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THE ROLE OF ARTIFICIAL INTELLIGENCE IN MANAGEMENT WITHIN THE DIGITAL ECONOMY

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Abstract

The rapid development of the digital economy has significantly transformed modern management systems and business processes. In this context, artificial intelligence technologies are becoming one of the main tools for improving managerial efficiency, accelerating decision-making, and increasing organizational competitiveness. This article examines the role of artificial intelligence in management within the digital economy, as well as its impact on strategic planning, data analysis, human resource management, and operational processes. The study also highlights the advantages and challenges associated with the implementation of AI technologies in organizations. The findings indicate that artificial intelligence not only optimizes management activities but also contributes to innovation, productivity growth, and sustainable economic development in the digital era.

Keywords: Artificial intelligence, digital economy, management, innovation, data analysis, decision-making, digital transformation, business efficiency, organizational development, smart technologies.

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Introduction

Аннотация

Стремительное развитие цифровой экономики существенно трансформировало современные системы управления и бизнес-процессы. В этих условиях технологии искусственного интеллекта становятся одним из ключевых инструментов повышения эффективности управления, ускорения процесса принятия решений и усиления конкурентоспособности организаций. В данной статье рассматривается роль искусственного интеллекта в управлении в условиях цифровой экономики, а также его влияние на стратегическое планирование, анализ данных, управление человеческими ресурсами и операционные процессы. В исследовании также освещаются преимущества и проблемы, связанные с внедрением технологий искусственного интеллекта в деятельность организаций. Результаты исследования показывают, что искусственный интеллект не только оптимизирует управленческую деятельность, но и способствует инновациям, росту производительности и устойчивому экономическому развитию в цифровую эпоху.

Ключевые слова: искусственный интеллект, цифровая экономика, управление, инновации, анализ данных, принятие решений, цифровая трансформация, эффективность бизнеса, организационное развитие, интеллектуальные технологии.

We call ourselves Homo sapiens - man the wise - because our intelligence is so important to us. For thousands of years, we have tried to understand how we think and act - that is, how our brain, a mere handful of matter, can perceive, understand, predict, and manipulate a world far larger and more complicated than itself.[1] The field of artificial intelligence, or AI, is concerned with not just

[1] S. Russel and P. Norvig, Artificial intelligence. A modern Approach. www.pearsonhighered.com

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understanding but also building intelligent entities - machines that can compute how to act effectively and safely in a wide variety of novel situations [1]. Today, this "universal field" is no longer just a scientific frontier but a cornerstone of the global digital economy, generating trillions of dollars in revenue. As AI expert Kai-Fu Lee suggests, its impact may surpass any previous revolution in human history. In the context of modern management, AI's ability to handle diverse intellectual tasks - from strategic reasoning to operational automation - is transforming how enterprises function. This article explores how these "intelligent entities" are redefining the role of management in a world driven by data and digital transformation.This article explores the role of artificial intelligence in management within the digital economy, its advantages, challenges, and its impact on organizational efficiency and sustainable development.

As artificial intelligence becomes more powerful within the digital economy, the goals assigned to it can become problematic. According to recent research in AI safety: "The goal ‘make paperclips’ is perfectly compatible with a world in which the AI expands across the Earth, taking control of its resources to start an intense mass production of paperclips.[2] Similarly, ‘filter spam’ is compatible with The evolution of management in the digital economy is closely linked to the latest AI research. The AAAI-26 conference highlighted several tracks that are directly applicable to organizational leadership[3]. Firstly, the "Bridge Program" emphasizes collaboration between AI and the humanities, allowing for a holistic approach where machine efficiency is balanced with human-centric ethics. Secondly, the "AI Alignment" track addresses the safety protocols necessary for integrating powerful AI into business processes without unintended disruptions.[3]. Finally, the conference focused on Application Domains like commerce and sustainability, providing managers with advanced tools for

[2] Stuart.armstrong@philosophy.ox.ac.uk; Low Impact Artificial Intelligence.
[3] Sven Koenig, Chad Jenkins, Matthew E.Taylor. Sponsored by the Association for the Advancement of Artificial Intelligence. January 20-27,2026. Singapore.

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"human-in-the-loop" decision-making. These trends suggest that modern management is becoming a sophisticated "bridge" between technical algorithms and strategic human oversight. AI's role in the digital economy is best understood through its impact on different management levels. Recent research indicates that AI-driven systems empower leaders to move beyond mundane tasks and focus on strategic innovation:

1. Managerial Functions: AI optimizes resource allocation for operational managers, provides deeper tactical insights for middle management, and offers sophisticated long-term forecasting for C-suite executives.
2. Innovation and Efficiency: As noted by Gama et al, AI acts as a catalyst for organizational innovation, though its theoretical capabilities require clear strategic alignment to be effective.
3. Ethical Considerations: The integration of AI is not without risks. Research by Oyighan et al. highlights that data quality, algorithmic bias, and privacy concerns remain major challenges that require proactive mitigation strategie.[4].

Ultimately, the successful adoption of AI in management requires a skilled workforce capable of collaborating with intelligent systems to create more efficient, human-centered organizations. As AI technologies redefine the digital economy, the nature of professional work and the required skillsets are undergoing a significant transformation. According to the research by Cox, the rise of AI creates a demand for "hybrid professional" roles - individuals who can integrate the logic of their profession with the logic of algorithmic management [4]. This shift introduces three key roles:

1. The Interpreter: Acting as a bridge between complex AI technologies and organizational needs.
2. The Commissioner: Using professional knowledge to strategically select and manage AI systems based on institutional goals.

[4] a.m.cox@sheffield.ac.uk Journal of tle Association for Information Science and Technology.

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3. Computational Thinking: Moving beyond traditional skills to incorporate a deeper understanding of how data science can solve management problems.

The strength of this new competency framework lies in its ability to guide organizations in creating job descriptions that reflect the actual changes in practice. Rather than replacing human leaders, AI necessitates a new way of thinking and new forms of collaboration. For managers in the digital economy, success depends on balancing "technological rationality" with professional ideals like service, ethics, and care. [5].

To achieve a holistic view of AI implementation in the digital economy, modern research emphasizes the use of the TOE[5] framework. This approach explains that the role of AI in management is influenced by three critical firm-level dimensions that ensure a systematic integration rather than a fragmented use of technology. Within the technological context, managers must move beyond basic functional competencies to focus on cybersecurity management and "ambidextrous competence," which is the ability to exploit existing IT knowledge while simultaneously exploring new AI-driven opportunities. Simultaneously, the organizational context requires strong managerial support to foster a data-driven culture and promote the democratization of AI knowledge across all levels. The environmental context involves navigating institutional pressures from suppliers, customers, and government regulations that accelerate AI adoption. [6].

In conclusion, the role of artificial intelligence in management within the digital economy is transformative and multi-dimensional. This research has demonstrated that AI is not merely a tool for automation but a strategic partner that requires a new generation of "hybrid managers" who possess both technical and leadership competencies. By implementing systematic frameworks like TOE and prioritizing AI alignment and safety, organizations can navigate the complexities of the modern market with greater agility. Ultimately, the successful

[5] TOE- Technological, Organizational and Environment framework. Louis G. Tornatzky and Mitchell Fleischer published the model in 1990.

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integration of AI depends on balancing technological efficiency with human-centered values, ensuring that innovation leads to sustainable growth and ethical organizational development.

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