УДК 333.4:339.5
DOI: https://doi.org/10.32782/2224-6282/191-16

Tiahunova Zlata
PhD in Economics, Docent,
Associate Professor at the Department of Marketing and Management,
Khmelnytskyi Cooperative Commercial and Economic Institute
ORCID: https://orcid.org/0000-0002-4508-5453

Kruchak Liudmyla
PhD in Economics,
Senior Lecturer at the Department of Accounting, Taxation and Marketing,
Mukachevo State University
ORCID: https://orcid.org/0000-0001-7285-7466

Тягунова З.О.
Хмельницький кооперативний торговельно-економічний інститут
Кручак Л.В.
Мукачівський державний університет

DIGITAL MANAGEMENT AS A PLATFORM FOR SUSTAINABLE ENTERPRISE DEVELOPMENT IN TIMES OF MODERN CRISES

Digital management transformation is becoming increasingly relevant for enterprises worldwide, including in Ukraine, as it creates a platform facilitating the transition of management systems into a continuous, stable operating mode. It ensures increased economic efficiency of the enterprise while simultaneously raising accountability levels towards partners, clients, and society. Moreover, during the current crisis affecting our country's economy, it is particularly crucial to have digitized management. It helps enterprises to establish a flexible and informative system for preventing or addressing adverse business phenomena. Therefore, the article aims to explore the features of utilizing digital management as a platform for the sustainable development of enterprises amidst contemporary crises. The research confirms that digital management plays a pivotal role in ensuring the sustainable development of enterprises. Its implementation facilitates the automation, analysis, and optimization of managerial processes, enabling enterprises to respond more effectively to environmental changes and enhancing their competitiveness.

Keywords: *operational mode, economic efficiency, accountability to partners, artificial intelligence development, comprehensive solutions.*

JEL classification: *D22, F50, L1, M12*

ЦИФРОВИЙ МЕНЕДЖМЕНТ ЯК ПЛАТФОРМА СТІЙКОГО РОЗВИТКУ ПІДПРИЄМСТВА В УМОВАХ СУЧАСНИХ КРИЗ

Наразі цифрова трансформація менеджменту стає все більш актуальною для підприємств у всьому світі, в тому числі і в Україні, оскільки вона створює платформу, що забезпечує перехід системи управління у безперервний, стабільний режим функціонування. Це дозволяє підвищити економічну ефективність підприємства, одночасно підвищуючи рівень відповідальності перед партнерами, замовниками та суспільством. Крім того, у період кризи, в якій наразі перебуває економіка нашої країни, особливо важливо мати саме цифровізований менеджмент, оскільки він допомагає підприємствам побудувати гнучку та інформативну систему попередження або усунення несприятливих для бізнесу явищ. Отже, метою статті є дослідження особливостей використання цифрового менеджменту як платформи стійкого розвитку підприємства в умовах сучасних криз. Реалізація мети досягнута на основі методів логічного аналізу, синтезу та загальної комбінаторики (у розв'язанні задач вибору та розташування елементів цифрового менеджменту). Дослідження підтверджує, що цифровий менеджмент відіграє ключову роль у забезпеченні стійкого розвитку підприємств. Його впровадження сприяє автоматизації, аналізу та оптимізації управлінських процесів, що дозволяє підприємствам ефективніше реагувати на зміни у зовнішньому середовищі та підвищує їхню конкурентоспроможність. Дослідження підтверджує, що цифровий менеджмент набуває здатності діяти як платформа стійкого розвитку підприємства в умовах сучасних криз коштом впровадження різноманітних цифрових аналітичних та прогностичних інструментів. Завдяки цьому формується здатність менеджменту підприємства прогнозувати та адаптуватися до змін у зовнішньому середовищі або в умовах, що можуть впливати на його діяльність. Дослідження підтверджує, що ефективність цифрового менеджменту, як платформи стійкого розвитку підприємства, вимірюється через швидкість та гнучкість його підсистем у реагуванні на зміни у внутрішньому та зовнішньому середовищі, а також через те, наскільки ефективно він дозволяє використовувати ресурси та забезпечує ефективне функціонування та стале зростання у часі.

Ключові слова: *режим функціонування, економічна ефективність, відповідальність перед партнерами, розвиток штучного інтелекту, комплексні рішення.*

Statement of the problem. Currently, digital management transformation is becoming increasingly relevant for enterprises worldwide, including in Ukraine, as it creates a platform for sustainable development. In particular, digital management is defined as an integrated system of digital tools, processes, and strategies that facilitate the transition of management systems into a continuous, stable operating mode. This mode ensures increased economic efficiency of the enterprise while simultaneously raising accountability levels towards partners, clients, and society. Moreover, during the current crisis affecting our country's economy, it is important to have effective digital management, as it helps enterprises build a flexible and informative system for preventing or addressing adverse business phenomena.

Analysis of recent research and publications. The development of the concept of digital management is the focus of academic research conducted by Sedikov I.O., Sedikov D.V., Mashika H., Zelic V., Kiziun A., Maslyhan R., et al. However, most scholars acknowledge that digital management serves as a platform for the sustainable development of enterprises. In particular, Melnyk V. notes that digital technologies and tools enhance the sustainable development of enterprises. Sedikova I.O. and Sedikov D.V. emphasize that digital technologies in management allow enterprises to better adapt to changes in relationships with partners, clients, and society.

At the same time, acknowledging the thorough work of the outlined researchers, it is worth noting that further scientific research is needed on digital transformation of management, particularly on the creation of a platform that ensures the transition of the management system into a continuous, stable operating mode.

Objectives of the article. The article aims to explore the features of utilizing digital management as a platform for the sustainable development of enterprises amidst contemporary crises.

Summary of the main results of the study. In a general sense, among the key aspects that make digital management a platform for sustainable development is the automation of management processes, a wide pool of digital analytical and predictive tools, flexibility and speed of reaction to measures ensuring crisis-resistant, continuous, and stable operation of the enterprise; increasing accountability of managers and transparency of management actions [3]. However, it is essential to consider that these outlined aspects are shaped by the influence of various factors, which manifest themselves through automation, analysis, and optimization processes [1; 3]. It is these factors working together that expand the possibilities of management.

Therefore, in a narrower sense, the triggers that transform digital management into a platform for sustainable development (Table 1) include: 1) availability and speed of data processing (enabling faster and more efficient collection, storage, and processing of large volumes of data); 2) availability of digital tools useful for various management aspects; 3) advancement in artificial intelligence and machine learning (algorithms for data analysis, trend forecasting, and data-driven decision-making); 4) ability to integrate various digital systems and platforms (enabling enterprises to create comprehensive solutions covering all management aspects) [1–2; 7].

The automation, analysis, and optimization aspects of management processes allow the qualitatively new strategic approach implementation to organizing work operations. It involves the purposeful use of technologies and tools aimed at increasing productivity and efficiency in management.

The main effects of this include the elimination of routine and repetitive tasks, reduction in time and effort spent by personnel, increased productivity and efficiency, as well as ensuring greater accuracy and quality of management work.

In the context of sustainable enterprise development, automation, analysis, and optimization of management processes play a key role in ensuring operational stability, taking into account the features highlighted in Figure 1. Particularly, important in this context are efficient resource utilization, responsiveness to change, and enhancing capabilities for effective operation and stable development [1].

So, it's evident that digital management acquires the capability to act as a platform for sustainable enterprise development in the face of modern crises through various digital analytical and predictive tools implementation [3–4]. It enables the enterprise management to forecast and adapt to changes in the external environment or conditions that may impact its operations. However, it is through its role in ensuring sustainable development that it

Table 1

Triggers that transform digital management into a platform for sustainable development

Triggers	Characteristics of the trigger	Outcome of the trigger
Accessibility and speed of data processing	Digital technologies enable faster and more efficient collection, storage, and processing of large volumes of data	The ability to quickly respond to changes and make informed decisions
Wide range of tools	Today, there is a wide range of digital tools available that can be utilized for various aspects of management,	The ability to establish business analytics and automate various management processes
Advancement in artificial intelligence nd machine learning	Thanks to the development of these technologies, companies can utilize algorithms for data analysis, trend forecasting, and data-driven decision-making	It helps identify key trends and forecast future scenarios, allowing enterprise management to make informed decisions
Digital integration	The integration of various digital systems and platforms allows companies to create comprehensive solutions that cover all aspects of management	It ensures enhanced data exchange, streamlined processes, improved communication between different departments, as well as unified access to and analysis of data from multiple sources

Source: formed based on [1–2; 7]

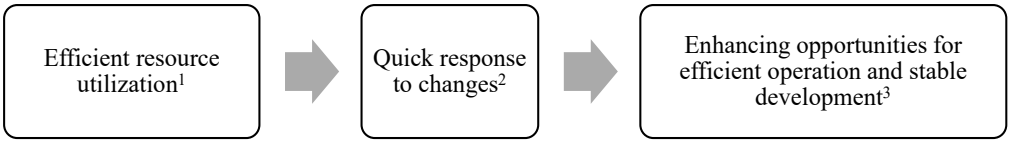

Figure 1. Features of effective automation, analysis, and optimization of management processes within the framework of digital enterprise management

Note

[1] It is formed by the ability of enterprise management to maximally utilize its resources (such as human, financial, material, technical, etc.) to achieve its goals and target level of responsibility to partners, clients, and society.

[2] It is formed by the ability of enterprise management to quickly and effectively adapt to changes in the external environment or internal conditions that may affect its operations.

[3] It is formed by the ability to enhance the potential of the enterprise in ensuring the efficiency of its operations and sustainable growth over time.

Source: formed based on [1; 4; 6]

achieves through automation, analysis, and optimization of management processes.

Let's consider the highlighted features of effective automation, analysis, and optimization of management processes within the framework of digital enterprise management (as a platform for its sustainable development):

Regarding effective resource utilization, in this context, automation allows for optimizing the use of resources such as time, labor, and material resources [1; 4]. Reducing the time and effort spent by staff on routine tasks enables them to allocate their resources to more important and strategic tasks, thereby enhancing productivity and efficiency within the enterprise.

As for rapid response to changes, in this context, automation enables enterprises to quickly respond to changes in market conditions, technological advancements, and other factors that may impact business operations.

Regarding enhancing capabilities for effective functioning and stable development, in this context, automation enables the enterprise to be more flexible and adaptive to changes in the external environment, such as economic crises, sharp shifts in market conditions, or technological innovations. It helps create conditions for effectively implementing planned actions.

Most scholars emphasize that the effectiveness of digital management (as a platform for enterprise sustainable development) is measured by the speed and flexibility with which its subsystems respond to changes in both the internal and external environments, as well as how efficiently it allows the utilization of resources and ensures operational efficiency and sustainable growth over time [3].

The aspect of implementing a wide range of digital tools is shaped by a strategic approach to utilizing various analytical instruments and methods for data collection, processing, and analysis, with the aim of enhancing analytical and predictive capabilities. The main effects of such actions include identifying trends, forecasting future events, and making informed managerial decisions. In the context of sustainable development, the implementation of analytical and predictive tools plays a key role in enhancing understanding of one's environment, opportunities, and risks. It helps in making informed decisions, which contributes to increasing the economic efficiency of the enterprise, considering the features highlighted in Figure 2.

In particular, the following are important collecting and processing big data, utilizing various methods of data analysis, developing predictive models and forecasts, using analytics-derived data for making informed managerial decisions, and continuously monitoring the results and effectiveness of the decisions made.

Sure, let's consider the highlighted features for the effective implementation of a wide range of analytical and predictive tools in digital enterprise management (as a platform for sustainable development [1]).

Regarding the collection and processing of big data, in this context, the implementation of digital tools allows enterprises to transition to using technologies for accumulating large volumes of data from various sources. This enables enterprises to obtain a more comprehensive and objective picture of their business and its environment

Regarding data analysis, in this context, the implementation of digital tools allows enterprises to transition to various methods, including statistical analysis, machine learning, text analysis, etc., to identify trends, patterns, and critical insights within datasets.

Regarding the development of predictive models and forecasting, in this context, the implementation of digital analytical and predictive tools allows enterprises to expand their capabilities to predict and plan their activities in advance.

Regarding the use of analytics data for making informed management decisions, in this context, the implementation of digital analytical and predictive tools allows enterprises to ensure the rationality and effectiveness of decisions regarding development strategies, process optimization, customer interactions, and so on [1].

Regarding the continuous monitoring of results and the effectiveness of decisions made, in this context, the implementation of digital analytical and predictive tools enables enterprises to identify new opportunities for improving and adjusting their operational regimes.

The aspect of flexibility and speed of reaction to measures ensuring crisis-resistant, continuous, and stable operation of the enterprise is formed by a strategic approach to responding to changes in both the internal and external environment (such as changes in market conditions, political instability, etc. [3; 5]) aimed at maintaining a stable mode of operation. In the context of the sustainable development of the enterprise, the outlined responsiveness is shaped by considering the characteristics highlighted in Figure 3.

Particularly, important are: flexibility in organizational structure, flexibility in core activities (production, supply,

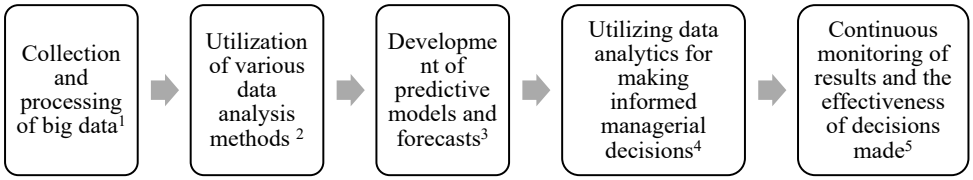

Figure 2. Characteristics of effective implementation of a wide range of analytical and predictive tools within the framework of digital enterprise management

Note

[1] The capability of enterprise management to rapidly gather, store, and analyze large volumes of data, characterized by three main properties known as the "Big Data V's": volume (a large amount of data), variety (diversity of data sources and types), and velocity (speed of data collection and processing).

[2] The capability of enterprise management to accurately understand and interpret the information contained in data, enabling the extraction of valuable insights for decision-making.

[3] The management's ability to predict various aspects of enterprise operations, such as sales, production, expenses, profits, etc., with maximum accuracy and informativeness.

[4] The management's ability to develop effective and well-founded decisions in enterprise management.

[5] The management's ability to conduct detailed assessment of future outcomes and identify potential scenarios based on available data, trends, and other factors.

Source: formed based on [1; 3–4]

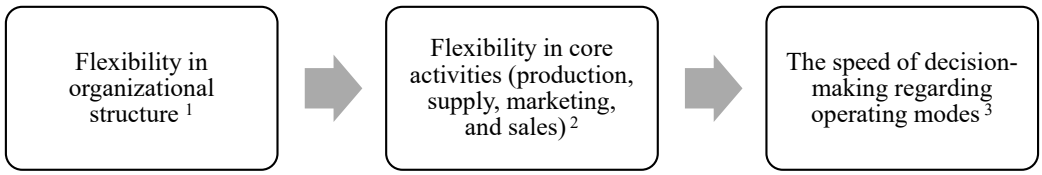

Figure 3. The achieving flexibility and quick responsiveness characteristics through measures ensuring crisis-proof, continuous, stable operation within the framework of digital enterprise management

Note

[1] The enterprise management's ability to adapt its structure and internal processes to respond to changes in the environment is being formed.

[2] The enterprise management's ability to adapt its core operational processes to respond to changes in the internal and external environment is being developed.

[3] The enterprise management's ability to effectively and promptly make strategic and tactical decisions regarding its operating modes in various situations is being developed

Source: formed based on [3; 5–6]

marketing, and sales [1]), and speed of decision-making regarding operating modes. Regarding flexibility in organizational structure, the integration of digital analytical and predictive tools allows for the rapid adaptation of the organizational structure and management processes to changes in the environment. It may encompass power distribution, role and responsibility changes, restructuring of departments, and so forth [5–6].

Implementing digital analytical and predictive tools in core activities such as production, supply, marketing, and sales enables enterprise management to swiftly respond to changes in demand, technologies, competition, and other factors by adjusting production processes, supply strategies, marketing campaigns, and more. Flexibility in production processes, supply chain agility, and precise and targeted sales strategies are all important.

Implementing digital analytical and predictive tools in decision-making regarding operational modes fosters the ability to make informed decisions quickly and efficiently in times of crisis or environmental changes. It is essential to quickly understand the current situation and identify key trends and issues, forecast future events and development scenarios, provide effective recommendations for potential actions, and monitor the outcomes of implemented decisions.

Conclusions. Within the study, attention has been drawn to the fact that among the key aspects transforming digital management into a platform for sustainable development are: process automation in management, a wide array of digital tools, flexibility and speed of response through measures ensuring crisis-proof, continuous, stable operation of the economic entity; increased accountability of managers and transparency of managerial actions. The following conclusions were made:

The research confirms that digital management plays a key role in ensuring the sustainable development of enterprises through automation, analysis, and optimization of management processes, enabling such entities to more effectively respond to changes in the environment and enhance their competitiveness.

The study confirms that digital management is acquiring the ability to act as a platform for the sustainable development of enterprises in modern crises through the implementation of various digital analytical and predictive

tools. This enables enterprise management to forecast and adapt to changes in the external environment or conditions that may affect its operations.

The study confirms that the effectiveness of digital management as a platform for sustainable enterprise development is measured by the speed and flexibility with which its subsystems respond to changes in the internal and external environment, as well as how efficiently it allows for resource utilization and ensures operational effectiveness and sustainable growth over time.

Since the development of digital management is evidently a dynamic process, there is potential for further research in areas such as optimizing the use of digital technologies, the impact of digital management on various industries and aspects of entrepreneurial activities, and so on.

References:

1. Bannikov V., Lobunets T., Buriak I., Maslyhan O., Shevchuk L. (2022) On the Question of the Role of Project Management in the Digital Transformation of Small and Medium-Sized Businesses: Essence and Innovative Potential. *Amazonia Investiga*, vol. 11, pp. 334–343.

2. But-Husaim O. H., Krvtunenko K. (2020) Tsyfrovyy menedzhment: problemy ta perspektyvy rozvytku [Digital management: problems and development prospects], *Biznes Inform*, vol. 6, pp. 297–304.

3. Mashika H., Zelic V., Kiziun A., Maslyhan R. et al. (2023) Services sphere cluster management: virtualization and methodological aspects. Odesa: KUPRIENKO S.V.

4. Mel′nyk V. (2019) Kontseptualizatsiya tsyfrovoho menedzhmentu yak realizatsiya i vyrazhennya kreatyvnosti osvity ta osobystosti [Conceptualization of digital management as implementation and expression of creativity of education and personality]. *Nova paradyhma*, vol. 134. Available at: https://enpuir.npu.edu.ua/bitstream/handle/123456789/26533/Melnyk%20Viktoriia.pdf?sequence=1 (accessed January 10, 2024).

5. Netreba M. N., Shybyryna S. O., Korolenko O. B. (2022) Tsyfrovyy menedzhment yak mekhanizy efektyvnosti biznes-struktur [Digital management as mechanisms for the effectiveness of business structures]. *Naukovi perspektyvy*, vol. 5 (23)), pp. 246–258.

6. Sedikova I., Sedikov D. (2022) Novi paradyhmy menedzhmentu v umovakh tsyfrovoyi ekonomiky [New paradigms of management in the conditions of the digital economy]. *Food Industry Economics*, vol. 14(3), pp. 37–43.

7. Tupkalo V. M. (2021) Tsyfrova ekonomika: zmina paradyhmy menedzhmentu pidpryyemstv [Digital economy: a change in the paradigm of enterprise management]. *Ekonomichnyy visnyk NTUU «Kyyivs'kyy politekhnichnyy instytut»*, vol. 19, pp. 179–180.

Список використаних джерел:

1. Bannikov V., Lobunets T., Buriak I., Maslyhan O., Shevchuk L. On the Question of the Role of Project Management in the Digital Transformation of Small and Medium-Sized Businesses: Essence and Innovative Potential. Amazonia Investiga. 2022. Vol. 11. P. 334–343.

2. Бут-Гусаім О.Г., Крвтуненко К. Цифровий менеджмент: проблеми та перспективи розвитку. *Бізнес Інформ*. 2020. № 6. С. 297–304 .

3. Mashika, H., Zelic, V., Kiziun, A., Maslyhan, R. et al. Services sphere cluster management: virtualization and methodological aspects. Odesa: KUPRIENKO SV., 2023.

4. Мельник В. Концептуалізація цифрового менеджменту як реалізація і вираження креативності освіти та особистості. *Нова парадигма*. 2019. № 134. URL: https://enpuir.npu.edu.ua/bitstream/handle/123456789/26533/Melnyk%20Viktoriia.pdf?sequence=1 (дата звернення: 10.01.2024).

5. Нетреба М.Н., Шибирина С.О., Короленко О.Б. Цифровий менеджмент *як механізи ефективності бізнес-структур*. *Наукові перспективи*. 2022. № 5 (23)). С. 246–258.

6. Седікова, І., Седіков, Д. Нові парадигми менеджменту в умовах цифрової економіки. *Food Industry Economics*. 2022. № 14(3). С. 37–43.

7. Тупкало В.М. Цифрова економіка: зміна парадигми менеджменту підприємств. *Економічний вісник НТУУ «Київський політехнічний інститут»*. 2021. № 19. С. 179–180.