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TRANSFORMATION OF THE INNOVATIVE COMPONENT OF MANAGEMENT PROCESSES IN THE CONTEXT OF DIGITALIZATION

ТРАНСФОРМАЦІЯ ІННОВАЦІЙНОЇ СКЛАДОВОЇ УПРАВЛІНСЬКИХ ПРОЦЕСІВ В УМОВАХ ЦИФРОВІЗАЦІЇ

ANNOTATION

The article explores the transformation of the innovative component of management processes in the context of digitalization. Rapid technological progress, globalization, and growing market uncertainty require organizations to revise traditional management approaches. The study highlights the role of digital technologies – such as artificial intelligence, Big Data, IoT, blockchain, and cloud computing – in enhancing management efficiency, flexibility, and decision-making. Special attention is paid to the importance of leadership and organizational culture in ensuring successful adaptation to innovation. A transformation model of organizational culture is proposed, and both international and Ukrainian case studies are analyzed. Key performance indicators and ROI are considered for assessing digital transformation effectiveness. The article provides practical recommendations and outlines areas for further research.

Keywords: digitalization, innovation management, digital technologies, management processes, organizational transformation, leadership, efficiency.

АНОТАЦІЯ

У статті проаналізовано трансформацію інноваційної складової управлінських процесів в умовах цифровізації, яка стала ключовим чинником модернізації сучасних організацій. Стрімкий розвиток цифрових технологій, глобалізаційні виклики, зростання конкуренції та динамічні зміни ринкових умов зумовили потребу перегляду традиційних моделей управління. Автор обґрунтовує, що класичні ієрархічні структури з лінійною логікою прийняття рішень більше не відповідають потребам сучасного бізнес-середовища, оскільки не забезпечують достатньої гнучкості та швидкості реагування. Особливу увагу приділено впливу таких цифрових технологій, як штучний інтелект, аналітика Big Data, Інтернет речей, блокчейн і хмарні обчислення, на управлінські процеси. Встановлено, що саме ці інструменти сприяють підвищенню ефективності, автоматизації рутинних операцій, покращенню якості стратегічного планування та прийняття рішень на основі даних. Автор також розкриває важливість організаційної культури та лідерства як чинників, що забезпечують успішну адаптацію до цифрових змін. Запропоновано трирівневу модель трансформації культури, яка охоплює діагностику готовності, розвиток цифрових компетентностей та поступову інтеграцію технологій. У статті наведено низку практичних прикладів – як міжнародних (Siemens, HSBC, GE), так і вітчизняних (ПриватБанк, МХП, Нова Пошта) – які демонструють реальні результати цифрової трансформації, зокрема зменшення витрат, підвищення продуктивності та покращення клієнтського досвіду. Визначено основні критерії оцінки ефективності цифрових змін: рентабельність інвестицій, рівень автоматизації, прозорість процесів та задоволеність клієнтів. Розглянуто й основні бар'єри впровадження цифрових рішень – нестача ресурсів, спротив змінам, проблеми з кібербезпекою. У підсумку зроблено висновок, що для успішної цифрової трансформації управлінських процесів необхідний комплексний підхід, що охоплює впровадження технологій, зміну управлінської філософії, розвиток людського капіталу та постійний моніторинг результатів.

Ключові слова: цифровізація, інноваційний менеджмент, цифрові технології, управлінські процеси, організаційна трансформація, лідерство, ефективність.

Statement of the problem. In today's environment of rapid digital technology development and globalization, management processes are faced with the need to adapt to new challenges, such as increased competition, market uncertainty, and the need for rapid decision-making. The problem lies in the insufficient transformation of the innovative component of management processes to meet the requirements of the digital economy. Traditional management approaches based on hierarchical structures and linear processes are losing their effectiveness due to their limited flexibility and inability to fully integrate digital tools such as artificial intelligence, big data analysis, the Internet of Things, or blockchain. This creates a gap between the potential of digital technologies and their actual use to improve management efficiency.

The connection between this problem and important scientific and practical tasks is manifested in the need to develop new models and approaches to management that take digital innovations into account. From a scientific point of view, research into this problem contributes

to a deeper understanding of the interaction between digital technologies and management processes, and the formation of a theoretical basis for the creation of adaptive management systems. From a practical perspective, solving this problem allows organizations to increase competitiveness, optimize resources, and improve customer experience. For example, the implementation of digital solutions, as demonstrated in the cases of Siemens and PrivatBank, contributes to process automation and cost reduction.

Analysis of recent studies and publications. Studies on the transformation of management processes in the context of digitalization, as presented in the reference list, highlight the role of technologies, leadership, and organizational culture. Chughtai M.S., Syed F., Naseer S., and co-authors [1] conducted a comprehensive study on the impact of learning organizations on the implementation of management innovations. They demonstrated that an organization's capacity for learning is a critical prerequisite for the development of its innovative potential. One of the main findings of the study is the identification of partial mediation of change self-efficacy in the relationship between learning organizations and organizational innovations. Butsch T., Bell R., Warren V. [2] propose a hybrid approach to crisis decision-making, underscoring the role of digital technologies. Gutiérrez-Broncano S., Rubio-Andrés M., Jiménez-Estévez P., Opute J. [3] focus on cross-functional teams for rapid innovation implementation. Li F., Xu G. [4] explore AI in CRM for automation and personalization. Nenni M. E., De Felice F., De Luca C., Forcina A. [5] analyze AI's impact on project management, optimizing planning. Alzahrani M. A. [6] demonstrates how AI predicts customer behavior, using Amazon as an example. Shevchenko E., Lunsford R. [7] highlight blockchain's role in enhancing financial transparency, as seen in JPMorgan Chase. Parojčić D., Milićević S., Parojčić A. [8] note the importance of digital platforms for communication. Androcec D. [9] shows how Siemens uses AI to optimize production. Iorgachova M., Kovalova O. [10] analyze AI in PrivatBank for personalization. Reznik N. [11] emphasizes Big Data for logistics optimization. Karp V., Burko I., Murenets I., Polynyak V., Krysovatyy I. [12] stress leadership's role in digitalizing Nova Poshta's logistics. Tan Y. [14] compares digital strategies of Walmart and JD.com, highlighting cost reduction. Research highlights that digital technologies, leadership, and organizational culture significantly enhance management process efficiency, but require strategic adaptation to overcome implementation challenges.

Identification of previously unresolved parts of the general problem. The problem of transforming the innovative component of management processes in the context of digitalization is multifaceted and has been partially explored in scientific literature. However, a number of aspects remain insufficiently covered, which determines the focus of this article. First, there is a lack of comprehensive analysis of how digital technologies such as artificial intelligence, Big Data, IoT, and blockchain affect the innovative aspects of management in the context of their integration into various types of organizations, particularly in the Ukrainian context. Previous studies have often focused on individual technologies or international cases, ignoring the specifics of the local business environment. Second, insufficient attention has been paid to the role of organizational culture and leadership in overcoming the barriers to digital transformation, especially in organizations with traditional management approaches. Third, the problem of developing universal methods for assessing the effectiveness of digital transformations in management processes that take into account both quantitative and qualitative indicators remains unresolved.

Formulation of the purposes of the article. The purpose of the article is to study the transformation of the innovative component of management processes in the context of digitalization, with an emphasis on the integration of digital technologies, the role of leadership and organizational culture, as well as the assessment of the effectiveness of such changes. To achieve this goal, the article sets the following tasks:

– To identify the theoretical foundations of innovation in management and analyze the impact of digital technologies on management processes, comparing traditional approaches with modern challenges.

– To analyze key digital technologies (artificial intelligence, Big Data, IoT, blockchain) as catalysts for management transformation, exploring their practical application based on international and domestic case studies.

– To study the role of leadership and organizational culture in the adaptation of organizations to digital innovations by developing a model for the transformation of organizational culture.

– To evaluate the effectiveness of implementing digital solutions in management processes by proposing evaluation criteria and methodologies adapted to modern conditions.

– To formulate practical recommendations for managers on the implementation of digital innovations and to identify areas for further research in the context of management digitalization.

Presentation of the main research material. Management innovations play a crucial role in modern management, as they ensure organizational flexibility and the ability to adapt to a dynamic external environment. Management innovations refer to new or improved approaches, tools, strategies, or models aimed at enhancing the efficiency of management processes, optimizing

the use of resources, and achieving sustainable competitive advantages. These innovations encompass both the implementation of new technologies and structural changes within the organization, as well as new decision-making methods and approaches to staff interaction.

The role of adaptive leadership as a mediating factor lies in its ability not only to enhance the impact of learning organizations on innovation processes but also to strengthen employees' change self-efficacy. Thus, adaptive leaders play a key role in creating an innovative environment by fostering flexible thinking, openness to new experiences, and readiness for change [1]. Innovations allow organizations not only to adapt to new conditions, but also to shape new market trends, ensuring long-term sustainability. For example, the introduction of new management concepts, such as agile methodologies or customer-centric approaches, demonstrates how innovation contributes to increased efficiency and stakeholder engagement.

Management processes are the foundation of any organization's activities, encompassing planning, organization, motivation, and control. Traditional management approaches based on hierarchical structures, clear division of responsibilities, and linear decision-making were effective in stable economic conditions. They involved strict adherence to established procedures, centralized decision-making, and minimal flexibility in responding to external changes [2]. However, the modern business environment is characterized by a high level of uncertainty, globalization, rapid technological change, and growing demand for personalized products and services. These challenges require management processes to be more adaptive, agile, and innovative. Modern management approaches, such as agile methodologies, decentralized decision-making, and data-driven decision-making, enable organizations to respond more quickly to change, integrate new technologies, and engage employees in innovation processes. For example, using cross-functional teams instead of rigid hierarchies helps solve problems faster and boost creativity [3].

Digital technologies are totally changing innovation processes in management, giving us new tools for analysis, forecasting, and decision-making. Technologies such as artificial intelligence, big data analytics, cloud computing, and automation optimize management functions, reducing the time spent on routine tasks and increasing the accuracy of strategic planning. For example, AI-based customer relationship management systems enable organizations to predict customer behavior and adapt marketing strategies in real time [4]. Digital technologies also facilitate the creation of new management models, such as platform management, where companies use digital platforms to coordinate activities between different participants in the ecosystem. At the same time, digitalization is changing approaches to leadership, requiring managers to develop new skills, such as digital literacy and the ability to manage remote teams. The impact of digital technologies is also evident in the increased transparency of processes, which contributes to better coordination and employee engagement.

Digitalization is the driving force behind the transformation of management processes, and key technologies play a decisive role in this process. Artificial intelligence is used to automate complex tasks such as forecasting market trends, optimizing supply chains, and personalizing the customer experience [5]. Big data analytics allows organizations to process vast amounts of information to identify patterns, which facilitates informed decision-making. The Internet of Things provides real-time monitoring and asset management, which is especially important for manufacturing and logistics companies. Blockchain technologies increase transparency and security in management processes, particularly in supply chains and financial transactions, thanks to decentralized data storage systems. Cloud computing provides flexibility and scalability, allowing organizations to quickly adapt their IT infrastructures to new needs. Together, these technologies create synergies that transform management processes, making them more efficient and data-driven.

Digitalization has already had a significant impact on management processes in various industries. For example, in retail, companies such as Amazon use artificial intelligence and big data to analyze customer behavior, allowing them to optimize their product range and pricing in real time [6]. In the industrial sector, General Electric uses IoT to monitor equipment, reducing downtime and increasing production efficiency. In the financial sector, banks such as JPMorgan Chase use blockchain to speed up transactions and improve data security [7]. In addition, digital platforms such as Slack or Microsoft Teams are transforming internal communications, allowing teams to work remotely and coordinate projects in real time [8]. These examples illustrate how digital technologies are changing traditional management processes, making them faster, more transparent, and more efficient.

The introduction of digital tools into management processes has numerous advantages. First, digitization increases efficiency by automating routine tasks, allowing managers to focus on strategic issues. Second, the use of real-time data facilitates faster and more accurate decision-making. Third, digital technologies improve interactions with customers and partners through personalization and transparency. For example, CRM systems allow you to create customized offers, which increases customer loyalty. However, the implementation of digital tools comes with challenges. High costs for

infrastructure, software, and staff training can be a barrier for small and medium-sized enterprises. In addition, cybersecurity issues arise as the growth of digital data increases the risk of information leaks. Digital transformation also requires changes in organizational culture, which can cause resistance from employees who are accustomed to traditional working methods. Overcoming these challenges requires a strategic approach, including investment in training and the gradual integration of technology.

Digital solutions are actively transforming management processes, as evidenced by numerous examples at both the international and domestic levels. An international example is Siemens, which uses the MindSphere platform based on the Internet of Things to optimize the management of production processes. Thanks to this platform, Siemens monitors equipment in real time, which allows it to predict breakdowns and reduce maintenance costs [9]. In the financial sector, the international bank HSBC has implemented blockchain technology to automate transactions in trade finance, reducing document processing time from several days to several hours. In the domestic context, the Ukrainian bank PrivatBank actively uses artificial intelligence in its CRM system to analyze customer data, which allows it to create personalized financial offers and increase customer engagement [10]. Another example is the Ukrainian agricultural company Myronivsky Hliboproduct, which has implemented Big Data systems to optimize logistics and supply chain management, helping to reduce costs and increase efficiency [11]. These cases demonstrate how digital solutions contribute to the transformation of management processes, increasing their flexibility and effectiveness.

Leadership and organizational culture play a key role in ensuring successful adaptation to digital innovation. Leaders who support digital transformation must demonstrate strategic vision, digital literacy, and a willingness to experiment. For example, effective leaders create an environment where employees are encouraged to learn and use new technologies, which reduces resistance to change. An innovation-oriented organizational culture promotes faster adaptation to digital tools. For example, companies with a flexible culture, such as Google, actively use cross-functional teams and iterative approaches that allow for the rapid implementation of digital solutions. Figure 1 shows a model of organizational culture transformation that includes three key stages: assessing readiness for change, training staff, and integrating digital tools into everyday processes. In the domestic context, companies such as Nova Poshta demonstrate how strong leadership and a culture open to innovation contribute to the rapid implementation of automated logistics management systems [12]. Leaders who invest in employee training and create a culture of openness to change ensure the sustainability of organizations in the digital age.

Assessing the effectiveness of digital transformations is an important step in determining their impact on management processes.

The main evaluation criteria are increased productivity, reduced costs, improved decision-making quality, and increased customer satisfaction. For example, companies can use key performance indicators such as task completion time, percentage of automated processes, or employee engagement levels. In international practice, Walmart evaluates the effectiveness of its digital transformation by analyzing sales and logistics data, which has reduced warehouse management costs by 15% [14]. In Ukraine, Ukrposhta has implemented a digital delivery tracking system, which has increased process transparency and reduced customer request processing time by 30% [15]. ROI analysis and cost comparisons before and after the

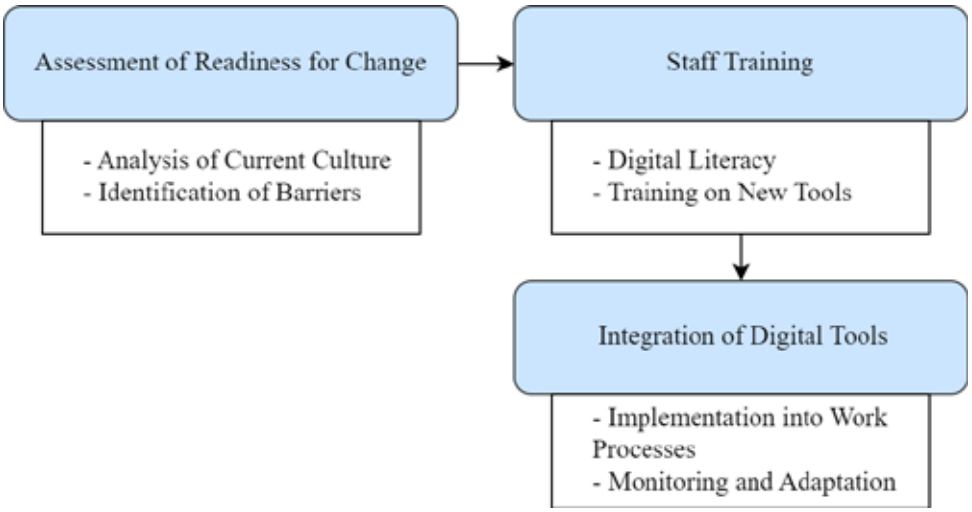

Figure 1. Model of organizational culture transformation

Source: compiled by the author based on data [13]

implementation of digital solutions are also used for comprehensive assessment. However, the need to adapt assessment metrics to the specifics of each organization remains a challenge, as universal indicators do not always reflect the full picture of transformation. Continuous monitoring and flexibility in the choice of assessment methods allow organizations to accurately measure the success of digital initiatives.

Conclusions from the research. Digitalization is a key factor in the transformation of the innovative component of management processes, ensuring increased efficiency, flexibility, and competitiveness of organizations. An analysis of theoretical foundations has shown that innovations in management play a decisive role in adapting to modern challenges, and digital technologies such as artificial intelligence, Big Data, IoT, and blockchain are catalysts for these changes. Practical cases, both international (Siemens, HSBC) and domestic (PrivatBank, MHP), demonstrate that the implementation of digital solutions contributes to process optimization, cost reduction, and improved customer experience. However, the success of digital transformation depends on effective leadership and an organizational culture that is open to innovation, as confirmed by a transformation model that includes readiness assessment, staff training, and technology integration. Evaluating the effectiveness of digital transformations using KPIs and ROI analysis allows organizations to measure results and adjust strategies. For further development of management processes, it is recommended to invest in digital literacy, create a flexible organizational culture, and continuously improve methods for evaluating the effectiveness of digital initiatives. Future research may focus on studying the long-term impact of digitalization on the sustainability of organizations in a dynamic market environment.

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