

GCPMED 2020
Global Challenges and Prospects of the Modern Economic
Development

DIGITAL GLOBALIZATION AS A RESULT OF THE MODERN
ECONOMIC AND TECHNOLOGICAL DEVELOPMENT

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

*Corresponding author

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

(b) Samara State Technical University, Molodogvardeyskaya Str., 244, Samara, Russia, shestakovalex@yandex.ru

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

Abstract

It's obvious in modern conditions that the process of globalization has already got a digital character. For this reason it can be called «digital globalization». Digital globalization is a new step of the global world development. It entails radical changes in the structure of making business and the number of its permanent participants. It leads to the growth of economic opportunities, including trans-border relations and communications. Digital transformations are based on the growing consumer and investor expectations. They also reflect the prospect of increasing economic and social benefits. Digital globalization depends on both digital economy and digital technology development. Technological prerequisites for the digital globalization are the achievements of the fourth industrial revolution, such as robotics and the Internet of things, cloud and cognitive technologies, virtual and augmented realities, nano- and biotechnology, etc. Digital globalization is closely connected to a number of economic innovations. Today financial flows, traditional ways of trading and changing goods are reduced much at the global level due to the COVID-19 pandemic. On the contrast, the global economic relations of the digital format are significantly expanding. This becomes possible because of the artificial intelligence technology development, the global data and information flows attraction, the digital platforms and e-commerce successful using.

2357-1330 © 2021 Published by European Publisher.

Keywords: Artificial intelligence, digital economy, digital globalization, digital platforms, e-commerce



1. Introduction

The concept of «globalization» is usually used to describe an increasing interdependence of the world economies and cultures, the planetary communication of the world populations. It also implies trans-border exchange of goods and services, technologies and investment flows, human resources and information. During the last few centuries, the world's leading countries have developed and approved a number of models and schemes of the world-wide economic relations, communications and interactions. However, the concept of «globalization» has become very popular. At the end of the twentieth century, it was considered to be the basis of the modern life, worldview and the way of effective economic cooperation. At that time the world has got a really global character. Today there's no country able to isolate itself from the tendencies of the world economy development. All countries are necessarily involved into a global economic environment. For this reason the nature and character of modern globalization are radically changing. At the last time traditional trade of goods and financial flows are strongly reduced at the global level. This is due to the global crisis and the COVID-19 pandemic. But the global economic ties of the digital format are significantly increasing, on the contrast. This leads to the emergence of the so-called «digital globalization».

2. Problem Statement

The process of globalization has got a digital character in the twenty-first century. That's why it can be called «digital globalization». Digital globalization is a new stage of the global world development. It entails radical changes in the structure of business and the number of its participants. It also leads to the growth of economic opportunities, including trans-border relations and communications. Most digital transformations and innovations are based on the consumer and investor expectations. They also reflect the prospect of increasing economic and social benefits. Moreover, the benefits of digital globalization are useful not only for large corporations, but for the small business structures and companies.

3. Research Questions

The research questions of the present research are the following ones.

1. What is «digital globalization»?
2. What processes and aspects does it include?
3. What economic and technological prerequisites does the process of digital globalization cause?
4. What are the main results and consequences of the fourth industrial revolution?
5. What are the aim and essence of the artificial intelligence technologies development?
6. How do the flows of data and information influence the digital economy?
7. What is the role of e-commerce and digital platforms in the course of global digitalization?

4. Purpose of the Study

The purpose of the present study is to analyze digital globalization as a new stage of the global world development. The authors try to show how the process of globalization in the XXI century has got a digital

character. It depends a lot on the digital economy and the digital technology innovations. The first factor is the flows of data and information increasing. The second one is the digital economy significant impact. It had the effect of radical transformations in the structure of making business, changed the status of its participants. It also helped to form the new economic relations and trans-border communications. The main research hypothesis is the same: while the financial flows and the traditional ways of trading and changing goods are reducing at a global level due to the worldwide COVID-19 pandemic, global economic ties in the digital format are significantly expanding, on the contrast.

5. Research Methods

The present research considers digital globalization as a logical result of the modern economy and the modern technology development. Four main research methods are used to realize the purpose of the study. They are system method and the method of analysis, dialectic and comparative methods.

1. Method of analysis is used to find out the most important aspects and prerequisites of the digital globalization, including the achievements of the fourth industrial revolution, artificial intelligence technology, global data and information flows, digital platforms and e-commerce.

2. System method is used to form a full and complex vision of the analyzed phenomenon.

3. Dialectic method is used to prove the main hypothesis of the present research about the changing character of globalization in the modern times.

4. Comparative method is used to describe the previous (XX century) and the modern (XXI century) levels of globalization.

6. Findings

6.1. Results and consequences of the fourth industrial revolution

Today the world industry is changing much on a revolutionary scale. Taking in view variety, complexity, and dynamics of these changes, Schwab characterized them as a «fourth industrial revolution» (Schwab, 2017). This revolution differs much from all previous «revolutionary» forms that took place during the world history. Today, we can see impressive innovations and powerful technological breakthroughs in various fields of science, technology, and production. These are the Internet of things, virtual environment, robotics, and other technological areas, such as cognitive, cloud, bio-and nanotechnology (Guryanova et al., 2020). Of course, in the times of the three previous industrial revolutions, new technological solutions have also appeared. But the fourth one is fundamentally different: first of all, it has a higher speed of development and implementation of innovative technologies; secondly, it has a planetary, global scale of their distribution.

The fourth industrial revolution is also associated with the Industry 4.0. It is a reason of a real paradigm change, based on the decentralized and highly intellectualized way of production. This new revolution helps to improve, to reduce the cost and to speed up the production process, to transform the traditional models of interpersonal communication and interaction. For example, robotization leads to radical changes in the field of employment and foreign investment flows. Growing digital flows simplify the transfer of information and innovations all over the world. Therefore, everyone has a chance to participate in the global economic process.

6.2. Artificial intelligence technology development

Artificial intelligence technologies play an important role in the digital era. Their most intensive development takes place in five priority areas, such as computer vision and natural language technologies, robotized automatic processes, development of various virtual assistants, and expansion of machine learning. According to the forecasts given by McKinsey Global Institute (MGI), in 2030 artificial intelligence technologies will be able to stimulate greatly the growth of the global economic activity. So, it'll be almost 13 trillion dollars higher than in our days (McKinsey, 2018). This becomes possible due to the high degree of implementation of the artificial intelligence technologies and their increasing impact on the companies' productivity. They also influence many other factors and aspects related to the economic environment. Besides, artificial intelligence has an enormous development potential. In general, the modern artificial intelligence technologies are changing the whole way of making business, bringing it to the trans-border level, expanding opportunities of each interested person to participate in it.

6.3. The flows of data and information

In the process of the digital economy development an increase of the global data flows (the so-called «trans-border flows») take place. The volume of data is also increasing exponentially: since 2005 its trans-border capacity has grown by more than 45 times. Thus, digitalization has a strong impact on the global trade and investment, transforms economic sectors all over the world. Besides, digitalization improves the quality of human life in many areas: it makes their participation in public life more active, provides access to information resources, and introduces new technologies in the field of healthcare and education.

Data and information are the fundamental resources of modern civilization, which are often compared to «the new oil» of the XXI century (Makhovikov et al., 2021). The more information is accumulated, the better and more productive decisions can be made on its basis. And the machine learning technologies using for information processing become more and more perfect. This creates more opportunities for commercialization and monetization of the data sphere. The various data, ideas, technologies, and talents also affect investment decisions in the modern world. Over the last ten years data flows have contributed significantly at the global level (McKinsey, 2016). Today the data globalization has a greater impact on economic growth than the standard global trade in goods. Global data flows include phenomena of different orders, including the information itself, search methods and communication tools that help to receipt, to process and store it, various transactional and video resources, intra-firm traffic, and much more. Any kind of modern trans-border flows is supported and provided by this kind of technological resources. Besides, the global using of digital technologies is fundamentally changing the way organizations' work. They increase successfully their operational efficiency and reduce marketing costs by collecting and exchanging information and trading information resources.

6.4. Digital economy and e-commerce

The digital economy has a significant impact on the global investment structures, including foreign investments (UNCTAD, 2017). It opens up new opportunities, but at the same time it causes serious political problems, such as the need to overcome the digital divides (UNCTAD, 2016). In any case, the digital economy is an important basis for the digital globalization. The leading countries of the modern

digital transformations are well known. These are Singapore, the Netherlands, the United States, Germany, the United Kingdom, China, Ireland, Saudi Arabia, and the United Arab Emirates.

Modern China is one of the world's leading investors in the field of digital technologies. It has one of the most developed digital startup systems in the modern world. In general, the countries with the most developed economies are also the most interrelated at the global level. Along with that, data flows bring significant economic benefits to the countries located on the periphery of digitalization. Moreover, the growth and increasing of data and information flows take place practically everywhere. Another important factor of the digital economy development in the global world is e-commerce. Today a greater part of the retail market is relocated to the Network. For example, the network operations of the world-famous company Alibaba, which makes for about 80% of all online, retail sales in modern China. In fact, e-commerce is a fast, dynamically developing form of the new trade relations. It revolutionizes the sales strategies and changes radically the models of consumer behavior (Shestakov et al., 2017).

6.5. The role of the digital platforms

In the process of digitalization, the so-called «micro-transnational corporations» play an important role. They use the resources of leading digital platforms such as Alibaba or Amazon to connect with potential clients and customers from other countries. Moreover, using of digital platforms is increasingly practiced by representatives of the small startups, which get a unique opportunity to reach the global level of communications quickly. According to McKinsey (2018) Global Institute, more than 85% of modern technological startups belong to some areas of trans-border activity.

Using of digital platforms changes much the way of making business and the economy itself, that's becoming really trans-boarding. Digitalization significantly reduces the cost of international transaction and communication projects, helps the market system to get «transparent» character, increases its efficiency, and activates formation of the new global user communities. As a result, the business sector expands its potential customer base and uses effective methods to attract more interested clients. Global digital platforms in the modern society are successfully used for training, job search, personal networking, and talent demonstrating. Different international connections in social networks have more than 3 billion participants. Thus, digital platforms are an instrumental basis for the new era of globalization.

7. Conclusion

In conclusion, it should be noted that digital globalization is a fundamentally new stage of the global world evolution. Its formation depends on the two main factors connected one with another: the first one is the digital economy development, the second is the digital technology innovations. Technological prerequisites for the digital globalization are the achievements of the fourth industrial revolution, such as robotics and Internet of things, cloud and cognitive technologies, virtual and augmented realities, nano- and biotechnology, etc. Digital globalization is also connected with a number of modern economic innovations. The digital economy development changes the very structure of making business and the number of its permanent participants. It expands greatly economic opportunities, including establishment of cross-border relations and communications.

It's a fact of modern reality that financial flows, traditional ways of trading and changing goods are reduced much at the global level due to the COVID-19 pandemic (Guryanova et al., 2021). On the contrast, the global economic relations of the digital format are significantly expanding. This becomes possible because of the artificial intelligence technology development, the global data and information flows attraction, the digital platforms and e-commerce successful using.

References

- Guryanova, A.V., 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). Springer.
- Guryanova, A. V., Petinova, M. A., & Guryanov, N. Y. (2021). Socio-economic problems and perspectives of globalization in the context of coronavirus pandemic. In S. I. Ashmarina, J. Horák, J. Vrbka & P. Šuleř (Eds.), *Economic Systems in the New Era: Stable Systems in an Unstable World. Lecture Notes in Networks and Systems*, 160 (pp. 567-573). Springer.
- Makhovikov, A. E., Guryanova, A. V., & Stotskaya, T. G. (2021). «Knowledge» and «information» in the structure of modern rationality and human activity. In S. Ashmarina & V. Mantulenko (Eds.) *Current Achievements, Challenges and Digital Chances of Knowledge Based Economy. Lecture Notes in Networks and Systems*, 133 (pp. 27-34). Springer.
- McKinsey (2016). Digital globalization: The new era of global flows. <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-globalization-the-new-era-of-global-flows>
- McKinsey (2018). Notes from the frontier: Modeling the impact of AI on the world economy. <https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontier-modeling-the-impact-of-ai-on-the-world-economy>
- Schwab, K. (2017). *The fourth industrial revolution*. Crown Business.
- Shestakov, A., Noskov, E., Tikhonov, V., & Astafeva, N. (2017). Economic behavior and the issue of rationality. In E. G. Popkova (Ed.) *Russia and the European Union. Development and Perspectives. Contributions to Economics* (pp. 327-332). Springer.
- UNCTAD (2016). World investment report 2016. <https://www.worldbank.org/en/publication/wdr2016>
- UNCTAD (2017). World investment report 2017. https://unctad.org/system/files/official-document/wir2017_en.pdf