

MANAGING BUSINESS PROCESSES IN THE CONDITIONS OF THE DEVELOPMENT OF THE DIGITAL ECONOMY: GLOBAL AND NATIONAL EXPERIENCES

Inna Irtysheva¹, Vitaly Kim², Yehor Kletsov³

Abstract. *The subject of the study* is the management of business processes in the conditions of the development of the digital economy. *Methodology.* The research uses general scientific methods, in particular: theoretical generalization – in the formation of national features of business process management; methods of positive and normative analysis – when analyzing the global experience of business process management in the conditions of the digital economy; statistical analysis – when analyzing investments in the development of digital technologies of enterprises. The goal is to study the global and national experiences of managing business processes in the conditions of the development of the digital economy. *Research conclusion.* The study of national peculiarities of business process management in the conditions of the development of the digital economy shows a positive trend of adaptation for Ukrainian enterprises. The majority of scientists identify significant advantages in the management of business processes in the conditions of the development of the digital economy and emphasize the inevitability of the transition of Ukrainian enterprises to ensure their competitiveness. The analysis of the use of digital technologies by Ukrainian enterprises showed that the most significant investments are in ensuring interaction with customers, data analysis, management of interaction with employees and business processes, automation and closure of the supply chain, cybersecurity and robotics. Ukrainian enterprises generally show significant success in using the digital economy while increasing the volume of products sold (goods, works, services) through e-commerce, social networks, and Internet platforms. A study of the development of the digital economy in the countries of the world showed an increase in its growth rate during the coronavirus pandemic. It was emphasized that among the global trends that will ensure the development of the digital economy in the future are: cloud computing, big data, the Internet of Things, blockchain, artificial intelligence, virtual reality, and augmented reality is increasingly becoming a new engine of high-quality economic development. A model of interaction of the development of the digital economy with the state, business, and society is proposed.

Key words: business processes, digital economy, management, global and national experience.

JEL Classification: O30, O31, O32

1. Introduction

In the conditions of turbulent challenges (the pandemic caused by the coronavirus infection COVID-19, the war of Russia against Ukraine), there is a need for most socio-economic systems to find ways to carry out their activities safely. From the beginning of the pandemic until today, it has been possible to carry out activities safely thanks to information and telecommunication technologies. This is confirmed by the speed of transition of all

business entities to the use of information systems to ensure their activities and further development. Assuming that the countries of the world, after the quarantine measures, gradually returned to carrying out their activities in a normal mode, then Ukraine. In this case, the war caused by Russia led to the further use and transition to digital technologies to ensure activities and functioning. In the conditions of successful development of digital economy in the world countries, there is a need for research and

¹ Admiral Makarov National University of Shipbuilding, Ukraine (*corresponding author*)

E-mail: innauamd@gmail.com

ORCID: <https://orcid.org/0000-0002-7025-9857>

² Admiral Makarov National University of Shipbuilding, Ukraine

E-mail: management@nuos.edu.ua

ORCID: <https://orcid.org/0000-0002-8295-2261>

³ Admiral Makarov National University of Shipbuilding, Ukraine

ORCID: <https://orcid.org/0000-0001-9918-8813>



This is an Open Access article, distributed under the terms of the Creative Commons Attribution CC BY 4.0

adoption of experience for Ukrainian business entities. As already mentioned, Ukrainian enterprises are moving to the use of digital economy in business process management, which shows significant effectiveness and efficiency of operations. However, such a transition requires significant financial resources and payback periods, so most managers do not foresee the benefits of transition to the digital economy while facing its manifestations on a daily basis. Accordingly, under such conditions, there is a need to study the national and global experience of managing business processes in the development of the digital economy.

The article aims to explore the global and national experiences of managing business processes in the context of the development of the digital economy.

2. National peculiarities of business process management in the conditions of the development of the digital economy

As already mentioned, the importance of researching the national characteristics of business process management in the context of the development of the digital economy is becoming more and more relevant. Therefore, the team of authors notes: "With the development of IT technologies, the relevance of digitization of business processes is constantly increasing. The perfection of business processes or an advantage in the efficiency of business processes compared to competitors contributes to strengthening the competitiveness of companies, enterprises and organizations. The relevant topic becomes particularly relevant in the context of the COVID-19 pandemic, in conditions when the resources of the company, enterprise and organization can situationally shift the focus of efforts and, to a greater extent, direct activities to internal efficiency development projects." (Timinsky, Voytenko, Raichuk, 2021)

Effective management of business processes ensures the appropriate level of competitiveness and therefore requires constant improvement. Most Ukrainian enterprises show the result of effective management only through the introduction of constant innovative changes, including the use of information technologies.

The authors note that "Digitalization is one of the main trends in the development of the domestic economy. Increasing the competitiveness of industrial enterprises is possible only by taking into account the specifics of the fourth industrial revolution. The concept of "Industry 4.0" is characterized by a set of ideas for the automation of production on the basis of digital technologies, the transformation of the world of professions in conditions of rapid automation, and the robotization of all spheres

of production. Therefore, the transition from the third to the fourth revolution is an inevitable transition from simple digitization (the third industrial revolution) to innovations based on the combination of technologies (the fourth industrial revolution), which forces domestic enterprises to rethink their business methods." (Tkachenko, Sharko, 2022)

Therefore, in addition to ensuring competitiveness, Ukrainian enterprises must ensure their functioning in the conditions of the Fourth Industrial Revolution, based on the automation of business processes using information technologies. Accordingly, ensure the management of business processes based on digitalization.

As the research team notes, "The goal of digitizing business processes is to optimize the available resource potential, labor costs, and increase the efficiency of business processes. The transition to a digital environment requires a whole set of procedures, such as the digitalization of production processes, control over the execution of work and product quality, communication with the team and customers, and logistics and deliveries. Digitization of business processes is aimed at simplification and increased flexibility. Considering the growing importance of the role of digitalization in the activities of enterprises, further scientific research is planned to determine the role of digitalization in the economic security of the enterprise." (Dergacheva, Vorzhakova, Khlebynska, 2021)

To ensure the digitalization of business processes it is necessary to have a long time, as well as skills and abilities of the management to make appropriate changes in the company with the participation of employees and taking into account their needs. In the conditions of digitalization and automation of business processes, a significant role belongs to the management of employees, because their number is reduced during such processes. Therefore, it is important to find the right approach to human resources management in the process of business process digitalization.

Also, "The implementation of digitization of business processes of industrial enterprises is an important and relevant step, which acts as a driver of radical changes in the current activity and development of the enterprise. Before making a managerial decision on the digital transformation of business processes, it is necessary to carefully analyze the current business processes of the enterprise, understand the problems and opportunities for solving them, and only then choose methods and measures for digitalization of existing business processes or development of fundamentally new ones based on digital technologies and platforms. In order to determine which

companies and industries are capable of achieving the goals set by the National Strategy, it is necessary to conduct an interdisciplinary analysis of the state of digitalization of business processes in industrial enterprises, and at the enterprise level it is advisable to develop own digital transformation maps, which will allow systematizing actions and concentrating resources on the most promising areas of development." (Zub, Kalach, 2021)

In general, it is essential to develop a concept and an action plan for the transition of business process management to the digital economy. This will ensure the effectiveness and phasing of this procedure by determining the appropriate terms and executors, while calculating the necessary financial resources. Taking steps towards digital transformation is typical for Ukrainian companies today.

However, the essence of the changes implemented is the chaotic use of digital tools without a previously established program. The identified benefits serve as a necessary basis for the development of a digital transformation program, and the identified obstacles actualize a more thorough consideration of the possibility of the emergence and impact of new risks and threats. The considered multi-level digital transformation is designed to identify the current place of each company with the corresponding planning to improve the situation to follow the development trends of the digital economy. (Andriyev, 2022)

Therefore, when transitioning to digital management of business processes, each manager must develop a concept, strategy, and an appropriate action program that will ensure the appropriate result of such work. It is important to remember the preservation of human potential when actively using digital technologies and economy. The active use of digital information technologies in business leads to changes in human participation in the business processes of economic entities, especially enterprises.

The extensive capabilities of the software allow to process large amounts of information and offer ready-made conclusions. However, effective management of business processes requires prioritizing the formation of human potential in such a part of it as knowledge, as well as its constant renewal thanks to the activation of creative thinking processes. This is due to the central role of a person in the decision-making process as the basis of management. It uses all the possibilities of digital information technology only to improve the quality and speed of information processing. The secondary role of such technologies in the management of business processes determines the similar place of human digital skills. (Ivanova, 2021)

It is clear that over time robotics will replace human potential. Under such conditions, it is necessary to

ensure the priority of human potential; appropriate guarantees should be formed at the government level. In Ukraine, more and more companies are investing in digital technologies for customer interaction – 75%, data analytics – 55%, employee interaction management – 48%, and business processes – 44%, supply chain automation – 38%, cybersecurity – 35%, cloud technologies – 31%, and robotics – 26% (Figure 1).

In general, Ukrainian companies are interested in investing in the development of the digital economy. In the first place when making investments it is necessary to ensure customer satisfaction, therefore it is possible to predict the further development of the digital economy. Most of the customers today are choosy; they need to open their mobile phones, gadgets or laptops. After checking all the information about the manufacturer of the product, they are content to make a purchase via e-commerce. To ensure their competitiveness, the corresponding demand for e-commerce is only growing, which is why Ukrainian companies need to ensure the transition in managing business processes based on digitalization.

Digital technologies in modern conditions are being transformed and adapted in various areas of business processes of enterprises. The use of the latest software, artificial intelligence, big data, mobile and cloud technologies, blockchain, the Internet of Things, etc. together cause significant transformation processes in enterprise management. An essential tool of digitalization is the development of accounting to create a complete information system with control elements in the enterprise management system. Interaction of information in electronic form is necessary both at the level of enterprises and the economy of states as a whole. Therefore, the modern trend in the conditions of the digital economy is the introduction of IT technologies into the business processes of enterprises to ensure their competitiveness and effective functioning in the market. (Korolyuk, Mazurenok, 2021).

The development of digital tools in the economy today ensures the functioning of e-commerce both on the domestic and foreign markets, providing speed and spatiality in turbulent conditions. It has been observed that the development of digital tools in the economy is limited due to insufficient knowledge of their use, which is why knowledge and skills in their use are crucial.

Digitalization is one of the critical factors in the development of an enterprise, which involves not only the introduction of innovative technologies, but also a change in its management. As a result, there is a transformation of the specifics of influence both on individual structural divisions of the

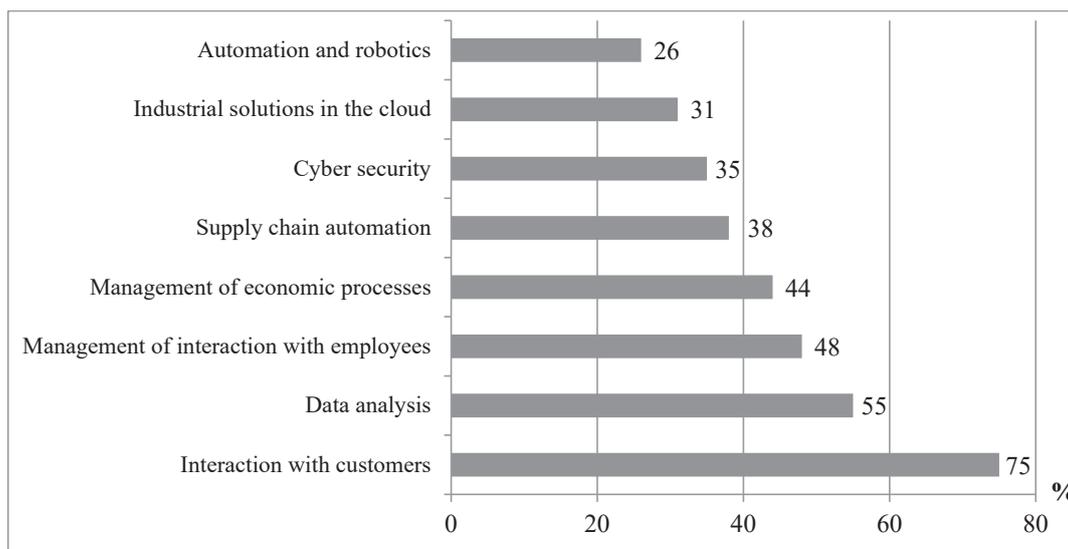


Figure 1. The structure of priority investments in digital technologies

Source: <https://business.diia.gov.ua/cases/tehnologii/indeks-cifrovoi-transformacii-vid-eba-doslidzen-na-stanu-cifrovoi-transformacii-na-pidpriemstvah>

enterprise and on the management system of the enterprise as a whole. Digital transformation requires significant changes in the business and economic environment, which should be aimed at tracking global digital trends, the possibilities of implementing innovative digital technologies, and monitoring and evaluating the stability of the company's functioning (Mykolyuk, Bobrovnyk, 2021).

Therefore, the action program of the government and partner countries should create levers to support the post-war economic development of Ukraine. Accordingly, the study of world economic growth during the war in Ukraine, the analysis of the current state of the war economy and the proposal of measures for the post-war economic development of Ukraine is quite relevant and timely (Irtysheva, Kramarenko, Sirenko, 2022).

In general, it is important to study global trends in the development of the digital economy for their successful adaptation in Ukraine. Therefore, it is important to study the global experience of managing business processes in the development of the digital economy.

3. Global experience in managing business processes under the conditions of the development of the digital economy

The share of digitally deliverable services in total services exports increased in all regions during the pandemic. Digitally deliverable services are approaching 80% and 70% of total services exports in North America and Europe, respectively, in 2021. In Asia and Latin America and the Caribbean, the share of total services exports also increased sharply

between 2019 and 2020. In Oceania, the share jumped from 24 percent in 2019 to 42 percent in 2021. In comparison, regions with relatively low pre-existing levels of digitalization-including digital connectivity and digital skills-entered the pandemic with lower levels of trade in digitally delivered services, and total exports of digitally delivered services declined in 2020 before recovering in 2021 (UNCTAD digital economy database Get the data, 2022).

In Africa, digitally delivered trade varied widely over the course of the pandemic. While countries in North Africa experienced the strongest growth of any region, their less digitized counterparts in Sub-Saharan Africa experienced the sharpest decline from 2019 to 2020. Least Developed Countries (LDCs), which generally have the lowest levels of availability, quality, and affordability of digital technologies and digital skills, followed a markedly different trajectory, experiencing no recovery in digitally deliverable services trade during this period. LDCs urgently need international support to take the necessary measures to seize the opportunities of digital trade, including resilience in times of crisis. (UNCTAD digital economy database Get the data, 2022)

In general, for most countries in the world, regardless of the level of economy, several problems hinder the development of digital economy, such as insufficient digital infrastructure, insufficient digital industrial base and technical support, low level of digital penetration in the economy, delay in the construction of the appropriate system, and the incompleteness of the digital economic ecosystem.

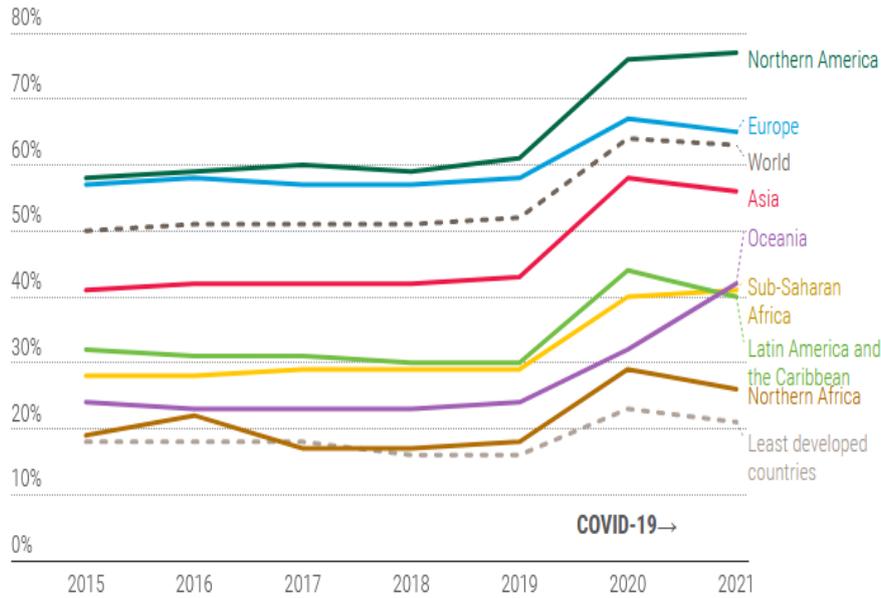


Figure 2. Share of exports of digital services of world countries

Source: UNCTAD digital economy database Get the data

However, the prospects for the development of the digital economy point to corresponding economic growth. For example, by 2021, nearly 40% of China's GDP will come from digital economy revenues, with further growth predicted. (Kan, Lyu, Huang, Yao, 2022)

New and emerging digital trends such as cloud computing, mobile web services, smart grids, and social media are radically changing the business landscape – reshaping the nature of work and the boundaries and responsibilities of organizations. These trends go beyond technological innovation.

Regardless of the sector or level of development in their respective countries, businesses are affected

by policy developments related to ICTs, the Internet and data flows. With the right policies in place, ICTs and the Internet have enormous potential to accelerate growth and drive progress towards the Global Sustainable Development Goals (International Chamber of Commerce (ICC), 2022).

In general, the global development trends of the digital economy will be represented by innovative technologies such as cloud computing, big data, the Internet of Things, blockchain, artificial intelligence, virtual reality, and augmented reality is increasingly becoming a new engine of high-quality development economy. Therefore, a model of the interaction

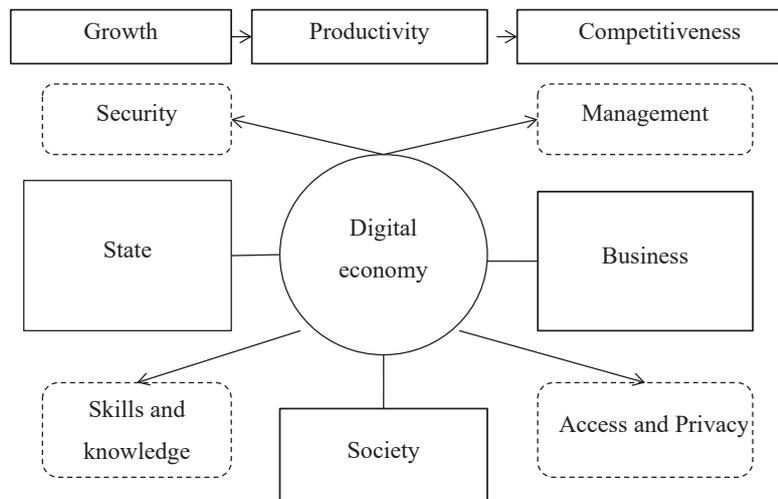


Figure 3. Model of interaction of the development of the digital economy with the state, business and society

Source: designed by the authors

of the development of the digital economy with the state, economy and society has been proposed (Figure 3).

A model of interaction of the development of the digital economy with the state, business and society based on skills and knowledge is proposed, leading to economic growth, increasing productivity and ensuring competitiveness.

The prospects for the development of digital technologies were also explored in the conditions of the war between Russia and Ukraine (Irtysheva, Kramarenko, Sirenko, 2022), with the expansion of the sales market (Pryshchepa, Kardash, Yakymchuk, et al., 2020; Popadynets, et al. 2021), and with regional public administration (Irtysheva, Pavlenko, Boiko, et al., 2022).

4. Conclusions

The study of national peculiarities of business process management in the conditions of the development of the digital economy shows a positive trend of adaptation for Ukrainian enterprises. The majority of scientists identify significant advantages in the management of business processes in the

conditions of the development of the digital economy and emphasize the inevitability of the transition of Ukrainian enterprises to ensure their competitiveness. The analysis of the use of digital technologies by Ukrainian enterprises showed that the most significant investments are made in ensuring interaction with customers, data analysis, management of interaction with employees and business processes, automation and closure of the supply chain, cybersecurity, and robotics. In general, Ukrainian enterprises show significant success in using the digital economy while increasing the volume of products sold (goods, works, services) through e-commerce, social networks and Internet platforms.

A study of the development of the digital economy in the countries of the world showed an increase in its growth rate during the coronavirus pandemic. It was emphasized that among the global trends that will ensure the development of the digital economy in the future are: cloud computing, big data, the Internet of Things, blockchain, artificial intelligence, virtual reality and augmented reality is increasingly becoming a new engine of high-quality economic development.

References:

- Dergacheva, V. V., Vorzhakova, Yu. P., & Khlebynska, O. I. (2021). Organization of business processes in conditions of digitalization. *Bulletin of the KhNU named after V. N. Karazin. International relations series. Economy. Local history. Tourism*, vol. 14, pp. 60–68.
- Irtysheva, I., Pavlenko, O., Boiko, Y., et al. (2022). Evaluation of efficiency of regional public governance in the context of achieving goals of sustainable development. *Management Theory and Studies for Rural Business and Infrastructure Development*, vol. 44(4), pp. 497–505. DOI: <https://doi.org/10.15544/mts.2022.49>
- Zub, P., & Kalach, G. (2021). Digitization of business processes of industrial enterprises. *Economy and Society*, vol. 26. DOI: <https://doi.org/10.32782/2524-0072/2021-26-52>
- Ivanova, V. V. (2021). Business process management: human potential and digital skills. *Mechanism of Economic Regulation*, vol. 1, pp. 41–54.
- Mykolyuk, O. A., & Bobrovnyk V. M. (2021). Enterprise management in the conditions of digitalization of the economy. *Bulletin of the Khmelnytskyi National University*, vol. 4, pp. 142–146.
- Pryshchepa, O., Kardash, O., Yakymchuk, A., et al. (2020). Optimization of multi-channel queuing systems with a single retail attempt: Economic approach. *Decision Science Letters*, vol. 9(4), pp. 559–564.
- Andriyev, N. M. (2022). Digital transformation of the enterprise: theoretical basis. *Efficient economy*, vol. 4. DOI: <https://doi.org/10.32702/2307-2105-2022.4.79>
- Tkachenko, I. C., & Sharko, V. V. (2022). Competitiveness of the enterprise in the conditions of the digital economy. *Bulletin of the Khmelnytskyi National University*, vol. 1, pp. 43–48.
- Irtysheva, I., Bogatyrev, K., & Romanenko, S. (2022). Strategic vectors for The development of sports and recreational activities: international and national experience. *Baltic Journal of Economic Studies*, vol. 8(4), pp. 84–89. DOI: <https://doi.org/10.30525/2256-0742/2022-8-4-84-89>
- Koroliuk, T., & Mazurenok, O. (2021). Digitization of enterprise activities: trends, digital accounting, prospects. *Galician Economic Bulletin*, vol. 3 (70), pp. 59–70.
- Timinskyi, O. G., Voytenko, O. S., & Raichuk, I. V. (2021). Analysis of models and methods of digitization of business processes. *Management of the development of complex systems*, vol. 46, pp. 38–47.
- Irtysheva, I., Kramarenko, I., & Sirenko, I. (2022). The economy of war and postwar economic development: world and Ukrainian realities. *Baltic Journal of Economic Studies*, vol. 8, no. 2, pp. 78–82. DOI: <https://doi.org/10.30525/2256-0742/2022-8-2-78-82>
- Action. Available at: <https://business.diiia.gov.ua/cases/tehnologii/indeks-cifrovoi-transformacii-vid-ebadoslidzenna-stanu-cifrovoi-transformacii-na-pidpriemstvah>
- UNCTAD digital economy database Get the data. Available at: <https://unctad.org/news/supporting-countries-measure-digital-economy-development>

Popadynets, N., et al. (2021). Evaluation of Domestic Market Development in Ukraine, *International Conference on Intelligent Human Systems Integration*, pp. 357–363.

International Chamber of Commerce (ICC) (2022). Available at: <https://iccwbo.org/privacy/>

Citation: Kan, D., Lyu, L., Huang, W., Yao, W. (2022). Digital Economy and the Upgrading of the Global Value Chain of China's Service Industry. *J. Theor. Appl. Electron. Commer. Res.*, 17, pp. 1279–1296. DOI: <https://doi.org/10.3390/jtaer17040065>

Serbov, N., Pavlenko, O., & Irtysheva, I. (2022). Peculiarities of freshwater resources management: national and european experience and current trends. *Baltic Journal of Economic Studies*, vol. 8(4), pp. 158–164. DOI: <https://doi.org/10.30525/2256-0742/2022-8-4-158-164>

Received on: 5th of October, 2022

Accepted on: 21th of November, 2022

Published on: 30th of December, 2022