The COVID-19 pandemic and its consequences as a trigger for digital business development

Tamara N. Yudina

Doctor of Economics, Associate Professor, Senior Researcher
Lomonosov Moscow State University, Moscow, Russia
E-mail: orchidflower@list.ru

Ivan A. Aleshkovski

Candidate of Economic Sciences, Associate Professor
Lomonosov Moscow State University, Moscow, Russia
E-mail: aleshkovski@yandex.ru

Alexey M. Balashov

Candidate of Economic Sciences, Associate Professor
Novosibirsk State Pedagogical University, Novosibirsk, Russia
E-mail: ltha1@yandex.ru

Abstract. The COVID-19 pandemic and its consequences become a de facto catalyst for digitalization in all areas of the economy. Also they accelerate the development of digital business. Companies have to adapt their business processes and institutional infrastructure to work online. The results of the author's analysis were the provisions that the COVID-19 pandemic and its consequences contributed to the transition from targeted digital transformation of business models and business processes to their systemic digitalization. Digital transformation contributed to the formation and development of creative digital business, which relies on digital platforms and the widespread use of digital technologies, especially artificial intelligence. In modern conditions, transnational digital corporations of the United States and China act as drivers for the development both the digital economy and digital business. Corporations compete for leadership in the development of digital technologies, in particular, artificial intelligence use.

Keywords: digitalization, digital transformation, digital business, digital platforms, artificial intelligencee.

JEL codes: F01, F55

For citation: Yudina T. N. & Ivan A. Aleshkovski & Alexey M. Balashov (2022). The COVID-19 pandemic and its consequences as a trigger for digital business development. *Journal of regional and international competitiveness*, 3(4), 78. Retrieved from https://doi.org/10.52957/27821927_2022_4_60

DOI: 10.52957/27821927_2022_4_60

Introduction

Since the mid-twentieth century there has been a gradual increase in the role of knowledge and information, the developed countries made the transition to the information society and knowledge economy. Its characteristic feature was a linear progression of the innovation process stages within the boundaries of enterprises, while information communications performed an auxiliary function. The first decades of the 21st century demonstrate a dramatic growth of digital data, the consequence of which was the transition to a new stage of development, a digital civilization in which human life and activity are associated with the creation and use of information in its digital form.

The COVID-19 pandemic and its consequences became a trigger for digitalization in all spheres of public life and in all sectors of the economy. Companies and organizations had to rapidly adapt their business processes and their infrastructure to work in a remote format. The widespread introduction of digital technologies lead to the dramatic change in the relationship between consumers and producers, employees and employers, business, government, and society. At the same time, during the pandemic, some companies (airlines, travel companies, film industry, hotel business, non-food trade, and others) lost their positions,

while others (IT-companies, online sales and delivery of goods, pharmaceutical companies), on the contrary, significantly strengthened them.

The digital economy as an economy of the new technological order plays a significant role in ensuring global economic growth, increasing labor productivity in various sectors of the economy, contributing to the formation of new markets and industries, new ways of interaction between economic entities. National economies that are unable to adapt to the demands of the digital economy are condemned to a marginal position in the global economic system. Digitalization becomes the key to economic security and state sovereignty in the 21st century. In this regard, digital transformation is designated by the President of Russia as one of the national development goals until 2030. Insufficient attention to the digital component caused the slowdown of many industries in the Russian Federation.

Methods

The works of S. Freeman (2002) and B. Karlsson (2006) pay considerable attention to the issues of the digital economy, its innovative processes, and the influence of the institutional environment on digitalization. F. Cook and K. Laurentis (2010) study a platform approach to the digital economy. W. Boumal (2003) explores features of the development of entrepreneurship in the digital economy, paying special attention to the complementarity of large and small innovative companies. D. Klimanov describes the new culture of management in a digital economy (Klimanov & Tretyak, 2019).

The purpose of this study is to analyze the impact of the COVID-19 pandemic on the digitalization of business processes.

Research methodology is based on institutional and economic, interdisciplinary, empirical methods, on generalization, and on interpretation of new economic institutional concepts.

Results

The rapidly developing information technology plays an important role in various sectors of the economy. If, under the conditions of the closed innovation paradigm, only large enterprises with significant capital resources and a powerful research base could truly compete on the global market. The digital transformations help to reduce external transaction costs. Digitalization contributes to the transformation of both the global economy as a whole and most national economies They change not only the structure of the economy, but also lead to dramatic transformations of the business processes within individual corporations. Digitalization of business processes has, in turn, contributed to a reduction of the effective size of the enterprise. This trend is the most obvious for innovation-oriented companies, which contributes to their continuous development.

In the context of digitalization, one of the key challenges for entrepreneurship is to reduce transportation and logistics costs in order to increase their global competitiveness. Governments of the world's leading countries have a significant role in this process. For example, since 2016, the U.S. Department of Commerce has been implementing the "Digital Attaché" program, which aims to facilitate the access of American companies to the global online market and increase their exports through global e-commerce channels.

The rapid transformations in all sectors of the economy, driven by digitalization, have profoundly impacted entrepreneurship and business models. If previously high-tech projects were implemented by some large companies in clusters and technoparks, and covered a small number of participants, today priority concerns with the development of innovative ecosystems and platform-based innovations. It integrates a variety of knowledge bases and technologies, and attracts a wide range of users. Each new member adds value to the platform, promoting a network effect.

A digital platform is a high-tech business model that facilitates the exchange of information, goods, and services between two or more participants. From an institutional point of view, the digital platform is an intermediary institution. The use of a digital platform reduces the length of the chain of intermediaries between the manufacturer and the consumer. Also it helps to reduce transaction costs in the interaction of platform participants compared to the same interaction outside the platform.

Digital platforms are a new form of business organization in various spheres of economic activity (e-commerce – Amazon, Alibaba, Ozon: passenger transportation – Uber, Didi, YandexGo; hotel booking

– booking.com, hotels.com, ostrovok.ru, etc.). Digital platforms reveal new opportunities to stimulate innovation processes, implement partnerships between producers and consumers, facilitate interaction of science, education and innovation, and foster new markets and industries in the digital economy.

Currently, digital platforms and the platform ecosystems they form are transforming entire industries and various types of socio-economic activity, becoming drivers of economic growth, innovation and competition (Geliskhanov & Yudina, 2018). Members of the platforms can share the latest inventions and use the enterprises as an experimental "laboratory". The platform approach meets the requirements of the new socio-technological paradigm of digitalization, contributes to the formation of a "sharing economy" (for example, carsharing using the Yandex Drive platform, home sharing using the airbnb platform), which leads to new forms of industrial and digital cooperation. Digital platforms provide fast and reliable communication, form mechanisms of interaction and exchange between economic agents, reduce entry barriers to markets, decreasing the role of geographical factors. Digital platforms connect small and medium-sized businesses with consumers, leading to a significant expansion of demand.

Digitalization and globalization help the world's largest IT companies (Alibaba, Alphabet, Amazon, Apple, Meta, Microsoft, and Tencent) create the global digital platforms that allow them to do business practically all over the world, including those with their physical absence in a number of countries. Unfortunately, in recent years, the activities of major IT companies indicate not only the development of a competitive environment and increased share of innovative developments, but the gradual monopolization and centralization of the market. It raises serious concerns, since traditional tools of antimonopoly regulation often do not function in conditions of rapid change. Thus, Meta (former Facebook) acquired about 100 different companies in recent years, including Instagram (2012), WhatsApp (2014), Oculus VR (2014), LiveRail (2014), CTRL-labs (2019), and Kustomer (2021). In 2020, the U.S. Federal Trade Commission sued Meta, accusing it of systemic antitrust violations. According to the plaintiff, Meta is characterized by years of anti-competitive behavior, the company's strategy is to takeover potential competitors in order to eliminate potential threats to Meta online dominance.

Digital platforms became most widespread in the e-commerce systems of the U.S. and China. Thus, in the U.S. the creative industries market has reached $1 trillion, China is also close to this figure. But in the Russian Federation it is only $34.2 billion (about 2.5 trillion rubles), or slightly over 2% of GDP.

Chinese experts believe that digital platforms and e-commerce are the core of the country's digital economy. Automated manufacturing and the use of artificial intelligence technology are growing rapidly in China today. For example, in 2021, Xiaomi began to construct a fully robotic smartphone factory ("Black Light Factory"). All business processes at the factory will be carried out by the robots using AI technologies.

Modern robots can solve an increasingly diverse range of tasks, become more agile, and serve creative industries. These industries can be defined as a sector of the economy associated with intellectual activity, developing mainly on ideas and technologies, while robotization, coupled with AI, forms a creative business. Since 2018, China became the leader in the developed manufacturing market, mainly due to ICT services. It is followed by Germany and the United States (Simachev et al., 2021).

Sberbank is the most active platform business model in Russia. For several years it became a full-fledged ecosystem. Currently, the Sber ecosystem includes SberAuto, SberEpharmacy, SberLogistics, SberMarket, SberMegamarket, and Samokat. Sber analyzes and takes into account the experience of foreign business ecosystems, such as Alibaba, Amazon, Kakao, Shopify, and others. For example, the Canadian company Shopify is the one of Amazon's main competitors. Shopify sells $120 billion worth of goods per year. Its turnover has grown by more than 44% the last 12 months. The company's characteristic feature is a cloud-based shopping platform that allows business owners to create and manage their online stores easily. A company that wants to trade through Shopify chooses one of three subscription types and receives a specific set of options. A merchant can integrate their website with hundreds of third-party payment gateways, customize and optimize the checkout process, promote their products and services via Meta and Instagram, use delivery from Shopify partners, and manage inventory (Obukhova, 2021).

Digital platforms offer to the users various products and services, collect and analyze data about all

aspects of their activities and lives, etc. It leads to more accurate and personalized offers and helps to improve the quality of products and services provided by the platforms. Also it allows to build personalized trusted relationships with users, as well as to create business models, increasing profits.

The COVID-19 pandemic drove technological innovation to a new level and stimulated new ways of doing business. For example, the Chinese online store JD.com and the Chinese music label Taihe Music Group have launched three-hour online music shows, during which you can order one-click delivery of various alcoholic beverages right during the broadcast.

Discussion

The business model main goal is to ensure the reliability of the entire value chain, and protects against potential failures when interacting with participants, which is greatly facilitated by digitalization processes.

Today, Germany, China, South Korea, the United States, and Japan show the greatest use of robotics and artificial intelligence technologies. There are more than 2/3 of industrial robots are concentrated in these countries. In Russia considerable attention is paid to the development of these areas in terms of the innovative transformations.

In recent years, Russian innovative companies began to make greater use of artificial intelligence technologies to digitize business processes and improve interaction with customers. It leads to the efficiency of their activities. For instance, Gazprombank developed and implemented a decision-making system for customer applications for credit products based on artificial intelligence (AI analyzes personal data, credit history, and data from external sources). Sberbank developed and implemented the "PATRIOT" system to optimize the cash collection service of ATMs and offices (the system, using machine learning algorithms, independently makes decisions on the amounts, nominal structure, frequency, and time of ATM and bank office service).

Currently, the key sectors of the Russian economy demand the next step towards the complete digitalization of technological processes. The market needs the innovative tools in the form of a digital industrial platform to organize end-to-end interaction of all participants in this process. This platform allows to combine and integrate the best Russian digital solutions. It helps to implement them in production. Foreign experience shows the need to create a unified Russian IT structure that will unite various IT systems and ensure cybersecurity.

Conclusions

The study conducted by the authors revealed that the COVID-19 pandemic and its consequences contributed to the transition from a targeted to a comprehensive digital transformation of business processes in all areas of the economy. On the basis of digital business a new creative digital companies are forming and developing. It includes the digital platforms, platform economy, and extensive use of artificial intelligence technologies.

Digital creative business is characterized by the modification of business processes, the cross-border nature of data and technologies, the enormous speed of spread of not only information, but also new technologies, their adaptation to national and regional economies. The basis of the new form of business organization is digital platforms. Digital platforms help to improve the quality of management, create global markets for goods and services, and quickly and efficiently export demanded products abroad. In addition to the positive impact, the activities of digital platforms contribute to the monopolization of markets, threatens the dissemination of users' confidential information. It gradually leads to an increase of their power and the possibility of manipulating consumer behavior.

The drivers of the digital economy in the world are American and Chinese digital corporations, which have created global digital platforms. Russian business in general is behind in the use of digital technology. But there is successful experience in the creation and operation of digital companies in certain sectors of the economy. Radical changes caused by the COVID-19 pandemic lead to the digitalization of the Russian economy, to the emergence of new directions and ways of doing business.

At the same time, today Russia lacks an effectively functioning national innovation system. It reflects

the weakness of horizontal ties between the participants in the innovation process, and therefore there is no synergistic effect. It is necessary to create a unified digital industrial platform that will collect the best Russian practices and business models, and promote their implementation. IT-products are promising areas for Russian exports. These developments require extensive financial support and an effective system for promoting Russian products abroad, with trade missions as the core participants.

References

1. *Executive Order on Russia's national development goals through 2030.* (2020). Retrieved from http://en.kremlin.ru/events/president/news/63728 (in Russian).

2. Freeman, C. (2002). Continental, National and Sub-national Innovation Systems–Complementarity and Economic Growth. *Research Policy, 31*(2), 191–211. DOI: 10.1016/S0048-7333(01)00136-6.

3. Carlsson, B. (2006). Internationalization of innovation systems: A survey of the literature. *Research Policy, 35*(1), 56–67.

4. Cooke, P., & de Laurentis, C. (2010). Platforms of innovation: Some examples In P. Cooke, C. de Laurentis, S. MacNeill, C. Collinge (Eds.). *Platforms of Innovation: Dynamics of New Industrial Knowledge Flows* (pp. 271–310). London: Edward Elgar Publishing.

5. Baumol, W. (2003). *Prize Lecture.* Retrieved from https://www.e-award.org/wp-content/uploads/William-J-Baumol-Prize-Lecture.pdf

6. Klimanov, D., & Tretyak, O. (2019). Linking business model research and marketing: New network-based approach to business model analysis. *Journal of Business and Industrial Marketing, 34*(1), 117–136.

7. *Digital Attaché Program Information.* (2016). Retrieved from https://www.trade.gov/digital-attache-program-0

8. *Digital Platforms: A Brief Introduction.* (2021). Retrieved from https://www.bmc.com/blogs/digital-platforms/#

9. Geliskhanov, I. Z., & Yudina, T. N. (2018). Digital platform: a new economic institution. *Quality–Access to Success, 19*(S2), 20–26.

10. FTC. (2020). *FTC Sues Facebook for Illegal Monopolization*. Retrieved from https://www.ftc.gov/news-events/press-releases/2020/12/ftc-sues-facebook-illegal-monopolization

11. *Kudrin told where the Russians should go to work*. (2021). Retrieved from https://news.mail.ru/economics/48185549/?frommail=1&exp_id=943 (in Russian).

12. *Xiaomi is ditching humans in favor of robots*. (2021). Retrieved from https://gadgettendency.com/xiaomi-is-ditching-humans-in-favor-of-robots-the-company-is-building-a-fully-robotic-smartphone-factory/

13. Simachev, Y., Fedyunina, A., Yurevich, M., Kuzyk, M., & Gorodny, N. (2021). New Strategic Approaches to Gaining from Emerging Advanced Manufacturing Markets. *FORSAYT, 15*(3), 6–21 (in Russian).

14. Sberbank. (2023). *Sberbank digital ecosystem*. Retrieved from https://www.sberbank.com/ru/eco (in Russian).

15. Obukhova, E. (2021). Head of Marketplaces. *Expert,* (31–34), 78–79 (in Russian).

16. *Online clubbers drive booze sales in China*. (2020). Retrieved from https://www.warc.com/newsandopinion/news/online-clubbers-drive-booze-sales-in-china/43463

17. AI Russia. (2023). *AI Russia Works*. Retrieved from https://ai-russia.ru/library/ (in Russian).

18. UNCTAD. (2023). *How COVID-19 triggered the digital and e-commerce turning point*. Retrieved from https://unctad.org/news/how-covid-19-triggered-digital-and-e-commerce-turning-point

Received 12.10.2022
Revised 16.11.2022
Accepted 08.12.2022