

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

**SOCIAL PROBLEMS AND ACHIEVEMENTS OF THE DIGITAL
ECONOMY DEVELOPMENT**

A. V. Guryanova (a)*, A. V. Timofeev (b), V. A. Tikhonov (c)

*Corresponding author

(a) Samara State University of Economics, 443090, Soviet Army str., 141, Samara, Russia,
annaguryanov@yandex.ru

(b) Samara State University of Economics, 443090, Soviet Army str., 141, Samara, Russia, timofeev_av@list.ru

(c) Samara State Technical University, 443001, Molodogvardeyskaya str., 244, Samara, Russia, dokvat@bk.ru

Abstract

The research is devoted to the problems of the digital economy development and the social consequences of this process. The subject of special consideration is an impact of the digital economy on nature, social life and human consciousness. The problems of genetic engineering and DNA manipulations, of mass unemployment and information overloads need additional attention in this field. The benefits and challenges of robotics are also discussed. The specificity of digital education is considered in comparison with the traditional educational system. The advantages of digital education such as a low cost and an ability to learn at a convenient time are pointed. The leading role of the digital economy in the global challenges solution is also a topic of discussion. It has to do with the deficit of water and food resources and many others. The creation of new materials with a help of the digital technologies is recognized as moving the global market forward. The conclusion of the research is that the founders of the digital economy and the creators of innovations must be ready to predict all possible effects and consequences (both positive and negative) of their development. They are responsible for the technologies and their correct application. Digital technology is considered as a basis of the future society, but it should be safe and top-quality. Only in this case a decent human future becomes possible.

2357-1330 © 2020 Published by European Publisher.

Keywords: Digital economy, human, technology, robotics, nature, digital education.



1. Introduction

The modern world existence is impossible without digitization of all spheres of social life, without well-functioning of computer and network technology. Modern human goes far beyond his basic bio-social frameworks and turns himself into the so-called «homo digital». His normal and effective functioning is directly related to the Internet, communication in social networks, the ability of self-development, working and educating in the online format. Without having an access to the Internet, the human feels isolated from the surrounding world, «falling out the Net» (National Telecommunications and Information Administration, 1999), abandoned and even lonely. This can be applied to every field of social life. Computer technology, networking and many other digital innovations are widely used here. This provides the progress of modern society and social development.

2. Problem Statement

The digital economy is able to solve many problems relating to employment, education, health care, payment for various services and even buying things and products. The fact is that the global network gives modern people a unique chance to study when and where they want (Loginova, Akimova, Shcherbin, & Zaitseva, 2019). Today it's already possible to be treated with innovative medical devices and technologies, to earn money without leaving home, to travel with a help of virtual reality resources and so on. New digital opportunities have a strong influence on the lives of different categories of people, including socially disadvantaged layers of population.

The digital platform has become a real basis of the modern business development. It allows reducing costs, increasing productivity of entrepreneurial actions, sharing experience with foreign partners and companies, for example, in the form of video communications with them. It's obvious that using digital technologies is a real uptrend of nowadays and the condition of successful development in future. Digital innovations are the main factor of modern economic development (Keshelava, 2017). They offer the newest ways of the global problems solution and form an active position of business, civil society and even individuals in the economic welfare of the country.

Without any doubt, the digital economy plays a leading role in the modern world. But we shouldn't forget about the serious problems and the negative consequences of its implementation (Guryanova, Smotrova, Makhovikov, & Koychubaev, 2020). It's one of the most important challenges we are facing nowadays. An unproductive experience must be examined thoroughly and discussed in order to be solved in the nearest future.

3. Research Questions

Research questions of the present research are the same:

- What are the main social achievements of the digital economy?
- What are the social problems caused by its intensive development?
- What's the strategic impact of the digital economy on nature, human and society?

How does it affect the different spheres of social life – modern business and commercial activity, production, consumption, education?

4. Purpose of the Study

The purpose of the research is to analyse the problems and achievements of the digital economy development, including the following aspects:

- the impact of the digital economy on nature, social life and human consciousness;
- the role of the digital economy in solving global problems;
- the problems and advantages of robotics;
- the specificity of the digital education.

5. Research Methods

The following methods are used in the research:

- methods of analysis and synthesis to consider specific problems and achievements of the digital economy development and to summarize consequences of their impact on modern humans and environment;
- method of description to characterize the modern digital stage of social development in different areas of its implementation;
- comparative method to describe the difference between the usual and the digital social conditions, traditional and digital education, human potential and robotics, etc.;
- dialectical method to identify the direction and dynamics of human development, to consider the problems arising on this way;
- prognostic method to outline the ways of solving global problems in the field of nature, society and human interactions in the digital epoch.

6. Findings

6.1. The impact of digital economy on social life and human consciousness

Despite the fact that the digital economy plays a leading role in the modern world, we shouldn't forget about its negative impact on social life and nature (Guryanova, Smotrova, Makhovikov, & Koychubaev, 2020). On the one hand digitalization of the economy has caused the emergence of new professions; but on the other – a number of professional employments have become unnecessary in the progressive digital world. Millions of people have lost their work. We are talking about all those who can't adapt themselves to using of new technologies and to meet to the demands of the digital economy. The last one has increased social inequality because of the digital divide between the high-skilled specialists getting great salaries and those who aren't in demand and continue to perform their traditional professional duties.

The fact is that digital economy has destroyed many professions, but it has also created a number of the new ones, expanding the labor market (Shestakov, Noskov, Tikhonov, & Astafeva, 2017). Every day we visit various websites, groups and blogs. We use social networks and applications created by IT specialists and web designers. Such popular platforms as YouTube and Instagram give us a chance to create our own channels and blogs, and then to construct our personal brands and business models on

their basis. The Internet provides an unlimited number of opportunities including freelancing that is very popular today. As we have already mentioned, many professions have lost their relevance in the modern world, the other ones have become inaccessible to humans with a low social status. In contrast, freelancing allows everyone to do what he likes, for example, to develop personal brands through various social networks. You can work your own hours and get paid as much as you want.

It's also necessary to mention the impact of the digital economy on the psychological state of modern humans: today many people feel lonely and even irritable without the Internet access. They suffer from information overloads and psychological tiredness after the long hours they spend working or playing behind the screen of computers and different gadgets. However, the digital economy has entered deeply into life and consciousness of modern humans (Zubarev, 2017). The intensive using of social networks develops all kinds of gadget-mania and pathological gambling. And when we awake, first of all we pick up and turn on our smartphones.

6.2. The problems and advantages of robotics

Special attention should be paid to robotics which is constantly displacing human potential from many spheres of social life. Not very long ago such ordinary things as an alarm clock, a wall calendar, a radio, a mirror and a notebook were habitual for us. Today they all have changed their usual location and moved inside our smartphones. The mirror is replaced by the camera, the paper notebook – by the «Notes» section, etc. The modern world is full of robots! In every house you can see a robot vacuum-cleaner that works according to its program and doesn't need human control. It's inconvenient to wash windows on the top floors of high-rise buildings, so the robot window-cleaner can help us to do this difficult work fast and safe. There are special cash desks in the new supermarkets where customers can pay themselves for their purchases, without any help from the cashier. Perhaps, this can lead to the disappearance of this profession in the nearest future. As a result, many people will lose their job. But in general, technical devices with remote controls or self-driving make the life of modern humans easier, as well as the new generations of cars and drones. In the modern world robotics is a basis of an efficient production: robots are able to perform maximum tasks in minimum time. This helps manufacturers to save money on human labor.

On the one hand, new technologies make our lives more comfortable. They allow us to relax from the routine work, such as home or office cleaning or repeating the same physical actions many times. But, on the other hand, the further development of robotics will lead to disappearance of a great number of modern jobs in demand and to increase of mass unemployment. The predictable result of these processes is an economic crisis or even stagnation of the economy (Betelin, 2018).

6.3. The specificity of digital education

Some words must be said about specificity of the digital education. Its basic principles are informatization and digitalization which are based on the using of the latest ICT technologies for educational purposes (Pecherskaya, Averina, Kochetckova, Chupina, & Akimova, 2016). Modern educational practice is widely included by various online courses, webinars, video tutorials, distance

education opportunities. Digital education has the following advantages over its traditional education form:

- possibility of gaining knowledge at a convenient time;
- opportunity of studying in a quiet, comfortable atmosphere;
- ability to study without leaving home;
- relatively low cost;
- communicating with native speakers in the process of learning foreign languages;
- combining the training with professional work and other activities.

Digital education gives us a chance to develop our creative potential (Pecherskaya, Averina, Kamaletdinov, Tretyakova, & Magomadova, 2016). Every human has an opportunity to make his own blog, project, website, application, etc. Modern teachers prefer performing presentations as a universal educational method that stimulates the creative development of the student, helps to identify his latent skills and talents (Pecherskaya, Averina, & Kozhevnikova, 2018). Digital education isn't only convenient and creative by its form; it makes possible to communicate online with the leading teachers, masters of their craft, native speakers, etc. The new education system gives people an opportunity to get out of the routine, to engage in training in interesting and exciting forms, to visualize an object of studying (in contrast to the simple memorizing of traditional textbooks).

6.4. The impact of digital economy on nature

The impact of digital economy on nature should also be considered: creation of new technologies in the field of genetic engineering gives us useful knowledge, but using animals as test-subjects often causes their death. Creation of different varieties of plants has a negative impact not only on the plants themselves, but also on the other living organisms. The rapid development of digital technologies leads to disappearance of natural environment and a large-scale distribution of artificially bred plants and animal hybrids. Modern supermarkets offer us strange vegetables and fruits of unnatural sizes and colours that cost more expensive and look like more beautiful than the usual ones. Their selling is a successful marketing ploy that brings big profits. In the streets we can often see tiny dogs and cats. They are also the result of the modern genetic technologies' application. They are in great demand, so they are sold profitably and move the modern market forward.

Strictly speaking, genetic manipulations with plants and animals aren't an invention of the digital society. It has been practiced by humanity throughout its history. However, development of genetic engineering has brought a new impulse to this type of research activity. Today it's possible to develop special organisms by building new DNA sequences. Perhaps, we are facing a great scientific revolution that will turn life into information in such a way that it can be written and rewritten just like a computer code. Scientists are already developing seaweeds that can release biofuels and use DNA to encode gigabytes of data. Over the next 30 years, synthetic biology will be able to create artificial organisms that can detect toxins, to make biofuels and medicaments from industrial waste. At the same time, synthetic biology poses serious risks including creation of artificial biological weapons (Russian Federation government, 2017).

6.5. The role of digital economy in solving global problems

It should be specially noted that digitalization of the economy can help to solve global problems such as the problem of water and food resources deficit. With a help of the modern technologies people have learned to create clean drinking water from its sea, melt and rain forms and in large scales. This allows to provide many arid areas with drinking water. Automated production of genetically modified crops can increase yields and allow making more food while using less land. Marketing managers offer a variety of ideas that can be sold profitably: black roses, red melons, yellow watermelons, mint-flavoured chips and many other strange things. In order to earn much money manufacturers appeal to engineers who develop new species and combinations of flavours, create new food dyes, preservatives and additives. On the one hand, consumer demand is growing as well as the manufacturer's profit. But the nature suffers much and the human health is spoiling too.

Another important achievement of the digital economy development is creation of the new materials using all over the world and moving the world market forward. For example, the creation of optical fibre has improved the quality of information signals tenfold. A wide spread of 3D printing in the modern world allows users to make an identical model of any object in a short time. This innovation is an excellent assistant in such professional areas as design, building, architecture, engineering and many others (Guryanova, Khafiyatullina, Petinova, Frolov, & Makhovikov, 2020). Manufacturers have learned to get plastic from sugarcane. In the nearest future this technology will be used by Lego-company because of its safety for the environment. Modern scientists are developing a new material that is planning to be used for sewing clothes and as a data storage device at the same time. Their aim is to give up the breakable and volumetric electronic devices and to provide more comfortable way of self-identification and using digital services. Other scientists believe that with a help of proper processing cellulose can become stronger than steel. But its weight will be much less (about 80%). If this scenery really comes true, everything around us will become wooden and first of all – the main components of transport (cars, buses, etc.). The most important thing the leaders of the digital economy must always remember is the environmental safety of their production. It's really important for the modern world full of artificial things and even organisms.

7. Conclusion

Modern science is intensively developing. This process touches the sphere of economy among the others. The modern world has become really digital! We are surrounded by artificial objects produced with a help of the digital economy. We are using the achievements of digitalization in the educational process. We even eat the products created by digital technologies. The consciousness of modern humans is basically similar to the consciousness of electronic computers: «Less feeling, more numbers». Direction of the modern world's development requires a human to save a fast speed, to adapt innovations and at the same time to predict, to think, to consider, to analyze, etc. Being outline for some reasons is the hardest trial for the modern human. He feels himself unfortunate and helpless, standing out of the real life, uninteresting to anyone. And this is a real psychological problem that pressures constantly the human

consciousness: to survive we must be as strong and fast as a machine; those who are weak or unable to confront the information overloads aren't in demand.

The digital economy constantly requires the creation of something qualitatively new. But it should be a strict line between the novelty itself and the excess that affects both people and natural environment. This problem is quite serious because of the many negative consequences it's entailed. Today there is a great number of genetically modified products on the shelves of the modern supermarkets – much more than the natural ones. The new medicaments created by innovative technologies cause the newest diseases they are unable treat. Our smartphones distance us from the real world in favor of the virtual reality.

The founders of the digital economy and the creators of innovations should be ready to predict all possible effects and consequences (both positive and negative) of their development. They are responsible for the technologies and their correct application. Certainly, digital technology is a basis of the future society, but the humans don't need a world ruled by the soulless robots and machines. First of all, technologies should be safe for humans and have a high quality. Only in this case a decent human future becomes possible.

References

- Betelin, V. B. (2018). Challenges and opportunities in forming a digital economy in Russia. *Bulletin of the Russian Academy of Sciences*, 88(1), 1-6.
- Guryanova, A., Khafiyatullina, E., Petinova, M., Frolov, V., & Makhovikov, A. (2020). Technological prerequisites and humanitarian consequences of ubiquitous computing and networking. In E.G. Popkova, B.S. Sergi (Eds.), *Digital Economy: Complexity and Variety vs. Rationality. Lecture Notes in Networks and Systems*, 87. (pp. 1040-1047). Cham: Springer.
- Guryanova, A. V., Smotrova, I. V., Makhovikov, A. E., & Koychubaev, A. S. (2020). Socio-ethical problems of the digital economy: Challenges and risks. In S. Ashmarina, A. Mesquita, M. Vochozka (Eds.), *Digital Transformation of the Economy: Challenges, Trends and New Opportunities. Advances in Intelligent Systems and Computing*, 908. (pp. 92-106). Cham: Springer.
- Keshelava, A. V. (Ed). (2017). *Introduction to digital economy*. Moscow: VNIIGeosystems [in Rus.].
- Loginova, S. L., Akimova, O. B., Shcherbin, M. D., & Zaitseva, E. V. (2019). The specifics of the digital economy in higher education. In V. Mantulenko (Ed.), *Proceedings of International Scientific Conference "Global Challenges and Prospects of the Modern Economic Development". The European Proceedings of Social & Behavioural Science*, 57. (pp.1-12). London: Future Academy.
- National Telecommunications and Information Administration (1999). Falling through the net: Defining the digital divide, national telecommunications & information administration, U.S. Department of Commerce, Washington, D.C. Retrieved from: <http://www.ntia.doc.gov/report/1999/falling-through-net-defining-digital-divide> Accessed: 09.10.2019.
- Pecherskaya, E. P., Averina, L. V., & Kozhevnikova, S. A. (2018). ERP Implementation challenge: Case-study of the Russian Federation. *Astra Salvensis*, 6, 411-423.
- Pecherskaya, E. P., Averina, L. V., Kamaletdinov, Yu. A., Tretyakova, N. V., & Magomadova, T. L. (2016). Assessment of critical success factors transformation in ERP projects. *IJME-Mathematics Education*, 11(7), 2608-2625.
- Pecherskaya, E. P., Averina, L. V., Kochetckova, N. V., Chupina, V. A., & Akimova, O. B. (2016). Methodology of project managers' competency formation in CPE. *IJME-Mathematics Education*, 11(8), 3066-3075.
- Russian Federation government (2017). Program of digital economy development in Russia before 2035 Retrieved from: <http://innclub.info/wp-content/uploads/2017/05/strategy.pdf> Accessed: 09.10.2019. [in Rus.].
- Shestakov, A. A., Noskov, E. G., Tikhonov, V. A., & Astafeva, N. S. (2017). Economic behavior and the issue of rationality. In E.G. Popkova (Ed.), *Russia and the European Union. Contributions to Economics*. (pp. 327-332). Cham: Springer.
- Zubarev, A. E. (2017). The digital economy as expression of regularities in the new economy development. *Bulletin of Pacific national University*, 4(47), 177-184 [in Rus.].