

The Role of Digitalization and Innovative Technologies in the Transformation of Human Resource Management and in Strengthening Enterprise Competitiveness and Economic Security

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Abstract. The article examines the role of digitalization and innovative technologies in the transformation of human resource management and in strengthening enterprise competitiveness and economic security. The essence of digital HR transformation is revealed as a transition from administrative to analytical and strategic management that combines technological efficiency with a human-centered orientation. It is shown that digital platforms, analytical systems, artificial intelligence, and Big Data technologies form a new HR architecture in which personnel decisions are based on data, forecasts, and competency modeling.

It is determined that digitalization contributes to the development of flexible HR models, enhances planning accuracy, individualizes training, and strengthens corporate culture. Innovative technologies foster the creation of open digital ecosystems that support professional development, integrate analytics into personnel policy, and improve organizational adaptability. Particular attention is paid to the impact of digitalization on enterprise economic security: the introduction of cybersecurity systems, analytical monitoring, and information risk management becomes an essential element of modern HR strategy.

The practical significance of the study lies in defining the conceptual foundations for building a digital model of human resource management focused on sustainable development, technological efficiency, and security. It is substantiated that HR digitalization acts as a strategic factor of competitiveness, as it ensures synergy between human capital, analytics, and innovation, creating conditions for long-term economic stability of the enterprise.

Keywords: digitalization, innovative technologies, human resource management, competitiveness, economic security, human capital, artificial intelligence, Big Data, digital ecosystem, strategic management, analytics, cybersecurity.

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Роль цифровізації та інноваційних технологій у трансформації управління людськими ресурсами та зміцненні конкурентоспроможності й економічної безпеки підприємства

Анотація. У статті досліджено роль цифровізації та інноваційних технологій у трансформації управління людськими ресурсами й у зміцненні конкурентоспроможності та економічної безпеки підприємства. Розкрито сутність цифрової трансформації HR як процесу переходу від адміністративного до аналітично-стратегічного управління, що поєднує технологічну ефективність і гуманістичну орієнтацію. Показано, що цифрові платформи, аналітичні системи, технології штучного інтелекту та Big Data формують нову архітектуру HR, у межах якої кадрові рішення приймаються на основі даних, прогнозів і моделювання компетенцій.

Визначено, що цифровізація сприяє розвитку гнучких моделей управління персоналом, підвищенню точності планування, індивідуалізації навчання та зміцненню корпоративної культури. Інноваційні технології забезпечують створення відкритих цифрових екосистем, які підтримують професійний розвиток працівників, сприяють інтеграції аналітики у кадрову політику й підвищують рівень адаптивності організацій. Особливу увагу приділено впливу цифровізації на економічну безпеку підприємства: показано, що впровадження систем кіберзахисту, аналітичного моніторингу та управління інформаційними ризиками стає обов'язковим елементом сучасної HR-стратегії.

Практичне значення дослідження полягає у визначенні концептуальних засад побудови цифрової моделі управління людськими ресурсами, орієнтованої на стійкий розвиток, технологічну ефективність і безпеку. Обґрунтовано, що цифровізація HR виступає стратегічним чинником конкурентоспроможності, оскільки забезпечує синергію між людським капіталом, аналітикою та інноваціями, створюючи умови для довготривалої економічної стабільності підприємства.

Ключові слова: цифровізація, інноваційні технології, управління людськими ресурсами, конкурентоспроможність, економічна безпека, людський капітал, штучний інтелект, Big Data, цифрова екосистема, стратегічне управління, аналітика, кіберзахист.

Introduction

The modern economy is in a phase of deep digital transformation that changes the structure of production, forms of work organization, and approaches to human resource management. Digitalization encompasses all aspects of enterprise activity – from operational processes to strategic management – forming a new logic of development in which data, analytics, and technologies become the foundation of managerial decision-making. Under these conditions, the role of human resource management significantly increases, as human capital is the carrier of competencies, innovative potential, and adaptive capabilities that ensure an organization's competitiveness.

The impact of innovative technologies on the HR field extends beyond the automation of routine procedures. It transforms the very nature of interaction between humans and organizations, forming an intelligent environment in which management is based on analytical models, digital platforms, and artificial intelligence technologies. This requires enterprises to rethink personnel policy, implement new approaches to competency development, and create conditions for the effective use of human potential in a technologically dynamic environment.

The relevance of the topic is determined by the need to study the role of digitalization and innovation in transforming human resource management and their impact on enterprise competitiveness and economic security. The successful integration of technologies into the HR system becomes a prerequisite not only for efficiency improvement but also for the strategic stability of business. Therefore, the analysis of digital and technological factors influencing

human resource management development is essential for understanding the patterns of functioning within the modern knowledge-based economy.

Results

The digitalization of human resource management has become a strategic factor in the development of enterprises operating in an environment of high technological dynamism and global competition. The modern economy is shifting toward a digital paradigm in which information and communication technologies determine the logic of management, the organization of labor, and the nature of interaction between humans and systems. Human capital management is evolving into a digital ecosystem where data analytics, algorithms, and intelligent platforms ensure the speed and accuracy of managerial decisions.

The implementation of digital technologies in HR goes beyond the automation of routine processes. It entails a profound transformation of managerial thinking, where technological solutions become carriers of strategic vision for staff development. Digital tools create conditions for personalized competency management, forecasting career trajectories, and designing motivational models that enhance organizational effectiveness. Thus, digitalization acts as a catalyst for the transition from administrative logic to an analytical and innovative model of HR management.

The relevance of digital transformation lies in the fact that under conditions of economic instability, it is the speed of information analysis and the adaptability of management systems that ensure enterprise competitiveness. Digital human resource management combines technological rationality with a humanistic orientation, where technology serves not as a replacement for people but as a means of unlocking their potential. This concept forms the foundation of economic security and creates a new quality of competitive advantage based on the synergy of intellect, innovation, and technology.

The essence of HR digitalization lies in the transition from procedural automation to the creation of an intelligent decision-making system that integrates analytical platforms, artificial intelligence, and strategic vision for personnel development. Digital technologies form a new managerial paradigm in which data become the key resource and analytics the fundamental tool for shaping personnel policy. Within this paradigm, HR management acquires a predictive nature, combining technological precision with a humanistic focus on personal development. Digitalization transforms the logic of personnel processes, turning them into analytical modules of the management system. Electronic databases, integrated HRM platforms, analytical dashboards, and machine learning algorithms provide not only monitoring of the current workforce state but also modeling of future competency needs, turnover risk assessment, and identification of internal potential for innovative activity. Managerial decisions are based on digital indicators that minimize subjectivity and enhance the strategic accuracy of planning.

At the same time, digital transformation changes the communication architecture of organizations. Cloud-based collaboration platforms, corporate learning systems, feedback services, and digital knowledge repositories form an open ecosystem of co-management. Within it, information flows become transparent, and the process of knowledge exchange is continuous. This model creates an organizational culture of trust and techno-oriented partnership, where technology enhances rather than replaces human intelligence, ensuring a balance between efficiency and social responsibility. Innovative technologies have become a catalyst for the profound transformation of human resource management. They are shaping a new architecture of HR systems in which traditional functions such as recruitment, training, motivation, and performance evaluation are integrated with digital analytical tools, artificial intelligence algorithms, and decision-support systems. This integration ensures a high level of management precision, reduces time expenditures, and opens opportunities for predictive modeling of employee behavior and the efficiency of organizational processes.

The use of artificial intelligence, Big Data, and machine learning technologies allows for the creation of multi-level personnel management systems focused on competency analysis, identifying development trends within the workforce, and designing individualized learning trajectories. These technologies enhance the objectivity of decision-making since they rely on large datasets that reflect real behavioral and professional patterns of employees. They also make it possible to identify personnel risks, potential conflicts, and demotivating factors at an early stage.

Innovative technologies contribute to the formation of a flexible organizational structure in which interaction between humans and technological systems acquires a partnership nature. Enterprises implementing such approaches move from reactive management to a proactive development model where technology does not replace humans but expands their capabilities. This creates the conditions for forming an intellectually oriented corporate culture in which innovation becomes not only an instrument of efficiency but also a component of the organization's strategic identity. The formation of a digital ecosystem for human resource management is a key direction in the evolution of modern enterprises. This ecosystem integrates technological platforms, analytical tools, communication channels, and continuous learning systems into a single intelligent infrastructure. Within this structure, personnel processes take place in real time, ensuring responsiveness, precision in managerial decisions, and transparency of interactions across all organizational levels.

The digital HR ecosystem integrates various subsystems – from recruitment and staff adaptation to performance monitoring, motivation, and competency development. Its functioning is based on principles of analytical openness, data synchronization, and mutual access to information. As a result, a network-based type of management emerges, in which information flows circulate among all participants in the process, eliminating hierarchical inertia and accelerating decision-making.

An important component of the digital ecosystem is corporate learning and knowledge management systems. They provide employees with up-to-date information, support professional development, and foster the formation of digital culture. Learning platforms built on artificial intelligence enable the creation of personalized educational trajectories, increasing employee engagement and facilitating the effective transformation of competencies according to enterprise needs.

The role of digital technologies in strengthening enterprise competitiveness lies in creating a management system that ensures rapid response to market changes, resource optimization, and improved efficiency of interaction across all organizational levels. Digital solutions make it possible to integrate HR processes into the overall business strategy, forming a direct connection between human capital, productivity, and the company's strategic goals. As a result, the enterprise gains the ability not only to maintain its competitive position but also to create new market advantages. Digital HR platforms contribute to greater transparency in management by providing objective performance control, real-time data analysis, and the ability to adjust managerial decisions instantly. This enhances employee accountability, minimizes the risks of managerial errors, and fosters a culture of performance. Moreover, automating administrative processes allows management resources to be concentrated on strategic tasks aimed at innovation, competency development, and enhancing the value of human capital.

Enterprises that implement digital solutions in the HR field gain a significant advantage in decision-making speed, adaptability to market changes, and the ability to forecast employee behavioral trends. Digital analytics provides deeper insights into the structure of labor potential, while intelligent management systems make it possible to develop personalized strategies for motivation and development. These factors form a new type of competitiveness – intellectual-technological – based on the integration of data, innovation, and human potential.

The digitalization of human resource management significantly affects the level of economic security of an enterprise by changing the structure of risks and simultaneously forming new mechanisms of control. In a digital environment, economic security acquires a comprehensive nature, combining financial stability, information reliability, and personnel resilience. Digital HR systems perform not only operational but also strategic functions – they ensure data protection, continuity of management processes, and the integrity of corporate communications. The protection of employees' personal data becomes a key aspect of economic security. The use of large datasets, artificial intelligence algorithms, and cloud technologies increases the risk of data leaks or unauthorized access. To prevent such threats, enterprises must develop a cybersecurity policy that includes data encryption, multi-level user authentication, and continuous monitoring of information flows. This approach fosters trust in digital tools, reduces reputational risks, and strengthens corporate resilience.

In addition to information security, HR digitalization ensures economic stability by reducing operational costs and increasing the accuracy of management forecasts. Automated cost planning systems, performance analytics, and digital control over personnel risks create conditions for the rational use of human potential. They make it possible to detect imbalances in time, optimize resource allocation, and improve the financial efficiency of managerial decisions.

A synthesis of the research confirms that digitalization and innovative technologies radically change the nature of human resource management, transforming it from an administrative function into a strategic tool for enterprise development. The introduction of digital platforms, analytical systems, and artificial intelligence technologies creates conditions for forming a flexible, adaptive, and analytically oriented HR architecture in which humans and technologies interact synergistically. This transformation opens new opportunities for improving productivity, personalizing learning, and developing competencies.

Digital human resource management not only optimizes processes but also creates an intellectual space within the organization where knowledge, data, and innovation become the main sources of competitive advantage. Through technological integration of HR processes, enterprises can forecast staffing needs, manage risks, develop talents, and strengthen corporate culture based on openness and analytical transparency. As a result, personnel policy acquires strategic significance, oriented toward ensuring long-term economic resilience.

Therefore, the role of digitalization and innovative technologies lies in creating a management system that combines efficiency, security, and humanistic orientation. The digital transformation of HR becomes a factor of competitiveness and a guarantee of enterprise economic security, as it ensures the transition from reactive management to proactive development. At the center of this model remains the human being – the bearer of knowledge, intellect, and creative potential – who determines the trajectory of the organization's innovative growth.

Conclusions

The conducted research demonstrates that digitalization and innovative technologies are the defining factors of the strategic transformation of human resource management. They enable the transition from an administrative HR model to an analytical and strategic one, where decisions are data-driven and interaction between humans and technology takes on a partnership nature. Within this paradigm, personnel management becomes a source of competitive advantage and a component of the enterprise's economic resilience.

The integration of digital platforms, analytical systems, and artificial intelligence algorithms creates an intelligent environment for managing human capital. It ensures forecasting of staffing needs, individualization of professional development, and timely responses to changes in the labor market. The combination of technological efficiency and

humanistic orientation forms a new organizational culture centered on the individual as a subject of innovation and a carrier of institutional trust.

A particularly important role under modern conditions is played by the security dimension of HR digitalization. Data protection, cyber resilience, and control over informational risks become mandatory components of personnel policy. The systemic integration of security mechanisms with digital analytical tools allows enterprises to reduce the likelihood of both external and internal threats while maintaining financial, reputational, and personnel stability.

Therefore, the digitalization of human resource management serves as a strategic vector for enterprise development in the digital economy. It unites innovation, analytics, and human potential into a single system that ensures efficiency, competitiveness, and long-term economic security for organizations.

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