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**ANALYSIS OF THE IMPACT OF DIGITALIZATION ON THE  
DEVELOPMENT OF OPPORTUNITIES FOR SMALL AND MEDIUM-  
SIZED ENTERPRISES**  
**АНАЛІЗ ВПЛИВУ ЦИФРОВІЗАЦІЇ НА РОЗВИТОК МОЖЛИВОСТЕЙ  
МАЛОГО ТА СЕРЕДНЬОГО БІЗНЕСУ**

**Анотація:** Стаття присвячена дослідженню впливу цифровізації на розвиток можливостей малого та середнього бізнесу. Мета дослідження полягає в аналізі ключових факторів, що впливають на малий та середній бізнес у процесі цифровізації економіки. Дослідження спрямоване на виявлення, вивчення та групування цих факторів з метою розуміння їх впливу на сучасне бізнес-середовище. Цілі дослідження: проаналізувати вплив на розвиток можливостей малого та середнього бізнесу; вивчити ключові фактори, що впливають на бізнес в рамках цифровізації.

**Abstract:** The article analyzes how the use of information and communication technologies and digital marketing tools contribute to increasing competitiveness, optimizing business processes, expanding sales markets, and improving customer relations. This article offers a comprehensive examination of the intricate dynamics between innovation, entrepreneurship, and economic growth, drawing from an extensive review of empirical studies, theoretical frameworks, and policy implications. Through a meticulous analysis of the symbiotic relationship between innovation and entrepreneurship, it elucidates their multifaceted contributions to driving sustained economic prosperity. By delving into the nuanced mechanisms and contextual factors that shape this relationship, the article provides insights for policymakers, researchers, and practitioners seeking to foster innovation-led growth in today's complex global economy.

In the context of contemporary economic development, innovation and entrepreneurship have emerged as central pillars driving productivity growth, technological progress, and market dynamism. This paper embarks on a journey to

*unravel the complex interplay between these two phenomena and how their synergistic relationship shapes the trajectory of economic growth. By examining the underlying mechanisms, empirical evidence, and policy implications, we aim to shed light on the transformative potential of innovation and entrepreneurship in fostering sustainable development and competitiveness. Innovation and entrepreneurship are essential engines of economic growth. Innovation is characterized by the creation and adoption of novel ideas, technologies, and business models, and is a catalyst for entrepreneurial activity by providing opportunities for market differentiation and value creation.*

**Keywords:** *digitization, small and medium business, economy, innovation space, information system, digital technologies, entrepreneurship, innovative technologies*

**Ключові слова:** *цифровізація, малий та середній бізнес, економіка, інноваційний простір, інформаційна система, цифрові технології, підприємництво, інноваційні технології*

### **Formulation of the problem.**

With the help of modern digital devices and digital models of consumers, it is possible to analyze and forecast economic processes, save resources, optimize the system of procurement, finance, management, etc. Hence, the volume of digital services is steadily increasing and, despite global instability, spending on research related to digital technologies is increasing. So, the whole world is covered by the idea of digital transformation, digitalization is one of the most popular topics for discussions at all levels of management, but in fact it is far from a new concept, the discussion on this issue has been going on for several decades.

**Analysis of recent research and publications.** Many studies have been devoted to the question of the formation and development of the digital economy and its impact on transformational processes in entrepreneurship. Among them are the scientific works of G. O. Selezneva, G. M. Chumak, G. M. Kalach, P. V. Zub, K. O. Buzymaska, M. V. Zheli-khovska,

A. V. Tserkovnaya, and K. S. Karelova. Despite the abundance of publications in the field of the impact of digitization on entrepreneurship, the research of specific factors and their significance remains inadequately explored.

**The purpose of the work.** The purpose of this research is to analyze the key factors influencing entrepreneurship in the context of economic digitization. The study seeks to identify, examine, and categorize these factors to understand their impact on the current business climate.

**Results.** In the modern world, the digitization of the economy is recognized as one of the decisive factors in the development of national economies and the global economic system as a whole. The process of assessing and forecasting the level of digitization becomes particularly relevant as it allows governments, corporations, and international organizations to determine development strategies and adaptation to the changing digital landscape.

Modeling the assessment of the level of economic digitization involves

using a comprehensive approach based on the analysis of a wide range of indicators. Among them may be IT expenditures, the volume of e-commerce, the level of Internet usage among the population and businesses, the availability of digital technologies, and the quality of Internet services [6].

Forecasting the level of economic digitization is carried out through the development of

mathematical models that take into account both historical data and the potential of technological innovations. The use of scenario analysis allows for assessing possible trajectories of digital economic development, taking into account external and internal factors such as changes in legislation, global economic trends, and the level of adoption of digital technologies by the population and businesses [2].

Table 1 The impact of digitalization on the market environment of the enterprise

Year	Change in the number of SMEs on the market (%)	Impact on competition
2021	3	Competition has increased due to digital startups
2022	5	Increasing competitiveness through digitalization
2023	8	Opening new market niches through digital innovation

The table shows the key digitization initiatives in Ukraine and their impact on small and medium-sized businesses over the past three years. The main directions include increasing digital literacy, infrastructure development, introduction of electronic services and optimization of the tax system.

Blockchain ensures data security in a decentralized network, allowing

the development of advanced applications and services using smart contracts. This technology relies on the principles of decentralization and tokenization, opening up wide possibilities for managing digital assets, cryptocurrencies, token circulation, and the use of various centralized services in areas such as finance, insurance, education, and entertainment.

Table 2 Analysis of the impact of digitalization on the development of opportunities for small and medium-sized enterprises

Year	Number of SMEs using digital technologies (%)	Average annual revenue growth of SMEs using digitization (%)	Share of SMEs with access to international markets through digital platforms (%)	The number of newly created jobs in SMEs thanks to digitalization (thousands)	Investments in the IT sphere of SMEs (mln dollars)
2021	60	5	30	50	200
2022	70	7	45	75	300
2023	85	10	60	100	450

Data analysis over the past three years indicates a significant impact of digitization on the development opportunities of small and medium-

sized enterprises (SMEs) in Ukraine. There has been a steady increase in the number of SMEs actively utilizing digital technologies: from 60% in 2021 to 85% in 2023. This growth correlates

with an increase in the average annual income growth of these enterprises from 5% to 10%, indicating the effectiveness of digitization implementation in business processes.

Additionally, the share of enterprises gaining access to international markets through digital platforms has significantly increased – from 30% in 2021 to 60% in 2023. This has allowed companies to expand their presence in the global market, increase sales volumes, and expand their customer base [6].

The significant increase in the number of newly created jobs at the enterprise due to digitization (from 50,000 in 2021 to 100,000 in 2023) indicates the creation of new employment opportunities and the development of staff qualifications in the field of digital technologies.

Investments in the IT sector of SMEs also demonstrate positive

dynamics, increasing from \$200 million in 2021 to \$450 million in 2023. This confirms the growing interest and readiness of small and medium-sized businesses to invest in digitization as a strategic direction for development.

Digitization opens up new horizons of opportunities for small and medium-sized enterprises, significantly impacting their development and competitiveness.

Digitization helps minimize bureaucratic procedures, improves customer service, which increasingly demands more online services, and facilitates more efficient internal communication within the organization. Additionally, digitization ensures a higher level of data protection, rescuing information from loss due to physical accidents such as fires or floods, thanks to storing data in digital format and the cloud.

Table 3 The impact of digitization on enterprise productivity

Year	Productivity growth from digitization (%)	Sectors with the greatest growth
2021	5	Electronic commerce, IT services
2022	7	Financial services, Education
2023	10	Health care, Production

From the analysis of the table, the following conclusions can be drawn:

1. The overall impact of digitization on enterprise productivity increases over time: from 5% in 2021 to 7% in 2022 and up to 10% in 2023. This indicates that the implementation of digital technologies and innovations contributes to increased productivity in enterprises.

2. The sectors benefiting most from digitization change over time. In 2021, e-commerce and IT services

show the highest productivity growth, in 2022 it's financial services and the education segment, while in 2023, the main sectors most affected by digitization are healthcare and manufacturing.

Therefore, it can be concluded that digitization has a significant impact on various sectors of the economy, but this dynamic may vary depending on the year and specific sector. It is important for enterprises to identify and implement digital technologies that most effectively

improve their productivity. The information provided in the tables reflects a growing trend in the adoption of digital technologies among small and medium-sized enterprises, which has led to increased productivity and positively impacted the market environment, including the increase in the number of enterprises and expansion of competition.

The ability of Ukraine's economy to quickly recover and prepare for post-war reconstruction is clearly reflected in the reports on the development of national digital ecosystems for the year 2023, as well as in the strategies for 2024 aimed at leveraging digital opportunities.

The main goal of digitization in Ukraine for the next year is to increase the contribution of the IT sector to the country's GDP to 10%, which is intended to create better conditions for investors through an open market, transparency in the tax and customs systems, and improvement in labor market conditions.

The field of digital innovations is dynamically evolving, encompassing both well-established tools with known capabilities and benefits for businesses, as well as cutting-edge technologies that form the basis of modern digital transformation and the fourth industrial revolution. The first category includes enterprise resource planning systems, radio frequency identification technologies, customer relationship management software, supply chain management, social platforms, e-commerce, and electronic invoicing. The latest developments include 5G networks, the Internet of Things (IoT), big data analytics, cloud computing, artificial intelligence, and blockchain.

Digital transformation of company management highlights the following main directions: digitization of business processes, data-driven management, optimization of customer interactions, increasing the value of goods and services, development of digital culture and competencies, and innovative management.

Digitization of business processes involves the implementation of digital solutions to enhance the efficiency and manageability of a company's operational chain. To optimize processes, process analytics methodologies are widely used, allowing for the automation of process identification, identification of «bottlenecks» monitoring compliance of real processes with planned models, finding optimal task execution paths, and creating simulation models for predicting future issues.

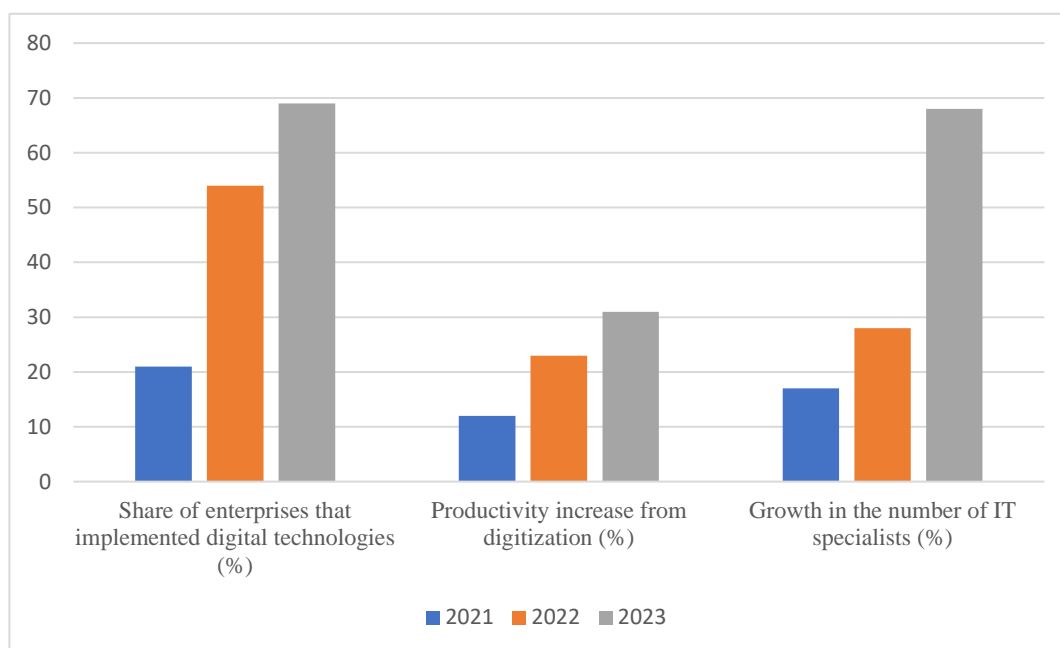
Innovation is key to civilization development and plays a crucial role in business competitiveness. Implementing innovations requires a systematic approach and a constant search for new ideas, enabling companies to outpace competitors. There are two main methods of innovation: adapting best practices and developing based on proprietary findings and experience, including cooperation with partners, startup development, acquisition of new technologies, and more.

Specialized digital infrastructure is necessary for digitizing management processes, which combines computer technologies, telecommunications, and network resources. It includes telecommunication networks for data transmission, electronic business to replace paper documents with digital

ones, and e-commerce, enabling online commercial activities.

Digital infrastructure facilitates the implementation of innovative technologies such as big data processing, the Internet of Things, artificial intelligence, robotics, autonomous transport, and others. The Business Process Reengineering (BPR)

methodology is crucial, focusing on analyzing and radically reformatting existing business processes to achieve fundamental improvements in line with the requirements of the modern business environment. This approach aims to increase productivity, optimize processes, and integrate innovations.



Picture 1. Dynamics of digitization indicators of Ukrainian enterprises

Alongside this, the increase in productivity from digitization underscores the effectiveness of digital initiatives in enhancing enterprise efficiency. Investments in digitization have also risen, confirming the growing readiness of businesses to invest in their own digital transformation.

The significant growth in the number of IT specialists indicates active engagement of qualified professionals in implementing digital projects and developing the IT industry in the country.

**Conclusions.** During the conducted research, the impact of digitalization on the development of small and medium-sized enterprises (SMEs) was studied, which allowed for

several important conclusions to be drawn and practical recommendations to be developed for both businesses and the government. First and foremost, digitalization plays a key role in the modern business environment, providing SMEs with tools to increase efficiency, reduce costs, expand market reach, and improve customer service. Second, the research showed that digital transformation requires enterprises not only to undergo technical updates but also to reconsider their business models, management processes, corporate culture, and customer interaction strategies.

Third, while digitalization offers significant opportunities for development, it also presents new



challenges for enterprises, including those related to cybersecurity, the need for employee training, changes in legislative regulation, and increased competition. Based on the analysis conducted, recommendations were developed aimed at supporting and stimulating the digital transformation of SMEs. Among them are: ensuring access to educational resources on

digital literacy, creating favorable conditions for innovation adoption, government support through funding and tax incentives, and the development of infrastructure for digital business.

In conclusion, digitalization is crucial for the development of SMEs, opening up new opportunities for growth and competitiveness.

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