Adelaida Karavasili, Student
Taras Shevchenko National University of Kyiv
Kyiv, Ukraine

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THE IMPACT OF DIGITALIZATION ON THE COMPETITIVENESS OF ENTERPRISES AMID A CHANGING MARKET ENVIRONMENT

The current stage of development of the global and national economies is characterized by a high degree of dynamism, uncertainty, and constantly changing external factors. The transformation of the market environment under the influence of macroeconomic fluctuations, geopolitical challenges, and rapid technological progress requires economic entities to fundamentally rethink traditional approaches to ensuring their competitiveness. In the traditional economy, competitive advantages were largely determined by the availability of material resources, production capacity, and access to raw materials.

However, in today's environment, innovation, speed of adaptation, the level of digital competencies, and the ability to continuously update business models have become decisive factors [2]. Under these circumstances, digitalization ceases to be merely a tool for local automation and becomes a decisive strategic factor for the survival and sustainable development of enterprises [1].

The aim of this study is to conduct a comprehensive analysis of methodological approaches, mechanisms, and challenges related to the impact of digitalization on the formation of long-term competitiveness of enterprises in a dynamic market environment.

The relevance of this study stems from the need for a comprehensive assessment of the impact of digital tools on the development of long-term competitive advantages for enterprises in an unstable market environment [2].

Digitalization is the process of introducing digital technologies into all areas of a company's operations with the aim of improving operational efficiency. Under the influence of digitalization, the traditional management system is transformed: there is a shift from paper-based to electronic document management, from manual to automated systems, and from intuition-based decision-making to data-driven decisions. Digitalization drives a comprehensive transformation of a company's

management system. It ensures the integration of digital tools into planning, monitoring, and decision-making processes, creating a unified digital ecosystem that enhances transparency, adaptability, and the ability to respond to change [5]. The essence of the digital transformation of management systems lies in a comprehensive process of integrating digital technologies into all functional areas of a company's operations, accompanied by changes in management approaches, organizational culture, and business models. Thus, digital transformation shifts the management paradigm, affecting all management subsystems.

Building and enhancing an enterprise's competitiveness in the context of digital transformation is based on a three-pronged set of interrelated scientific approaches [3]:

1. Resource-innovation approach: involves creating competitive advantages through the integration of the latest digital technologies – artificial intelligence (AI), big data, cloud computing, and the Internet of Things (IoT). The integration of these tools makes it possible to optimize operational activities, minimize the human factor, reduce transaction costs, and increase labor productivity.

2. Competency-based approach: focuses on the development of human capital and the cultivation of employees' digital competencies. Competitiveness depends on the ability of staff to work effectively with large datasets, use analytical tools, and quickly adapt to technological updates. Investments in retraining and staff development become a key strategic priority.

3. Institutional approach: views competitiveness as the result of an enterprise's effective interaction with the external digital ecosystem, infrastructure, regulatory environment, and government institutions that support innovation.

In simple terms, the overall level of a company's digital competitiveness (C_d) can be expressed as a functional relationship:

$$C_d = f\left(I_{tech}, E_{proc}, CX, HC_{dig}, A_{mgt}\right) \quad (1)$$

where I_{tech} represents the level of development of digital infrastructure and technologies; E_{proc} represents the efficiency of automated business processes; CX represents the quality of the customer experience and the level of personalization; HC_{dig} represents the level of digital competencies of human capital; A_{mgt}represents adaptability and the speed of data-driven management decision-making. This dependence is

conceptual in nature and reflects the qualitative relationship between the factors rather than a precise quantitative calculation.

Key mechanisms for implementing these approaches include the digital transformation of business processes and the transition to platform-based business models. Digital platforms enable seamless interaction between producers, consumers, and partners within a single environment, significantly lowering barriers to market entry and ensuring omnichannel service delivery.

Table 1

Comparative Analysis of Traditional and Digital Models for Ensuring Business Competitiveness

Comparison Criterion	Traditional Model	Digital-Oriented Model
Key Development Resources	Tangible assets, production capacity, access to raw materials	Information, big data (Big Data), digital technologies, knowledge
Managerial Decision-Making	Based on subjective experience and periodic reporting	Based on real-time data analytics (Data-Driven)
Customer Interaction	Standard, mass communication and limited sales channels	Personalized, omnichannel, based on customer experience analysis (CX)
Nature of Business Model	Linear (production – product sales)	Platform-based, ecosystem, service-oriented (PaaS, SaaS)
Time-to-Market Speed	Long development cycle (waterfall models)	Short cycle (Agile, MVP, continuous product updates)
Human Capital Basis	Narrow professional specialization	Digital competencies (Digital Skills), flexibility, ability to learn

Source: compiled by the author

Along with new opportunities for growth, digitalization gives rise to a number of systemic challenges and risks that require the development of adaptive management mechanisms:

1. Digital inequality: This manifests as unequal access by businesses to high-quality digital infrastructure, high-speed Internet, and the latest technologies, creating unequal starting conditions for competition.

2. Cyber threats and information security risks: The growing volume of digital data increases businesses' vulnerability to cyberattacks, leaks of

confidential information, and financial fraud, which threaten their business reputation and sustainability.

3. Dependence on global technology platforms: The monopolization of digital markets by transnational giants limits the strategic autonomy of domestic enterprises, forcing them to operate under the management rules of global players.

4. Rapid technological obsolescence and a skills shortage: Rapid changes in technological standards shorten the life cycle of solutions and require constant investment in software and hardware upgrades, as well as addressing the shortage of specialists with relevant digital competencies [4].

Thus, in the digital economy, a company's competitiveness ceases to be static and becomes a continuous and multidimensional process of adaptation. Securing a sustainable competitive position requires a harmonious combination of resource-innovation, competency-based, and institutional approaches. To overcome the challenges of digital inequality, cyber threats, and rapid technological obsolescence, enterprises must develop flexible, adaptive strategies, invest in the digital development of their workforce, and build a robust cybersecurity system.

References:

1. Guzhva, V. M., & Postnikova, M. V. (2019). Information systems and technologies in enterprises. KNEU. Available at: https://retfk.edu.rv.ua/wp-content/uploads/2024/03/Guzhova-V-M-Informaczijni-sistemi.pdf

2. Kraus, N. M., & Kraus, K. M. (2018). The digital economy: Trends and prospects for cutting-edge development. *Effective Economy*, no. 1. Available at: http://www.economy.nayka.com.ua/?op=1&z=6047 ;

3. Schwab, K. (2016). The fourth industrial revolution. World Economic Forum. Available at: https://law.unimelb.edu.au/__data/assets/pdf_file/0005/3385454/Schwab-The_Fourth_Industrial_Revolution_Klaus_S.pdf ;

4. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, no. 122, pp. 889–901. DOI: https://doi.org/10.1016/j.jbusres.2019.09.022 ;

5. Yanovska, V., Levchenko, O., Tvoronovych, V., & Bozhok, A. (2019). Digital transformation of the Ukrainian economy: Digitization and transformation of business models. SHS Web of Conferences, 67, 05003. DOI: https://doi.org/10.1051/shsconf/20196705003 .