implementation of electronic document flow, which is used by more than 60 % of traditional companies and about 70 % of high-tech startups, is proceeding quite successfully. However, about 10 % of high-tech startups and more than 17 % of traditional companies still have fully paper-based document flow. A severe problem that reduces the readiness of Russian companies to operate in the digital economy is largely determined by the psychology of entrepreneurs who are simply not ready to work under emerging new business models[3]. This makes it necessary that the federal and regional programs emphasize the formation and support for entrepreneurship culture in the context of digital economy development.

Regional Dimension of Information and Communication Technology Development

The "digital abyss" is characteristic not only for developed and developing countries; it can be also clearly manifested within one country. As it was noted above, the development of ICT is a factor that determines the formation of digital economy. Our analysis of statistical indicators describing the Russian regions in this area shows that Russia demonstrates a high level of differentiation of regional indicators characterizing the development of ICT. The difference between these indicators ranges from 1.5 to more than 300 times. The greatest difference is observed in the provision of Russian regions with fixed broadband Internet access per 100 people (314 times).

[3] Bolshinstvo rossiyskikh kompaniy ne gotovy k tsifrovoy ekonomike. Eksperty. [Most Russian companies are not ready for digital economy, say experts]. Eurasia Daily (EADaily). Retrieved from: https://eadaily.com/ru/news/2017/10/16/bolshinstvo-rossiyskih-kompaniy-ne-gotovy-k-cifrovoy-ekonomike-eksperty (date of access: March 4, 2018).

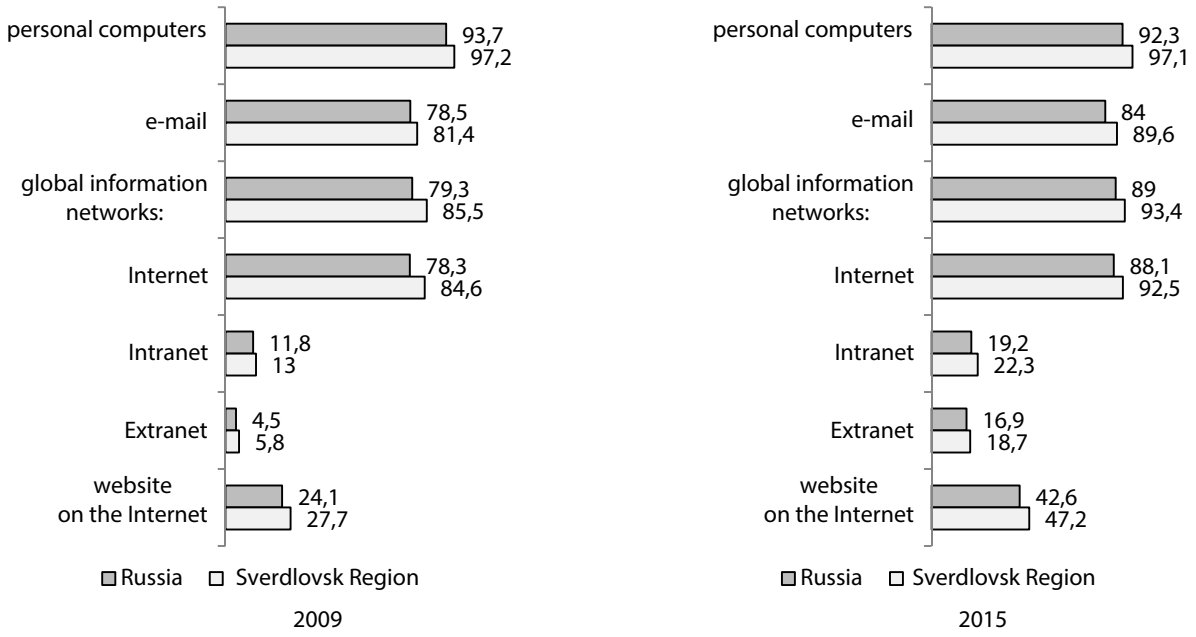

Fig. 7. *The share of organizations using information and communication technologies (% of total surveyed organizations)*

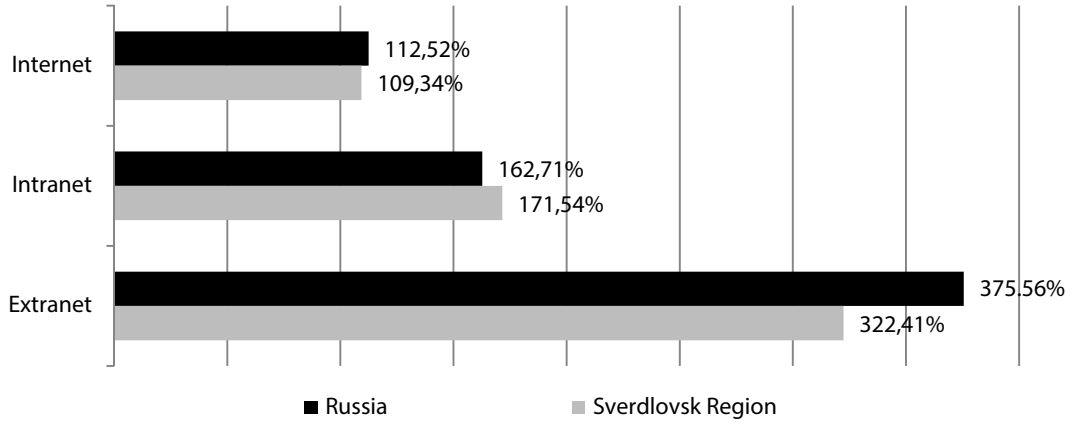

Fig. 8. *The growth of global information networks, %, 2015/2009*

We analyzed the rankings of subjects of the Russian Federation by the main indicators of ICT development based on figures from "Information Society: Development Trends in the Subjects of the Russian Federation," a statistical compilation [21]. It is difficult to unequivocally describe the position of the Ural Federal District (UFD) among other federal districts in terms of ICT development. UFD shares 2nd and 3d ranks by the number of broadband Internet subscribers per 100 people. But it is ranked only 6th by the number of mobile Internet subscribers per 100 people. The analysis of statistical data for Sverdlovsk Region, an area with a fairly high scientific and technological potential, showed that the indicators of the Middle Urals clearly describe it as a region that leads in almost all areas of ICT development not only in the Ural Federal District, but also in Russia as a whole.

As shown in Fig. 7, both in 2009 and 2015, Sverdlovsk Region had higher figures of ICT use in organizations. But if we analyze the data on the growth in individual areas of ICT use, the situation will somewhat change (Fig. 8).

In 2009–2015, the Internet growth in Russia as a whole was 112.5 %, while in Sverdlovsk Region this figure was only 109.3 %. A similar situation was observed in such a fast-growing segment of global information networks as extranet (a tool that allows the company to communicate with external users without allowing them to access internal corporate information). In Russia as a whole, its growth for the period from 2009 to 2015 was 375.5 %, while in Sverdlovsk Region this figure was only 322.4 %. But the pace of development in Intranet (use of the Internet for corporate purposes), another key area for the formation of global information networks, in Sverdlovsk Region exceeded the similar figure for Russia as a whole (171.5 and 162.7 %, respectively).

Table

The use of special software in Russia and Sverdlovsk Region (as % of the number of companies with available special software)

Usage area of software tools	2009		2013		2015	
	Russia	Sverdlovsk Region	Russia	Sverdlovsk Region	Russia	Sverdlovsk Region
Scientific research	3	4	3.1	4.6	3.9	5.7
Designing	11	14.9	11.9	15.3	11	14.1
Management of automated production facilities and/or individual technical means and technological processes	15.2	20.5	18.1	22.9	15.1	20.7
Resolution of organizational, management, and economic problems	60.6	66.5	59.6	72	52.3	65.6
Management of goods (works, services) procurement	—	—	38.6	47.6	38.4	47
Management of goods (works, services) sales	—	—	22.9	29.5	21.9	29.2
Financial settlements in electronic form	60.3	68.1	61.3	74	55.1	66.8
Access to databases through global information networks, including the Internet	23.7	27.8	30.8	35.6	31.5	38.2
Electronic reference and legal systems	56.2	68.8	55.4	70.2	52.3	65.1
CRM, ERP, SCM	6.4	8.5	10.4	15.2	15.4	20.2
Desktop publishing systems	5.4	6.2	5.7	7.2	5.3	6
Training programs	17.3	19.4	18.2	22.6	14.3	18

The analysis of information and communication activities in Sverdlovsk Region over the period of 2009–2015 reveals the growing availability of all types of software in the organizations (see Table).

In all areas involving the use of these tools, the figures for Sverdlovsk Region significantly exceed the average figures for Russia as a whole. In particular, if in 2015 the special software tools for the management of automated production facilities or individual technical means and technological processes were used only in 15.1 % of companies in Russia as a whole (out of total number of companies having special software tools), the share of such companies in Sverdlovsk Region was about 21 %. It is especially important to mention the growth in the following types of use of special software tools by the organizations of Sverdlovsk Region in 2009–2015:

— 1.4 times increase in the number of organizations using special software tools for scientific research, and

— 2.4 times increase in the number of organizations using complex systems to manage various processes of economic activities (CRM, ERP, SCM).

These data confirm that the automation of business processes in the enterprises of Sverdlovsk Region reached a qualitatively new level. During the analyzed period, there were substantial changes in the structure of expenses made by the organizations of Sverdlovsk Region on information and communication technologies. For example, the share of costs incurred by the organizations on the acquisition of computers and office equipment, telecommunications equipment, and software decreased from 21 % in 2009 to 14.8 % in 2015, which can obviously be interpreted as the indication that the companies achieved the currently required level of equipment provision. However, during this period, there was a 4-fold increase in the share of costs incurred on employee training in the area of ICT development and use. But the share of these costs in the total costs incurred by the organizations of Sverdlovsk Region on ICT remains insignificant (an increase from 0.4 % in 2009 to 1.5 % in 2015). Naturally, during the formation of digital economy, the costs of employee training associated with the development of new technologies should be substantially higher. It may be noted that, according to the head of Sberbank of Russia H. Gref, this organization trained its employees once every three years, but now this is done three times a year.

A special role played by better quality of education and new professional skills can be explained by the increasing importance of new business models, which are defined by some researchers as

the most significant innovations during the onset of the fourth industrial revolution. New business models take advantage of digital, physical, and biological units in order to search for new forms of process optimization. These models determine not only the need to change professional skills. They require to build a corporate culture that would be consistent with the newly emerging requirements for labor qualifications. There is an increasing need to retain the most professionally trained staff. In these circumstances, the efforts of companies based on a concept implying a focus on highly qualified personnel, i.e., the concept of "talentism," become a priority [19, p. 73]. This becomes one of the key factors for improving the competitiveness of industrial corporations at the time of the fourth industrial revolution as the individual abilities of employees become the dominant form of shaping their strategic advantages.

Conclusion

The conducted studies revealed that industrial policy remains the topic of numerous discussions, but its interpretation increasingly involves a new understanding of industrial policy as a platform used for building the economic policy of the state. The foundation of such policy is to build and implement the image of a "good economy," a prerequisite for which is the establishment of a structurally balanced humanitarian and technological space. The analysis of a regional component of industrial policy leads to the conclusion that it is impossible to create such set of industrial policy measures that would be applicable in any Russian region. It was established that the new trends of global technological development associated with the onset of the fourth industrial revolution and phenomenon of the digital economy make a special impact on the change of industrial policy priorities. In these circumstances, we see the emergence of new business models, changes in the subjects and objects of industrial policy, increasing focus on highly skilled labor, and new requirements to leaders of new industrial policy. This aspect of the study will be discussed in Part 2 of the article.

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