

II International Scientific Conference GCPMED 2019
"Global Challenges and Prospects of the Modern Economic Development"

SOCIO-ECONOMIC PROCESSES DIGITALIZATION: NEW
OPPORTUNITIES AND CHALLENGES

Yu. V. Atanasovska (a), I. V. Balynin (b)*, Yu. S. Pinkovetskaia (c)
*Corresponding author

- (a) International Slavic University "G.R. Derzhavin", 772220, Skopje, Republic of Macedonia, julia929@mail.ru
(b) Financial University under the Government of the Russian Federation, 125167, Leningrad prospect 49, Moscow, Russian Federation, igorbalynin@mail.ru
(c) Ulyanovsk State University, 432017, Leo Tolstoy street 42, Ulyanovsk, Russian Federation, judy54@yandex.ru

Abstract

The author identifies the consequences of digitization of social and economic processes that is of particular relevance in the context of the adopted decree of the government, having approved directions of digital economy development in the Russian Federation (regulatory, personnel and education, the formation of research competences and technical capacities, information structure, information security). It is noted that there are new opportunities for more rapid decision-making, to accelerate the resolution of issues and problems (it can create services that facilitate citizens to receive state and municipal services, reducing document flow, rapid banking operations, openness of information to different groups of users, based on their desires and priorities, etc.), but at the same time, they contribute to the formation of new challenges (the growth of cyber fraud, leakage of confidential information, distribution of false information, etc.). Special attention is paid to more active information technologies applications in state and municipal management, which should be linked directly with automation of most processes (especially those related to interaction and communication with population) and to ensure the protection and conservation of information through implementation of contemporary information products and applications. The results of the research can be used in the educational process in higher education institutions, as well as in practice: executive and legislative authorities to make decisions on the modernization of socio-economic processes, economic entities-to form economic security strategies taking into account current trends, financial analysts and trends in the modernization of economic entities in the digital economy.

2357-1330 © 2020 Published by European Publisher.

Keywords: Digital economy, digitalization of the economy, economic growth, scientific and technological progress, industry 4.0.



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

The relevance of the research is provided by scientific and technological progress impact on modern socio-economic phenomena and processes, which makes its imprint on both the national economy and the world economy. In July 2017, the government of the Russian Federation is known to have adopted a special program for the development of the digital economy. Thus, in particular, it provided the directions given in Fig.01.

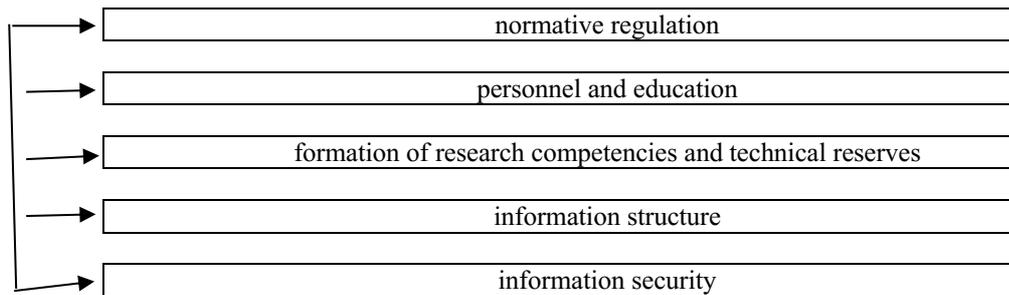


Figure 01. Directions of digital economy development in the Russian Federation.

Source: authors based on data from the program (Programme “Digital economy of the Russian Federation” approved Government Order Russian Federation dated July 28, 2017 No. 1632-r, 2017).

2. Problem Statement

The analysis of the scientific literature showed a wide attention to the issues of digitalization of various socio-economic processes. So, in particular, some of them are devoted to a detailed study of the content and principles of the concept of "industry 4.0" (Roldan, Crespo, Martin-Barrio, Pena-Tapia, & Barrientos, 2019; Diez-Olivan, Del Ser, Galar, & Sierra, 2019; Madsen, 2019) and others are directly related to the introduction of digitalization in education (Hartong, 2019; Barabanova, Pavlenko, Ilyina, Zueva, & Saitov, 2019), including in higher education (Tomte, Fosslund, Aamodt, & Degn, 2019). A number of studies are devoted to the study of the introduction of modern digital technologies on the example of certain public legal entities – for example, the United States (Spindler, 2019), Croatia (Tomljanovic, Grubisic, & Kamenkovic, 2019), Germany (Genz, Janser, & Lehmer, 2019; Spindler, 2019). Digital technologies and quantitative approaches were presented in some works (McDonald, Catacora, De Koning, & Middleton, 2016). The consequences of digitization of social and economic processes that is of particular relevance in the context of the adopted decree of the government of the Russian Federation, having approved directions of digital economy development in the Russian Federation should be identified.

3. Research Questions

In this context, it is important to note that the digitalization of the economy, according to the authors, has both advantages and disadvantages.

So, in particular, the advantages of socio-economic phenomena digitalization are:

1. Efficiency and convenience of rendering commercial, state and municipal services.

2. Various economic operations acceleration (both in the commercial sector and in public as well municipal administration).

3. Fast payments without visiting specialized institutions for the provision of such services, including the use of Internet banking and mobile banking.

4. Information openness to different groups of users, based on their desires and priorities.

5. Providing the ability to convey absolutely any information to millions (and even billions) of people around the world in an extremely short period of time.

6. Obtaining the necessary information (both text and numerical data, as well as various media materials) in absolutely any direction in the language of interest.

7. Possibility of high-tech medical operations that can save millions of lives.

8. Household management simplification, including the use of smart home technologies.

9. Increased competition in the labor market, which provide a growth of skills of employees, especially those engaged in the provision of services.

4. Purpose of the Study

The purpose of this research is to identify the consequences of socio-economic processes digitalization in the article. Advantages and disadvantages of these new opportunities should be considered as well. The reasons of new challenges formation are stated.

5. Research Methods

To solve the stated problem a set of complementary research methods is used: theoretical: (analysis of philosophical, sociological, social economic literature on the problem under consideration; analysis of documentation on, data from the Federal Treasury); empirical (study of documents, questionnaires, observation, interviews, testing, self-assessment, study of products). (Programme “Digital economy of the Russian Federation”..., 2017).

6. Findings

All of the above mentioned positive aspects of economy digitalization can be considered from another side:

1. In particular, economic operations acceleration and increased openness of information lead to a serious increase in cyber fraud, including related to the theft of funds from citizens and legal entities, which, of course, harms the economic development of both a single state and the world economy as a whole.

According to statistics of the Prosecutor General's office in 2018 (General Prosecutor's Office of the RF, 2018), law enforcement agencies of the Russian Federation registered 174,674 crimes committed using information and telecommunication technologies or in the field of computer information. Financial organizations losses from cyber attacks have increased significantly (in particular, from each incident exceeds 900 thousand dollars).

2. Due to increase of information transparency a number of individuals interprets it wrong consciously or due to lack of knowledge, which is especially dangerous in the presence of publicity such actions against the huge number of listeners, because it leads to a decrease legal and financial literacy level.

3. Active use of the Internet by citizens is provided by constant a large amount of personal data transferring, the storage of which is carried out by various operators, that creates the potential possibilities for both unfair use of this information (for example, advertising purposes) and even committing criminal acts.

4. Insufficient legal regulation and organizational work lead to abuses in self-control of the quality of posted information, including audio and media materials, which can cause serious damage to potential users (especially persons of preschool and school age) and become a serious obstacle in ensuring the highest level of young generation education.

5. The application of various products of scientific and technological progress in everyday life on a permanent basis, which can replace the active brain activity partially or completely, leads to degradation and reduction of the intellectual level of the person that ultimately harms not only the individual and the surrounding citizens, but also state socio-economic development.

6. Active introduction of information and telecommunication technologies and other achievements of scientific and technological progress will provide automation of labor process that, eventually, become the reason of reduction of citizens and emergence of unemployment. In this regard, it is necessary to develop a set of measures to create new jobs and to start a technological development of the Russian state.

In connection with the above mentioned, it is recommended to make more active use of modern achievements of scientific and technological progress by all economic subjects. In particular, households should:

- register on the portal of state and municipal services (which significantly reduces the cost (including time) for their provision);
- to be interested in sources formations and directions of expenditure of budgetary funds;
- to use special applications that help to control their expenses in the context of personal finance management (improving the quality of personal finance management is especially important in the context of reducing real incomes of the population (fig. 02));

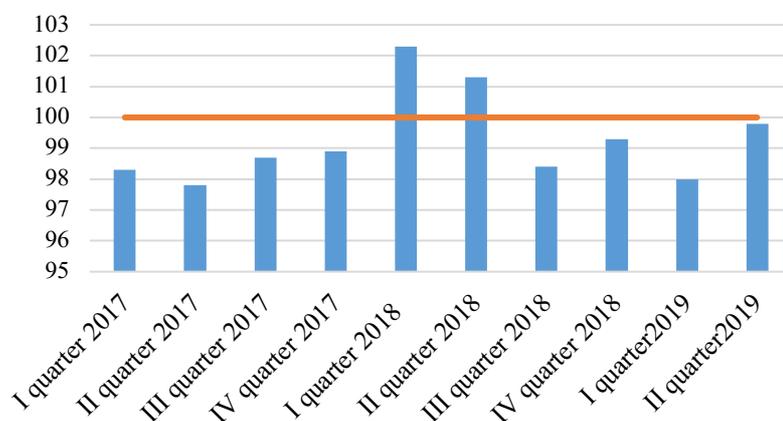


Figure 02. Real incomes of the population, as a percentage of the same period of the previous year
 Source: authors based on Rosstat data (Federal State Statistics Service, 2019)

- persons who have problems with the development of modern technologies should attend courses conducted by public authorities and local self-government.

The study of the above mentioned problems in the context of ensuring the formation of a new responsible tax culture financial literacy of citizens deserves a special attention, which requires a range of measures, including the modernisation of curricula and activity of the Federal tax service among the younger generation using all potential positive manifestations of digitalization of economic processes in Russia and the world.

Commercial and non-profit organizations should not only be engaged in the digital field, but also contribute to the digital education of citizens. In particular, master classes should be held for schoolchildren, students and all citizens on issues related to the introduction of digital technologies in their process.

It should be understood that further strengthening and subsequent digitalization of almost all socio-economic processes is inevitable. In this regard, it is necessary not to impede its development, but to use the possible benefits, countering new emerging challenges. It is necessary to build risk management based on the principles of continuity, responsibility, integrity and creativity.

There are opportunities to improve the list and practice of using the tools of the portal of state and municipal services. So, in particular, it is necessary to provide an opportunity for citizens to download information about their education (at all levels), passed training courses and retraining. Also for schoolchildren, students and postgraduates the opportunity to download information about their achievements can be provided (it may be useful in future when applying for the next education level or appointment of advanced and nominal scholarships).

Special attention should be paid to the development of proposals for state authorities and local self-government, on the one hand, actively introduce the achievements of scientific-technical progress (in particular, connected with introduction of modern technologies in the educational process, health, social service and since, and increasing the availability of information for citizens about rendering of state and municipal services, social protection measures) and, on the other hand, the development and use of programs of protection against hacker threats and attacks (this proposal due to the frequent Denial of Service ddos-attack on the servers of the official websites of the relevant bodies of state power and local self-government) (Kaspersky, 2018).

Also, in the case of countries with a Federal structure, the Federal authorities are recommended:

- to hold competitions on an annual basis among the subjects of the Federation and municipalities on openness and accessibility of information for the population and the business community with the encouragement of public legal entities-winners (for example, by providing additional inter-budgetary transfers not related to the transfer of powers);

- to carry out formation (including taking into account results of the carried-out competitions) of codes of the best practices of transparency and availability of public authorities and local self-government (including in the Internet);

- to develop model sites indicating the minimum allowable set of information for interested users.

7. Conclusion

In conclusion, it should be noted it is possible to overcome the challenges of the digital economy, thereby contributing to the achievement of the goals for the socio-economic development of the Russian Federation by combining the efforts of the state, commercial and non-profit organizations, public authorities and local governments, civil society institutions and population.

References

- Barabanova, M., Pavlenko, S., Ilyina, O., Zueva, V., & Saitov, A. (2019). Digitalization Russian education. *Indo American Journal of Pharmaceutical Sciences*, 6(4), 7029-7033. <https://doi.org/10.5281/zenodo.2628849>
- Diez-Olivan, A., Del Ser, J., Galar, D., & Sierra, B. (2019). Data fusion and machine learning for industrial prognosis: Trends and perspectives towards Industry 4.0. *Information Fusion*, 50, 92-111. <https://doi.org/10.1016/j.inffus.2018.10.005>
- Federal State Statistics Service (2019). Standard of living. Retrieved from: <https://www.gks.ru/folder/13397> Accessed: 12.10.19. [in Rus.].
- General Prosecutor's Office of the RF (2018). Crimes situation in Russia for period january-february 2018. Retrieved from: https://genproc.gov.ru/upload/iblock/be9/sbornik_12_2018.pdf Accessed: 12.10.2019. [in Rus.].
- Genz, S., Janser, M., & Lehmer, F. (2019). The impact of investments in new digital technologies on wages - worker-level evidence from Germany. *Journal of Economics and Statistics*, 239(3), 483-521. <https://doi.org/10.1515/jbnst-2017-0161>
- Hartong, S. (2019). Bildung 4.0? Kritische Überlegungen zur Digitalisierung von Bildung als erziehungswissenschaftliches Forschungsfeld. *Zeitschrift für Pädagogik*, 3, 424-444. <https://doi.org/10.3262/ZP1903424> [in German].
- Kaspersky (2018). Kaspersky security bulletin: Threat predictions for 2019. Retrieved from: <https://securelist.ru/kaspersky-security-bulletin-threat-predictions-for-2019/92782/> Accessed: 12.10.2019. [in Rus.].
- Madsen, D. O. (2019). The emergence and rise of Industry 4.0 viewed through the lens of management fashion theory. *Administrative Sciences, MDPI, Open Access Journal*, 9(3), 1-25. <https://doi.org/10.3390/admsci9030071>
- McDonald, J., Catacora, A., De Koning, S., & Middleton, E. (2016). Digital technologies and quantitative approaches to recording rock art in the Great Basin, USA. *Journal of archaeological science: Reports*, 10, 917-930. <https://doi.org/10.1016/j.jasrep.2016.03.052>
- Programme "Digital economy of Russian Federation" approved Government Order Russian Federation dated July 28, 2017 No. 1632-r (2017). Retrieved from: <http://static.government.ru/media/files/9gFM4FHj4PsB79I5v7yLVuPgu4bvR7M0.pdf> Accessed: 15.11.2019. [in Rus.].
- Roldan, J. J., Crespo, E., Martin-Barrio, A., Pena-Tapia, E., & Barrientos, A. (2019). A training system for Industry 4.0 operators in complex assemblies based on virtual reality and process mining. *Robotics and Computer-Integrated Manufacturing*, 59, 305-316. <https://doi.org/10.1016/j.rcim.2019.05.004>
- Spindler, G. (2019). Digitalization and corporate law - A view from Germany. *European Company and Financial Law Review*, 16, 1-2, 106-148. <https://doi.org/10.1515/ecfr-2019-0009>
- Tomljanovic, M., Grubisic, Z., & Kamenkovic, S. (2019). Deindustrialization and implementation of industry 4.0 - Case of the Republic of Croatia. *Journal of Central Banking Theory and Practice*, 8(3), 133-160. <https://doi.org/10.2478/jcbtp-2019-0028>
- Tomte, C. E., Fossland, T., Aamodt, P. O., & Degn, L. (2019). Digitalisation in higher education: Mapping institutional approaches for teaching and learning. *Quality in Higher Education*, 25(1), 98-114. <https://doi.org/10.1080/13538322.2019.1603611>