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# STUDIJOS KINTANČIOJE VERSLO APLINKOJE

Straipsnių rinkinys

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# **STUDIJOS KINTANČIOJE VERSLO APLINKOJE**

**STUDIES IN A CHANGING  
BUSINESS ENVIRONMENT**

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2023

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# MANAGEMENT OF SUSTAINABLE DEVELOPMENT OF DIGITAL BUSINESS IN CONDITIONS OF WAR IN UKRAINE

*Prof. Dr. Oksana Polinkevych*  
*Lutsk National Technical University, Ukraine*

## Annotation

In modern conditions, the processes of sustainable development and digitalization are gaining importance. Goals of sustainable development are in priority and will become the basis of the post-war development of Ukraine's economy. This will be facilitated by the digital development of business, which has developed rapidly in recent years. Digital transformation requires making innovative decisions based on digital technologies. Sustainable development is associated with the formation of a fundamentally new attitude towards man, on the one hand, as a subject of the ecological and economic system, and on the other - as the main goal of its development. The transition to sustainable development on a global scale is possible only under the mandatory condition of coordination of all objects and subjects of this process, which is systemic and connects all levels of the socio-economic system (global, national, regional, local) and various spheres of its functioning (economic, social, environmental). It has been established that digital business contributes to sustainable development, as it is a tool for its development and accelerates the achievement of at least 10 of the 17 UN Sustainable Development Goals. In addition to positive aspects, sustainable development has negative aspects, which contribute to the growth of structural unemployment, digital inequality, manipulation of consciousness, the emergence of social classes of the digital elite and digital "outcasts", and the growth of distrust in digital technologies due to the development of cybercrime. Accordingly, there is a need to manage the sustainable development of digital business in conditions of war in Ukraine. A management mechanism for the sustainable development of digital business has been developed, which is subject to laws of economic development, has a defined concept, principles, approaches and information support. It is based on technological strategy and monitoring of processes of sustainable development and digitization.

**Keywords:** sustainable development, digital business, management mechanism, technological strategy, Industry 4.0.

## INTRODUCTION

The modern economy is changing under the influence of digitalization processes, political and economic instability, military conflicts, crises and pandemics. In the digital reality, when changes are everyday phenomena, it is quite difficult to predict the development of a business for 3-5 years and its promising growth points. This is due to the fact that business structures function in a changing dynamic environment. A sign of variability is that business structures acquire new features that are different from the previous ones in the process of individual development. Digital transformation is a comprehensive approach that uses innovative solutions and proven technologies to optimize four key aspects of the organization: business processes and infrastructure, product solutions and services, corporate culture, channels of interaction with customers and external counterparties. Change is never easy. Technological changes are particularly difficult, because they affect the operational activities of the personnel management business and the management of the enterprise. To realize benefits of digital transformation, it is necessary to purposefully manage organizational changes. Changes can be predicted. Difficulties in managing digital changes arise in connection with the implementation of digital solutions. In an era of constant turbulence, change management needs to consider engagement with key stakeholders both when developing a change management plan and when implementing it.

Sustainable development can be achieved in digital business by taking into account the balance between meeting existing business needs and protecting interests of future generations. Today, this is a mandatory sign of an effective company that wants to attract the attention of partners and investors, enter foreign markets and always be ready for changes in environmental legislation. The implementation of the principles of sustainable development allows for successful communication with the public, and also demonstrates to investors the stability of the company and, at the same time, its readiness for change. By investing in sustainable development, you get the opportunity to attract financing at a low interest rate, avoid problems with regulatory authorities and increase the value of the company.

Many researchers have studied problems of sustainable business development. In particular, most authors separately consider components of sustainable development and their management mechanisms. Countries around the world are facing a serious climate change and environmental degradation. Green banking was developed and adopted as a banking ideology to reduce the negative environmental impact of various polluting industries. Green banking can play an important role in achieving the UN SDGs by 2030 (Bukhari, Hashim, Amran, 2023). There are three strategies for the implementation of sustainable development and circular economy policies, which are related to the stages of their development: integrated in the value chain, focused on institutional compliance and fragmented profiles (Dagilienė, Bruneckienė, Varaniūtė, Lukauskas, 2023). Principles and types of sustainable development (Kuzmak, Kuzmak, 2019), the concept of sustainable development in Ukraine (Polinkevych, 2021), the role and importance of financial institutions in the formation of sustainable development (Khovrak, Polinkevych, Trynchuk, 2021), the interconnection of digitalization process and the concept of sustainable development (Kudryavtsev, 2022).

The purpose of the work is to determine peculiarities of managing the sustainable development of digital business in conditions of war in Ukraine.

## 1. THE CORRELATION BETWEEN GOALS OF SUSTAINABLE DEVELOPMENT AND DIGITALIZATION IN BUSINESS

There are certain golden rules of digital business development: authenticity, balance and consistency of application.

Authenticity can be traced in the formulated goal, which is realized in actions of the business. It is necessary to constantly maintain a balance between the fulfillment of short-term urgent tasks and long-term external obligations, while taking into account expectations of stakeholders. The goal should be implemented consistently, despite possible corporate changes in the future.

According to these rules, digital business should develop in Ukraine in conditions of sustainable development and war. Sustainable development and digitalization are different concepts, but they are interconnected by a common goal. The application of digital technologies was initially considered as a way to increase the efficiency of already existing business models and processes by reducing costs, increasing product quality, reducing production times and optimizing logistics chains, a tool for increasing the efficiency of operational processes, and a way to ensure sustainable development. According to the World Economic Forum and PwC5, the use of modern technologies can accelerate the achievement of at least 10 of the 17 UN Sustainable Development Goals (Final document, 2020).

Sustainable development in conditions of digitalization of the economy has advantages and disadvantages that contribute to the achievement of goals of Sustainable Development (Table 1).

**Table 1.** *Advantages and disadvantages of sustainable development in the digital economy*

<b>Advantages of sustainable development</b>	<b>Disadvantages of sustainable development</b>
The use of more ecological and safe production methods, which reduces the amount of greenhouse gas emissions into the atmosphere	Digital inequality
Companies working on achieving sustainable development goals have advantages in attracting and retaining employees.	The spread of the latest methods of manipulation of consciousness
Consumers are increasingly choosing brands that have a solid reputation and are making a positive difference to society in general.	Leakage of personal data
Communities, suppliers and other partners will benefit from tangible and intangible benefits.	The appearance of social classes of the digital elite and digital "outcasts"
The desire of sustainable development contributes to the formation of a more constructive dialogue with regulatory authorities, and this process is increasingly regulated at the legislative level.	Growing distrust of digital technologies due to the development of cybercrime
Investors starts to understand the benefits of a focus on sustainable development. The need to understand this interdependence becomes even more urgent with the transition of the economy and society to digital standards.	A threat of structural unemployment, wage gap, less access to social guarantees during online employment
The positive or negative impact of business behavior can be more easily tracked and reported.	
Rapid technological changes are transforming traditional business models and strategies, requiring the creation of a stronger foundation for corporate identity.	
The stakeholder engagement process is changing as online communication influences consumer behavior.	
Access to knowledge is facilitated, the joint benefit from knowledge increases, and the competence and awareness of the company's employees increases	
Social and environmental risks are reduced, process efficiency is increased, stakeholders receive the necessary information, information asymmetry is reduced and its transparency is increased	

Source: 2030 Purpose, 2017; Markevich, 2021; Kudryavtsev, 2022

According to UNESCO, just over half of households worldwide (55 percent) have an Internet connection. In developed countries, 87 percent of the population has access to the Internet, in developing countries this index is 47 percent, and in the least developed countries the level of Internet connection is only 19 percent (Bag, Yadav, Dhamija, 2021). A total of 3.7 billion people worldwide do not have access to the Internet. In some third world countries, due to the high cost of information and computer equipment, most people cannot afford to pay for the Internet. In particular, in some poor rural areas of Africa, 1 GB of data costs about 40 percent of the average monthly salary. A negative consequence of sustainable development in the context of digitalization is an increase in electricity consumption and e-waste in companies engaged in the production of electronic energy residents. According to the Waste Electrical and Electronic Equipment (WEEE) forum the amount of electronic waste in 2021 reached 57.4 million tons, which is heavier than the heaviest man-made object on earth - the Great Wall of China. At current growth rates, global e-waste is expected to reach 74 million tons per year by 2030 (Appio, Frattini, Petruzzelli, Neirotti, 2021).

Digitization is considered an effective tool for supporting sustainable environmental, social and economic development, which should become an ongoing process. Only the achievement of this characteristic increases the contribution of digitalization to the development of the organization and enterprise of the region. In recent years, there has been an increased interest in topics in the field of digitalization, such as digital economy, digital technologies, digital society, digital innovation, on the one hand, and on the other hand, many problems related to sustainability, sustainable development, sustainable future, climate change, protection and preservation environment. Sustainable development is combined with the organization's management goals, environmental, social and economic aspects and the goals of sustainable development, which represents main areas of concern for its problems that affect and will affect our planet in coming years. Development goals are aimed at development that meets needs of present generations and ensures that future generations meet their own needs. For example, the sustainable development cluster includes topics related to digitization, ICT, digital transformation, digital economy, digital technologies and digital transformation. In addition, the digitalization cluster includes articles that discuss the interconnection between digitalization, Industry 4.0 and specific technologies such as artificial intelligence, big data and sustainable development, circular economy. The concept of digitization includes all new technologies such as blockchain, big data analytics, artificial intelligence, the Internet of Things (IoT) and other developments that contribute to the creation of new open business models. In addition, technology and digital processes are catalysts for achieving goals of sustainable development and digital sustainability, which is the use of technology in business-as-usual applications to improve the environment (Weitzzeker, & Wiikman, 2019)

In 2022, the European Commission presented a new standardization that focuses on standards in the single market and worldwide. The strategy concerns the green and digital economy, and its main objective is to strengthen the global competitiveness of the European Union. This new strategy aims to bring the digital economy into technology programs. The European Commission has also published a vision that includes goals and attitudes needed for a successful digital transformation of Europe by 2030. The European Commission proposes a set of digital principles to quickly support, mainly, the following areas (Nikitenko, Metelenko, Shapurov, 2022):

- 1) citizens with digital skills and highly qualified digital professionals by 2030;
- 2) safe, efficient and sustainable digital infrastructures;
- 3) digital transformation of business, as well as digitalization of public services by 2030.

Digital technologies are a significant and differentiating factor for companies in terms of sustainable and competitive aspects of the global market. European businesses can take advantage of the significant opportunities associated with digitization. Digitization, sustainability and technological development are influencing and possibly shaping the European and global business environment in the future.

Green innovation and digital transformation include economic and environmental aspects. As for "innovation", this concept implies new initiatives, changes, approaches or proposals that also address social challenges. Sustainable and digital innovation occurs in various areas, such as products, processes, services and business models, which goal is to reduce the impact on the environment and ensure sustainable ecological, social, economic development.

## 2. MECHANISM FOR MANAGEMENT OF SUSTAINABLE DEVELOPMENT OF DIGITAL BUSINESS

The management mechanism for the sustainable development of digital business in the conditions of war in Ukraine involves the coordinated activity of authorities and businesses with the aim of creating favorable conditions for the development of territorial communities.

Main components of the mechanism for managing the sustainable development of digital business in the conditions of war in Ukraine are:

- 1) technological strategy;
- 2) principles, approaches and information provision of digital business;
- 3) tools, methods and levers of management of sustainable development of digital business in conditions of war;
- 4) monitoring indicators of sustainable development and digitization.

Main components of the mechanism are presented in fig. 1.

The proposed innovative mechanism for managing the sustainable development of digital business in the conditions of war is an important tool for ensuring the sustainable development of territorial communities in the conditions of European integration.

Main tools for managing the sustainable development of digital business include:

- 1) formation of corporate culture;
- 2) assessment of the internal and external business environment;
- 3) development of digital business development algorithms.

Main levers of managing the sustainable development of digital business include:

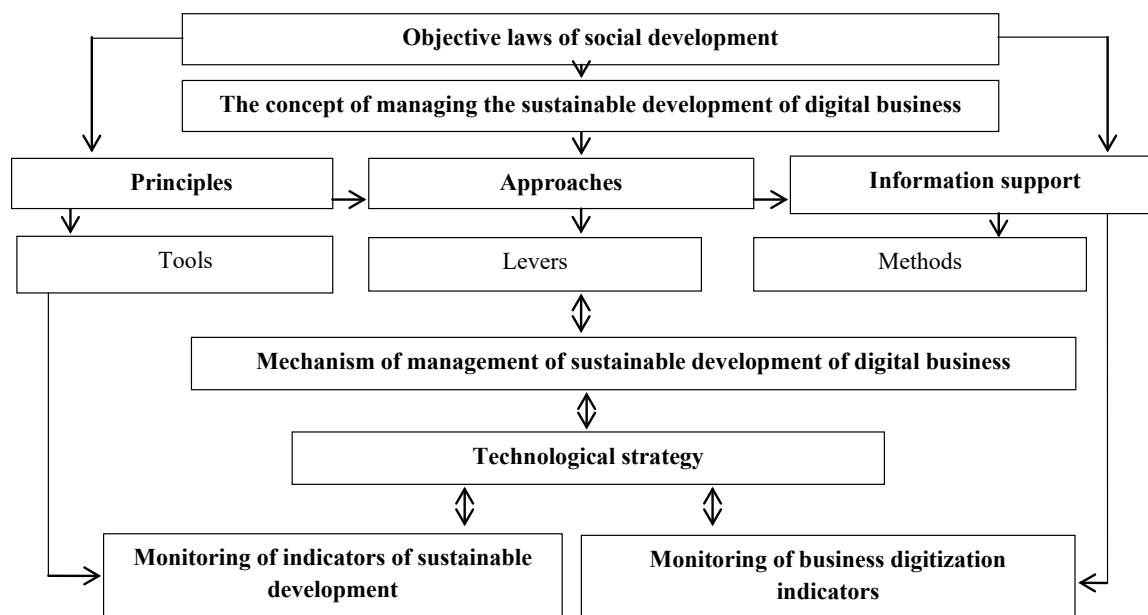
- 1) planning of digital business activities in conditions of sustainable development;
- 2) development of a technological strategy for managing the sustainable development of digital business;
- 3) a system of motivation and incentives during the interaction of stakeholders in a changing environment.



Main methods of managing the sustainable development of digital business include:

- 1) graphical and tabular methods;
- 2) methods of comparison and analogy;
- 3) “brainstorming” methods;
- 4) economic and mathematical models.

Each of the elements of the management mechanism for the sustainable development of digital business in conditions of war is interconnected. Therefore, monitoring indicators of sustainable development and digitalization of business is an important block. The concept of managing sustainable development involves taking into account the socio-psychological tension in society caused by war. The main indicator in sustainable development should be short-term indicators, not medium and long-term. This is due to the fact that military actions do not contribute to the improvement of the economic situation in the country, and the forecast indicators are highly unlikely to be achieved.



**Figure 1.** Mechanism of management of sustainable development of digital business in conditions of war

Sustainable development is a concept that must balance between needs of today’s society with interests of future generations, including safety and a healthy environment. Main indicators that measure sustainable development are: Genuine saving, which was developed by the World Bank; Environmentally adjusted net domestic product, Genuine Progress Indicator, Environmental Sustainability Index, Index of Sustainable Economic Welfare, UN CSD sustainable development indicator system, OECD environmental indicator system, Globesight global development model and H. Bossel’s methodology (Haustova, Omarov, 2018).

## CONCLUSIONS

1. The main global trend of recent years is digitization, which affects all spheres of economy and social life. Today, advanced technologies of Industry 4.0 (in particular, cloud, biotechnologies, “Big Data” collection and analysis tools, 3D printing, crowdsourcing, “Blockchain” technologies) are radically changing business. The process of digital business transformation includes several independent interrelated elements: work with clients, operational business processes and enterprise business models. Today, digital technologies already play an important role in business development, they allow to improve the quality of service provision, optimize business processes, increase the efficiency of enterprises, and promote the rational use of raw materials.
2. Digital business is a component of electronic business, or a higher-quality stage of its development. The difference between e-business and digital business in general lies in the technologies used to carry out business activities. Digital technologies by their nature are more complex electronic technologies and are based on the collection and processing of a significant amount of information, the creation of algorithms for their analysis, the implementation of automation systems and artificial intelligence. At the beginning of its inception, electronic business was characterized by simpler systems of information collection, there were no complex systems for its systematization and processing. Thus, digital business is a new form of electronic business, which consists in the use of digital technologies to carry out the main activity of the enterprise, which brings it the greatest amount of income. It should be noted that in modern conditions, the formation of the digital economy, which is built on the use of information and communication technologies, takes place primarily on the basis of the use of electronic technologies.

3. Sustainable development is an important indicator that characterizes digital business. It is achieved by taking into account the balance between meeting existing business needs and protecting interests of future generations. The efficiency of the company is determined by sustainable development. Implementation of the principles of sustainable development provides communication with the public, shows investors the stability of the company, and determines readiness for changes. By investing in sustainable development, the business attracts financial resources at a low interest rate, increases the value of the company.
4. Sustainable development in conditions of digitalization of the economy has advantages and disadvantages. Main advantages are the use of ecological and safe production methods, the transformation of traditional business models and strategies, open access to knowledge, and the reduction of social and environmental risks. Disadvantages are the growth of digital inequality, the leakage of personal data, the growth of distrust in digital technologies, and the threat of structural unemployment.
5. It is recommended to manage the sustainable development of digital business in conditions of war in Ukraine through a mechanism that contains such elements as technological strategy, principles, approaches and information support of digital business, tools, methods and levers of managing the sustainable development of digital business in conditions of war, monitoring indicators sustainable development and digitalization. Indicators for measuring sustainable development are complex index indicators or methods, which include from 22 to 134 indicators containing various indicators.

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## DARNIOS SKAITMENINĖS VERSLO PLĖTROS VALDYMAS UKRAINOS KARO SĄLYGOMIS

### Santrauka

Šiuolaikinėmis sąlygomis darnaus vystymosi ir skaitmeninimo procesai įgyja svarbą. Darnaus vystymosi tikslai yra prioritetingi ir taps Ukrainos pokario ekonomikos raidos pagrindu. Tai palengvins pastaraisiais metais sparčiai besivystanti skaitmeninė verslo plėtra. Skaitmeninė transformacija reikalauja priimti naujoviškus sprendimus, pagrįstus skaitmeninėmis technologijomis. Darnus vystymasis siejamas su iš esmės naujo požiūrio į žmogų formavimu, viena vertus, kaip ekologinės ir ekonominės sistemos subjekto, kita vertus, kaip pagrindinio jos vystymosi tikslo. Perėjimas prie darnaus vystymosi pasauliniu mastu galimas tik esant privalomai sąlygai koordinuoti visus šio proceso, kuris yra sisteminio pobūdžio ir apima visus socialinės ir ekonominės sistemos lygius (pasaulinį, nacionalinį, regioninį, vietinį) ir įvairias jo funkcionavimo sritis (ekonominę, socialinę, aplinkosauginę), objektus ir subjektus. Nustatyta, kad skaitmeninis verslas prisideda prie darnaus vystymosi, nes yra jo plėtros įrankis ir pagreitina bent 10 iš 17 JT darnaus vystymosi tikslų siekimą. Be teigiamų aspektų, darnus vystymasis turi ir neigiamų aspektų, kurie prisideda prie augančio struktūrinio nedarbo, skaitmeninės nelygybės, manipuliavimo sąmone, atsiradančių skaitmeninio elito ir skaitmeninių „atstumtųjų“ socialinių klasių, augančio nepasitikėjimo skaitmeninėmis technologijomis, daugėjant nusikaltimų elektroninėje erdvėje. Atitinkamai, reikia valdyti tvarią skaitmeninio verslo plėtrą karo Ukrainoje sąlygomis. Sukurtas darnios skaitmeninio verslo plėtros valdymo mechanizmas, kuriam galioja ekonominės raidos dėsniai, turi apibrėžtą koncepciją, principus, požiūrius ir informacinę paramą. Jis pagrįstas technologine strategija ir darnaus vystymosi bei skaitmeninimo procesų stebėjimu.

**Pagrindiniai žodžiai:** darnus vystymasis, skaitmeninis verslas, valdymo mechanizmas, technologinė strategija, Pramonė 4.0.

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**Straipsnių rinkinys**

Parengė Romantė Bučienė  
Maketuotoja Birutė Vilutienė  
Straipsniai recenzuoti

**LIETUVOS EKONOMIKOS DĖSTYTOJŲ ASOCIACIJA**

Naugarduko g. 5, LT-03231 Vilnius, Lietuva  
Esl. paštas [info@leda.lt](mailto:info@leda.lt)  
<http://www.leda.lt>

Išleido Lietuvos ekonomikos dėstytojų asociacija, Naugarduko g. 5, LT-03231 Vilnius  
Spausdino UAB CIKLONAS, Žirmūnų g. 68, LT-09124 Vilnius  
Internete: <http://www.skaityk.lt>, el. paštas: [info@skaityk.lt](mailto:info@skaityk.lt)  
Tiražas 50 egz.

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LIETUVOS EKONOMIKOS DĖSTYTOJŲ ASOCIACIJA  
Naugarduko g. 5  
LT-03231 Vilnius, Lietuva  
El. paštas [info@leda.lt](mailto:info@leda.lt)  
<http://www.leda.lt>