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INNOVATIVE APPROACHES TO ORGANIZATIONAL MANAGEMENT IN THE DIGITALIZATION ERA

This article studies modern approaches to organizational management in the digitalization era. Its purpose is to analyse, systematize, and generalize these approaches.

The research examines the transformation of organizational management under the influence of economic digitalization in the 21st century. An analysis of the main challenges traditional management models face amid the rapid development of digital technologies, including machine learning, artificial intelligence, big data, and the Internet of Things. The study substantiates the feasibility of shifting from hierarchical to adaptive management models that ensure flexibility, innovativeness, and rapid organizational adaptation to changes in the external environment. The concept of adaptive management as an open system that continuously adjusts its internal processes in response to market demands and technological changes is analyzed. The key factors for the successful functioning of adaptive management are identified: decentralization, delegation of authority, implementation of autonomous workgroups, and the active use of digital technologies for monitoring and analytics.

The exploration of data-driven management features revealed its role as a strategic resource for decision-making, enhancing organizational flexibility, and creating added value. The importance of developing a data-driven organizational culture and implementing integrated information systems to establish evidence-based management practices is emphasized. The study also substantiates the role of digital-era leaders in shaping a vision of the digital future of organizations, promoting innovation, fostering a culture of continuous learning, and enhancing companies' digital maturity. It is noted that effective leadership in the digital era is impossible without creating an atmosphere of trust, readiness for change, and the development of employees' digital competencies. The article also analyses flexible management methodologies that have emerged in response to the challenges of the digital economy and have become essential tools for organizational adaptation to rapid environmental changes. Among the most widespread approaches, Agile, Scrum, and Lean are highlighted, which focus on iteration, flexible planning, constant interaction with stakeholders, and rapid response to new requirements. The research concludes that adaptive management, data-driven approaches, digital transformation leadership, and flexible methodologies are the key success factors for organizations in the digital economy. At the same time, modern management in the digital age requires a comprehensive approach that combines technological innovations, new leadership styles, a shift to open organizational models, and knowledge management.

Keywords: organizational management, digitalization, adaptive management, data-driven management, digital leadership, flexibility, digital transformation.

МЕЛЬНИК Антон

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ІННОВАЦІЙНІ ПІДХОДИ ДО МЕНЕДЖМЕНТУ ОРГАНІЗАЦІЙ В ЕПОХУ ЦИФРОВІЗАЦІЇ

Статтю присвячено вивченню сучасних підходів до менеджменту організацій в епоху цифровізації. Мета статті полягає в аналізі, систематизації та узагальненні підходів до менеджменту організацій в епоху цифровізації.

В дослідженні розглянуто трансформацію організаційного менеджменту під впливом цифровізації економіки у XXI столітті. Представлено аналіз основних викликів, що постають перед традиційними моделями управління в умовах стрімкого розвитку цифрових технологій, зокрема машинного навчання, штучного інтелекту, великих даних, Інтернету речей, тощо.

В дослідженні обґрунтовано доцільність переходу від ієрархічних до адаптивних моделей менеджменту, які забезпечують гнучкість, інноваційність та швидку адаптацію організацій до змін зовнішнього середовища. Проаналізовано концепцію адаптивного менеджменту як відкритої системи, що безперервно налаштовує свої внутрішні процеси відповідно до вимог ринку та технологічних змін. Виявлено ключові чинники успішного функціонування адаптивного менеджменту: децентралізацію, делегування повноважень, впровадження автономних робочих груп та активне використання цифрових технологій для моніторингу і аналітики.

Дослідження особливостей дата-орієнтованого менеджменту дозволило виявити його роль як стратегічного ресурсу для прийняття рішень, підвищення гнучкості організацій та створення доданої вартості. Підкреслено важливість розвитку дата-орієнтованої організаційної культури та впровадження інтегрованих інформаційних систем для формування доказової управлінської практики. Також в дослідженні обґрунтовано роль лідерів цифрової епохи у формуванні бачення цифрового майбутнього організацій, стимулюванні інновацій, розвитку культури безперервного навчання та підвищенні цифрової зрілості компаній. Виявлено, що ефективне лідерство у цифрову епоху неможливе без створення атмосфери довіри, готовності до змін та розвитку цифрових компетенцій співробітників. В статті також проаналізовано гнучкі методології управління, що виникли у відповідь на виклики цифрової економіки та стали важливим інструментом адаптації організацій до швидких змін середовища. Серед найпоширеніших підходів визначено Agile, Scrum та Lean, які акцентують увагу на ітеративності, гнучкості планування, постійній взаємодії зі стейкхолдерами та швидкому реагуванні на нові вимоги.

Дослідження дозволило прийти до висновку, що адаптивний менеджмент, дата-орієнтовані підходи, лідерство цифрової трансформації та гнучкі методології виступають ключовими чинниками успіху організацій у цифровій економіці. В свою чергу, сучасний менеджмент у цифрову епоху потребує комплексного підходу, який об'єднує технологічні інновації, нові стилі лідерства, перехід до відкритих моделей організації діяльності та управління знаннями.

Ключові слова: менеджмент організацій, цифровізація, адаптивний менеджмент, дата-орієнтоване управління, цифрове лідерство, гнучкість, цифрова трансформація.

PROBLEM STATEMENT

The current stage of development of the world economy is characterized by the dynamic introduction of digital technologies in all spheres of public life, which necessitates a rethinking of approaches to the management of organizations. Digitalization, which includes such technologies as artificial intelligence, Big Data, Internet of Things, cloud computing, blockchain, etc., radically changes the external environment of the functioning of organizations and the internal processes of managerial decision-making.

Under such conditions, traditional management models and methods lose effectiveness since they do not provide sufficient flexibility, adaptability, and innovation. Organizations that do not integrate digital tools and approaches into the management system face the risk of reduced competitiveness, loss of market positions, and reduced productivity. At the same time, innovative approaches to management open new opportunities for improving the efficiency of organizational activity, which determines the relevance of the study

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

A significant contribution to the development of organizational management concepts in the digital age was made by Berghaus S. [16], Wamba S. [2], Womack J. [13], Hess T. [8], Davenport T. [5], Dugina E. [14], Yedinak M. [1], Karaboga T. [6], Kane G. [10], Miharjo L. [7], Müller O. [3], Olshak C. [4], Rigby D. [12], Feroz A. [15], Schwaber K. [11] and other leading researchers.

Despite scientists' significant interest in management in the context of digital transformation, some aspects remain unaddressed. In particular, the existing approaches to the management of organizations in the era of digitalization require a thorough analysis, and the issues of forming a digital culture, managing changes in the context of digitalization, and developing new competencies among managers remain insufficiently studied. Therefore, there is a need for a thorough analysis of innovative approaches to managing organizations in the context of digitalization to form effective management strategies adapted to the challenges of the digital economy and the modern business environment.

The article aims to analyze, systematize, and generalize approaches to organizational management in the digital era.

PRESENTATION OF THE MAIN RESULTS OF THE STUDY

Digitalization has become the key to transforming the economy, society, and organizational management in the 21st century. The introduction of digital technologies, including machine learning, artificial intelligence, big data, cloud computing, and the Internet of Things, has led to radical changes in business models, decision-making processes, and the structure of organizations. These changes require managers to adopt new management approaches that provide flexibility, innovation, and adaptability in a fast-changing environment [1].

Traditional management models focused on stability and predictability have proven insufficiently effective in digital transformation. This necessitates the development and implementation of innovative approaches to management that consider the specifics of the digital age and contribute to increasing organizations' competitiveness.

Thus, the digitalization of the economy radically transforms the concepts, principles, and tools of organizational management. Modern scientific literature emphasizes the need to develop new management models corresponding to the realities of the digital age. Foreign scientists focus on several key approaches to management in digitalization.

Research by Yedinak M., Chacon V., Kuzniarska A., and Mania K. showed that hierarchical, formalized management structures, which were effective in stable conditions, are now unable to adapt to rapid changes in the external environment quickly. The authors substantiated the feasibility of the transition to an adaptive type of management, which provides for organizational flexibility, strategic mobility, and openness to innovations [1]. Adaptive governance is formed based on decentralization, delegation of authority, self-organization of teams, and using digital technologies in analysis, forecasting, and managerial decision-making. Within the framework of this approach, the organization is considered an open system that constantly interacts with the dynamic environment and is in the mode of continuously adjusting internal processes to its requirements (Fig. 1).

We fully agree that adaptive management in the digital age is based on the flexibility of the organizational structure, which is expressed in the ability to rebuild communication channels quickly, transform team relationships, and promptly change priorities depending on current challenges. Of particular importance is the introduction of autonomous working groups that can independently determine how to achieve goals, make tactical decisions, and provide feedback to the strategic management system. In our opinion, this approach offers high reactivity and speed of adaptation of the entire organization.

In addition, introducing digital monitoring and analytics tools is an indisputable condition for the effective functioning of adaptive management. In this context, it is advisable to use Business Intelligence systems, platforms for Big Data integration, and predictive analysis technologies that allow management to quickly identify trends, vulnerabilities, and growth points. Using these tools, organizations create databases for data-based decision-making that significantly increase the validity and effectiveness of managerial actions.

It is important to emphasize that adaptive management is not a universal model; instead, it acts as a framework that requires constant modernization in response to changes in external and internal factors. Its application

is appropriate in the context of high-tech enterprises, innovative industries, startups, and organizations focused on digital markets. After all, flexibility, the ability to transform quickly, and innovative orientation determine organizations' competitiveness in the digital age. Thus, the concept of adaptive and agile management is a strategic response to the challenges of digital transformation and requires new thinking, digital competence of managers, and reformatting of management processes in the direction of speed, openness, and analytics.

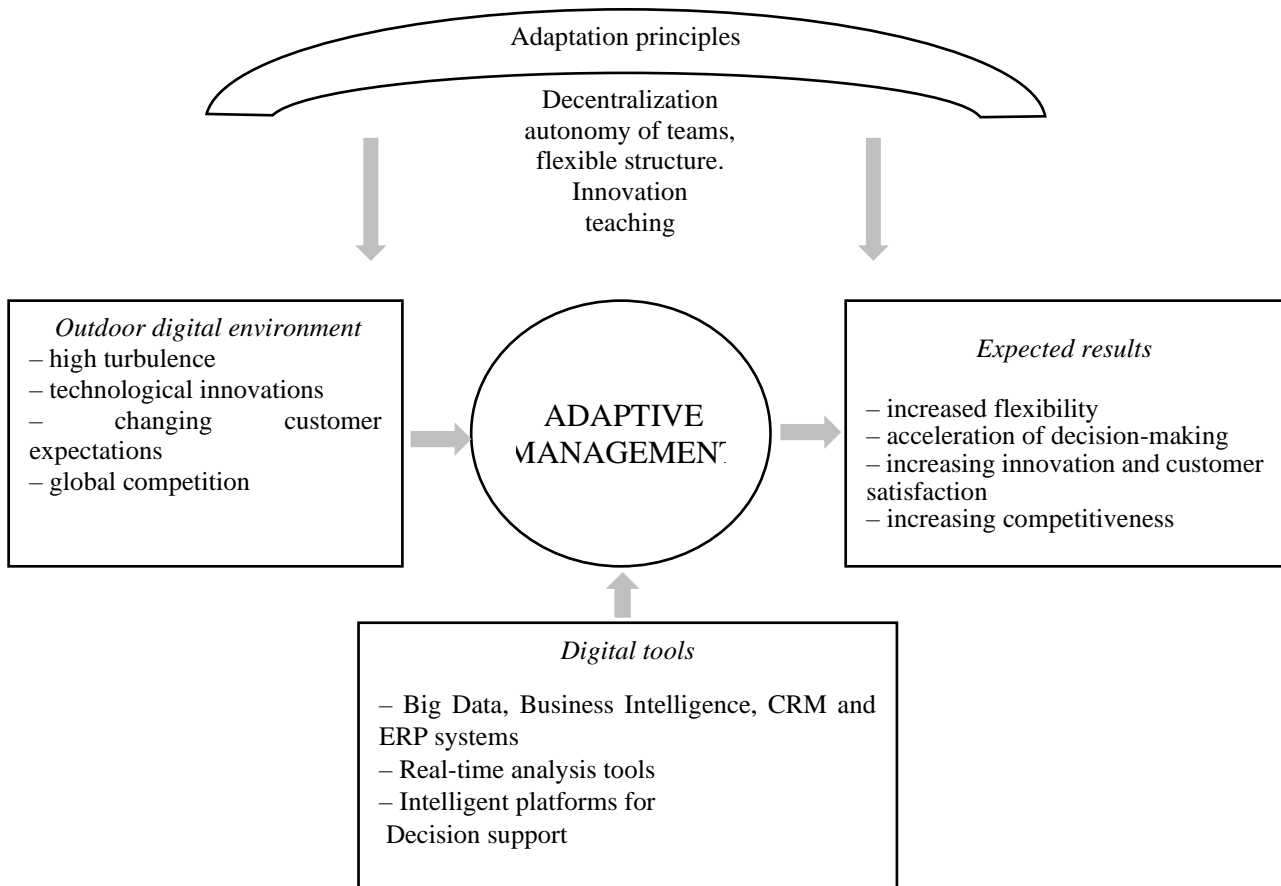


Fig. 1. The concept of adaptive management in the era of the digital economy

Source: compiled by the author according to [1]

In the context of digital transformation, modern organizations are faced with an unprecedented amount of information coming from various sources, including internal operating systems to external digital platforms. Therefore, data becomes not just a tool for supporting decision-making but a critical strategic resource that determines organizations' competitiveness, innovation, and adaptability. Scientists Wamba S. F., Gunasekaran A., Akter S., and others note that organizations that can effectively transform large amounts of data into relevant knowledge receive significant advantages in planning, resource management, risk identification, and creating value for customers [2].

Data-driven management is based on the concept of using evidence-based, analytically based approaches to managerial decision-making. It requires implementing integrated information systems and enterprise knowledge management platforms that ensure the transformation of raw data into strategically important information. In turn, managers' traditional intuition or experience is gradually supplemented or even replaced by accurate, automated data processing tools, which significantly reduces the level of subjectivity in the decision-making process.

A significant contribution to the development of the concept of data-oriented management was made by scientists Müller O., Fey M., Brooke J. [3], Olshak C. [4], Davenport T. G., and Bean R. [5] concluded that data-driven management contributes to increased operational efficiency, flexibility in responding to market changes, and improved customer satisfaction. Scientists [5] emphasize that in a highly competitive world, those organizations that do not just collect data but actively integrate analytics into their strategies and business models win. Olshak Ts. [4] adds that the key to successfully implementing data-centric approaches is the development of an organizational culture focused on data, transparency, responsibility, and learning.

It is important to emphasize that the implementation of data-driven management requires technological transformations and profound organizational changes, including the development of digital competencies of employees, the revision of the knowledge management system, the construction of cybersecurity infrastructure, the formation of interdisciplinary teams of analysts, IT specialists, and business leaders. Karaboga T. and Zehir J. also emphasize the importance of creating a culture where data is perceived as a value at all levels of the hierarchy and not

as a technical tool that applies only to IT departments [6]. In our opinion, data-oriented management is not just a modernization of management processes but a radical change in the management paradigm from reactive to proactive, intuitive to analytical, and fragmented to integrated.

A separate group of scientists believes that in today's digital environment, it is not enough for organizations to integrate new technologies; for success, it is necessary to form a new type of management culture focused on innovation, adaptability, and sustainable learning. In this context, scientists Miharjo L., Sasmoko S., Alamsjah F., Jap E. emphasize that digital transformation requires the emergence of a special category of leaders, in other words, leaders of digital transformation [7]. Such leaders must have a high level of technical competence and, necessarily, a strategic vision of the organization's development in the digital economy; their role is:

- formation of a vision of the company's digital future;
- stimulating innovative initiatives;
- development of a culture of continuous learning;
- strengthening the digital maturity of the organization.

A distinctive feature of digital transformation leaders is their ability to combine the flexibility of thinking, technological literacy, and human orientation. As Hess T., Matt K., Benlian A., and Visböck F. emphasize, leaders of the digital age must demonstrate "double thinking" while evolving existing business models and experimenting with new digital approaches. Scientists have substantiated that this requires high emotional intelligence, the ability to create a motivational environment for teams, and actively support cross-functional initiatives [8].

Effective leadership in digital transformation is impossible without creating an atmosphere of trust and readiness for change at all organizational levels. Leaders must be able to work under uncertainty, make data-driven decisions quickly, and invest in developing employees' digital competencies [9].

Additionally, Kane G. K., Palmer D., Phillips E. N., Kieron D., and Buckley N. argue that digital leaders play a critical role in overcoming the resistance to change often occurring in organizations during the digital transformation phase. They emphasize the importance of constant communication, involving employees in the change process, and building a clear digital strategy that combines technological innovation with the company's business goals [10].

Therefore, digital transformation leadership is a complex multi-level phenomenon that requires managers not only technical expertise but also a deep understanding of organizational behavior, changing corporate culture, and strategic thinking in the context of new digital challenges. Digital transformation leaders, forming a vision of the organization's digital future, stimulating a culture of continuous learning and openness to change, create the necessary prerequisites for implementing agile methodologies that become a tool for implementing strategic digital leadership initiatives.

According to Schwaber K. and Sutherland J., the implementation of agile methodologies, such as Agile and Scrum, is one necessary condition for the successful digital transformation of organizations. These methodologies provide flexibility in processes, focus on creating value for the client, increase teamwork efficiency, and allow rapid adaptation to changes in the environment [11].

A feature of Agile approaches is the iterative nature of project management, which allows organizations to quickly respond to user feedback and gradually improve the product or service. Scrum, as one of the most common Agile implementations, involves:

- creation of autonomous cross-functional teams;
- regular planning of sprints;
- continuous improvement of processes through retrospectives.

Thus, the horizontality of communications and the independence of teams are becoming important factors in ensuring the high speed and quality of innovative changes. Research by Rigby D. K., Sutherland J., and Takeuchi H. [12] showed that organizations that systematically apply agile methodologies show higher performance, innovation, and customer satisfaction rates compared to traditional structures. The authors also emphasize the importance of creating a culture of trust, openness, and collaborative problem-solving as prerequisites for the successful use of Agile.

The lean approach complements agile methodologies, which focus on eliminating waste and maximizing customer value creation. Womack J. P. and Jones D. T. emphasize that the Lean philosophy allows you to optimize processes, reduce the time of product development, and increase the company's overall efficiency [13]. In the digital context, Lean principles are highly relevant to resource management, organization of digital processes, and building customer-oriented business models.

The successful implementation of agile methodologies (Agile, Scrum, and Lean) creates prerequisites for more profound organizational changes to increase business processes' flexibility, adaptability, and innovation. However, to fully realize the potential of digital transformation, it is necessary to change management practices and transform organizational structures. According to the study by O. Bazarova and E. Dugina, digital transformation stimulates the development of new activities, particularly network organizations and virtual teams [14]. Such forms of organization allow you to ensure a high speed of information exchange, reduce time and transaction costs, and increase flexibility and speed of response to changes in the external environment. Network organizations are characterized by a decentralized structure in which independent units or individual participants unite to achieve common goals through active interaction using modern information and communication technologies. Virtual teams,

in turn, allow you to unite specialists from different geographical regions within a single project or task [14].

Kane G. K., Palmer D., and others share a similar opinion [10]. They note that the organizations of the future are flexible, open to cooperation networks, and constantly adapting through the active use of digital platforms and cloud technologies. Scientists emphasize the importance of creating an ecosystem of partnerships and integrating external and internal resources through digital channels.

Feroz A. K., Zo H., and Chiravuri A.'s work [15] focuses on the evolution of organizational models in the digital age, emphasizing the need to use the principles of open innovation, crowdsourcing, and crowdsourcing structures to accelerate the development of new products and services.

At the same time, research by Berghaus S. and Buck A. [16] indicates that a successful digital transformation of the organizational structure requires not only technological changes but also a radical change in corporate culture, leadership style, and people management mechanisms. Creating organizations capable of self-organization and self-development under constant uncertainty is also essential. Thus, innovative organizational structures in the digital age are the basis for ensuring the dynamic sustainability of enterprises, creating added value, and increasing their competitiveness in the global market.

CONCLUSIONS

The innovative approaches to managing organizations in the era of digitalization considered in the study form a new management paradigm based on adaptability, flexibility, leadership, and data orientation. Adaptive management allows organizations to respond to constant changes in the external environment quickly, ensuring management's decentralization and autonomous teams' use. Data-centric management transforms the decision-making process, turning information flows into strategic resources for development using digital platforms. Digital transformation leadership, in turn, involves technical awareness and the ability to form a vision of the digital future and develop a culture of innovation and continuous learning. Agile methodologies (Agile, Scrum, and Lean) are becoming essential for increasing the speed of organizational change and focusing on creating value for the client. Digitalization also stimulates the emergence of innovative organizational structures - network organizations and virtual teams, which provide flexibility, reduce transaction costs, and increase the efficiency of information flows. The considered innovative approaches to management are not just an adaptation to new technological realities but a fundamental transformation of management concepts, structures, and processes that will determine the success of organizations' future success. In our opinion, modern management in the digital age requires an integrated approach that combines technological innovations, new leadership styles, the transition to open models of organization of activities, and knowledge management.

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