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European Integration and Globalisation of Ukraine's Digital Economy: Strategic Directions and Prospects

Integración Europea y Globalización de la Economía Digital de Ucrania: Direcciones Estratégicas y Perspectivas

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Cite as: Shashyna M, Pavliuk T, Polusmiak Y, Piddubnyy Y, Matvieieva N. European Integration and Globalisation of Ukraine's Digital Economy: Strategic Directions and Prospects. *Salud, Ciencia y Tecnología - Serie de Conferencias*. 2024; 3:.656. <https://doi.org/10.56294/sctconf2024.656>

Submitted: 21-02-2024

Revised: 26-06-2024

Accepted: 28-11-2024

Published: 29-11-2024

Editor: Dr. William Castillo-González 

ABSTRACT

This article examines the digital transformation of Ukraine's economy through European integration. It highlights prospects for digitalization, including economic growth, innovation, and strengthened ties with the EU, alongside challenges such as public sector inefficiencies, investment risks, and slow reforms. Digitalization is emphasized as a driver of innovative development and a foundation for economic cooperation with the EU. The study combines expert analysis from SCOPUS, Web of Science, and Ukrainian data (2019-2023) to evaluate conditions, risks, and opportunities. Key findings include the need for enhanced investor protections, alignment with EU standards, and personalized digital strategies to reduce risks and promote growth. Despite progress, gaps remain in public sector digitalization, governance, and technology adoption. Addressing these issues can unlock Ukraine's digital potential, boosting competitiveness and integration into the EU market. The research proposes a tailored framework for implementing digital transformation, emphasizing flexibility, efficiency, and personalized solutions. These advancements aim to strengthen Ukraine's global market position and ensure sustainable economic growth.

Keywords: Development; Digitalisation; Economic Determinants; Integration; International Experience.

RESUMEN

Este artículo examina la transformación digital de la economía de Ucrania a través de la integración europea. Destaca las perspectivas de la digitalización, incluyendo el crecimiento económico, la innovación y el fortalecimiento de los lazos con la UE, junto con desafíos como las ineficiencias del sector público, los riesgos de inversión y las reformas lentas. Se enfatiza la digitalización como motor del desarrollo innovador y base para la cooperación económica con la UE. El estudio combina análisis de expertos de SCOPUS, Web of Science y datos ucranianos (2019-2023) para evaluar condiciones, riesgos y oportunidades. Los hallazgos clave incluyen la necesidad de mejorar la protección de los inversores, alinear los estándares con los de la UE y diseñar estrategias digitales personalizadas para reducir riesgos y promover el crecimiento. A pesar del progreso, persisten brechas en la digitalización del sector público, la gobernanza y la adopción tecnológica. Abordar estos problemas puede desbloquear el potencial digital de Ucrania, aumentando la competitividad e integración en el mercado de la UE. La investigación propone un marco personalizado para implementar la transformación digital, enfatizando la flexibilidad, eficiencia y soluciones personalizadas. Estos avances buscan fortalecer la posición de Ucrania en el mercado global y garantizar un crecimiento económico sostenible.

Palabras clave: Desarrollo; Digitalización; Determinantes Económicos; Integración; Experiencia Internacional.

INTRODUCTION

The integration of digital technology is transforming industries, creating job opportunities, and improving recruitment efficiency. It enables businesses to access a global pool of skilled professionals through online platforms, benefiting both employers and workers. This digital shift enhances economic growth by reducing costs, fostering diversity, and breaking down geographical barriers, allowing freelancers to collaborate internationally. However, the impact of digitalization on job growth and new roles varies between Ukraine and EU countries, influenced by development, education, and workforce adaptability.

Ukraine's European integration, bolstered by a visa-free regime and EU candidate status, faces challenges due to slow reforms and the war. Key priorities for digitalization include transitioning to Industry 5.0, incorporating sustainability, and digitizing organizational systems. European integration requires strengthening anti-corruption laws, aligning legislative frameworks, and improving policies on economic, political, and environmental standards, along with supporting legal access to digital public information.

Analysis of current research suggests that the challenges facing the global digitalisation market in terms of development are both relevant and inadequately explored. Given the ever-evolving demographics and trends of the global market, it is imperative to identify the fundamental principles for establishing a digital global market. Popova et al.⁽¹⁾ have outlined the key trends in digital integration and innovation, enabling managers of virtual organisations - such as industrial enterprises, trading companies, and transport and logistics firms - to steer their digital strategies towards the implementation of sustainable innovations that are tailored to the unique circumstances of the modern world. Building on these findings, the article articulates the core principles for sustainable innovative digital development within organisations, emphasizing the synergy between marketing, digitalisation, and innovation. Development based on the analysis of big data is aimed at building trusting relationships between companies, organizations, consumers and other stakeholders based on the principles of the digital economy. Research conducted by Evmenchik et al.⁽²⁾, Hubanova et al.⁽³⁾, Mäki and Toivola⁽⁴⁾, Masyk et al.⁽⁵⁾, and Simbarashe⁽⁶⁾ has explored this concept. However, these studies have primarily focused on analyzing the evolution of business processes and their restructuring, with limited attention given to the implications of Industry 4.0 and the shift towards Industry 5.0. As highlighted by Aslam et al.⁽⁷⁾, innovation remains crucial for maintaining a competitive edge and driving economic growth. The paper argues for a shift towards user-centric and customer-driven innovation that is both business-viable and technically feasible, generating value for both businesses and consumers. This approach encourages corporate risk-taking and entrepreneurship to gain a competitive edge and drive economic growth in the era of the Internet of Things and Industry 5.0. Industry 5.0, as defined by Maddikunta et al.⁽⁸⁾, represents the next stage in the global economy, utilizing digital technologies and smart machines to create more resource-efficient and effective production solutions than Industry 4.0. Similar studies by Akimov et al.⁽⁹⁾ and Redko et al.⁽¹⁰⁾ support this concept. However, further research is needed to understand how Industry 5.0 will impact various sectors of the economy and its regulatory mechanisms.

Further research is needed to develop the theoretical foundations for determining the organizational and legal methods and conditions for utilizing digital technologies in response to the digitalization of the economy and global market. Autio et al.⁽¹¹⁾ introduced the concept of digital ecosystems and highlighted the key characteristics of digitalization: reprogrammability, infrastructure elementality, and intangibility. These characteristics are reshaping how companies structure themselves to innovate, deliver, and capture value. Klochan et al.⁽¹²⁾ and Tkachuk et al.⁽¹³⁾ have also echoed similar viewpoints. It is imperative to focus on studying the evolving objectives of modern society in terms of structural adaptation. Melnyk et al.⁽¹⁴⁾ consider issues related to the transformation of digital technologies in modern organizations. It turns out that an effective transition to digital technologies requires modern organizations to adapt to changing conditions and organizational training. Research shows that in the era of digital technologies, public-private partnership mechanisms can be used to build knowledge bases in educational institutions, research institutions, and corporate structures, allowing them to adapt to rapidly changing conditions and create coherent organizational structures. Verkhoglyadova et al.⁽¹⁵⁾ advocate for a focus on restructuring business processes, while Attaran⁽¹⁶⁾ and Kovalchuk et al.⁽¹⁷⁾ underscore the importance of cultivating intellectual capabilities. Beyond just industrial firms, enhancing digitalization in the administrative sector is crucial. Mouly et al.⁽¹⁸⁾ stress that advancing digital technologies and platforms is pivotal for enhancing the standard and accessibility of social services. This article delves into the strategies and challenges associated with integrating digital technologies into the social sector today, aligning with findings from Akimov et al.⁽¹⁹⁾ and Bondarenko et al.⁽²⁰⁾

Therefore, finding solutions to the challenges posed by the global digitalization market crisis is imperative. Research by Madianou⁽²¹⁾ and Piroșcă et al.⁽²²⁾ has highlighted issues such as restricted internal movement and disrupted supply chains, putting significant strain on the labor market. This underscores the urgent need

for economic transformation and alignment with modern technological trends. The paper examines global e-commerce trends in comparison to those in Ukraine.

Unresolved issues in European integration include enhancing the legislative framework and creating favorable social, economic, political, and environmental conditions. Scholars and researchers across various fields are actively involved in studying European integration processes. For instance, Wolczuk⁽²³⁾ argued in her study that European integration extends beyond meeting the requirements of the Association Agreement to encompass extensive state-building processes and fundamental reforms of Ukrainian institutions. Liashenko et al.⁽²⁴⁾ substantiated the legal basis of the European integration vector of Ukraine's development in the field of digital technologies and innovations and determined the risks of management and institutional support of European integration reforms. Kozlovskiy et al.⁽²⁵⁾ stressed the importance of ensuring national security in this context.

The advancement of the digital sector and the real economy necessitate proactive anti-inflationary, monetary, and financial policies aimed at promoting and bolstering the growth of digital technologies and innovative products. It is crucial to add strong value to these endeavors. However, it is important to note that existing studies focus on specific aspects of Ukraine's EU accession rather than providing a comprehensive approach.

Addressing the challenges of digital development in the context of European Union accession requires a comprehensive study that emphasizes principles, methods, and mechanisms for integrating digitalization across all sectors of the economy. This approach will not only expedite Ukraine's path to EU membership but also align its legislative framework with the standards necessary for effective European integration.

Aims and Objectives

The goal of this article is to determine the main prospects for the development of the digital economy of Ukraine in the context of European integration and to highlight the directions of active development of the digital economy in the context of globalization.

In order to reach the objective, the team identified and addressed the following tasks:

- conducting a comprehensive study on the growth of Ukraine's digital sector and formulating strategic directions aligned with EU membership
- analysing the challenges and potential risks associated with the integration of Ukraine's digital economy into the European market.

METHOD

The study is grounded in economic theory, theory of international economic relations, and research on digitalization by both domestic and foreign scholars in the context of Ukraine's alignment with the European Union. The goal of the article is to investigate the development of Ukraine's digital economy in relation to the EU's integration requirements. The study utilized a combination of methods to achieve its goal, focusing on digitalization, conditions of EU accession, and risks of European integration. It employed general scientific research methods such as historical analysis, global market development analysis, scientific abstraction, analysis, synthesis, and systematic summary to gain an understanding of global economic shifts, market structures, and challenges in the global labor market integration. A systematic approach was utilized to establish a global digital ecosystem by creating a system model that accurately represented the digital landscape of the Ukrainian market. Comparisons were made using the comparison method to highlight the differences in developing the digital labor market between the United States and the European Union. Statistical analysis was employed to scrutinize the digitalization index of the economy, providing valuable insights into the level of technological advancement.

Forecasting methods were applied to assess the industrial structure of various countries, including Ukraine, and to predict the employment trends based on technology adoption rates. Additionally, research and evaluation methods were utilized to analyze the digitalization progress in the Ukrainian market in correlation with global markets.

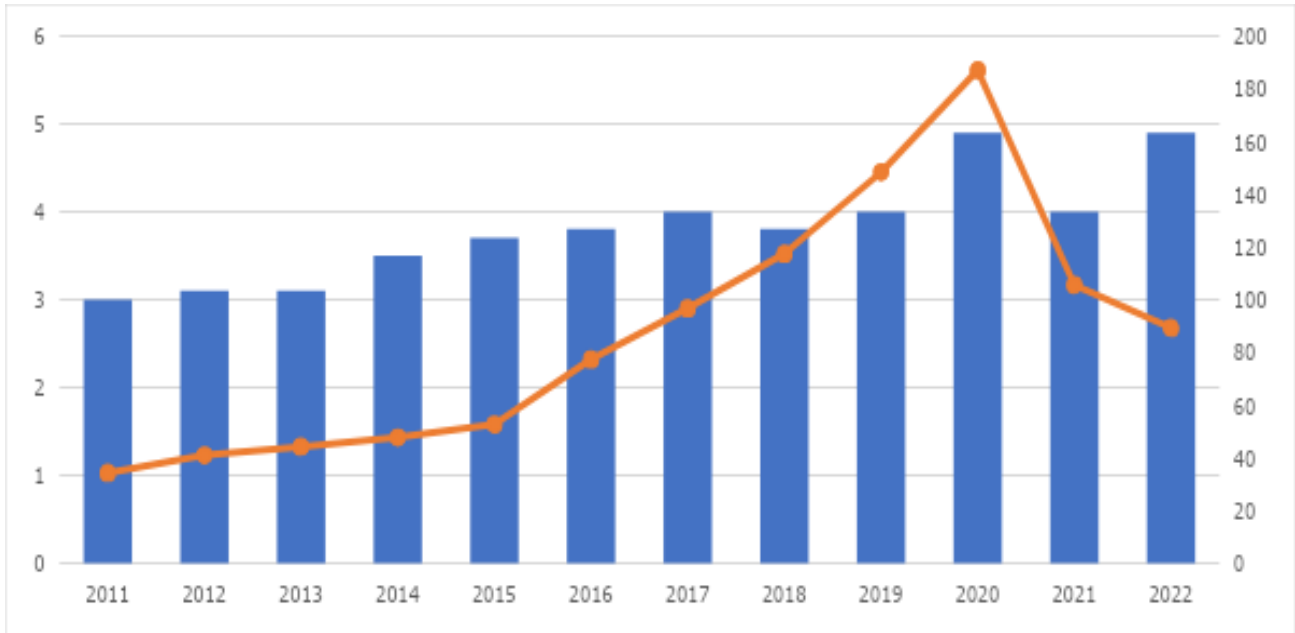
The findings from the study resulted in the formulation of a digital transformation mechanism tailored to Ukraine's integration into the European Union. The study also pinpointed key drivers of digital evolution and proposed strategic pathways for successful digitalization implementation.

RESULTS

The rise of digital technologies has revolutionized the way businesses operate, with electronic networks playing a crucial role in the digitalization of economic activities. The widespread use of digital media points towards a future where most business processes are conducted electronically, with a focus on digital components in physical assets and investments. The public sector is leading the way in digital innovation, setting a precedent for other industries to follow suit. The shift towards a digital economy holds great promise for Ukraine, offering

new opportunities for growth, efficiency, and competitiveness in the European market. Embracing digitalization will be key in aligning Ukraine’s economy with European standards and accelerating the integration process

Gross domestic product is a key indicator of a country’s economic health. The IT sector currently makes up 4 % of Ukraine’s GDP as of 2021, but the government is looking to boost this percentage in the coming years. Back in 2011, the total GDP stood at UAH 1,138.3 billion with the IT sector representing 3 % of the total. Over the last decade, the IT sector has seen significant growth, with its share increasing to 4.9 % in 2020 and 5.6 % in the first quarter of 2021. During this time, the total GDP of the country has also increased, from UAH 34,3 billion to UAH 187 billion, showcasing the sector’s growing importance in Ukraine’s economy.



Source: Compiled by the authors using data from the State Statistics Service of Ukraine (<https://www.ukrstat.gov.ua/>).
Figure 1. Dynamics of IT industry development indicators in Ukraine for the period 2011-2022

The IT industry in Ukraine is experiencing significant growth, highlighting the need to encourage the development of the digital economy over the next 15 years with a focus on European integration. The Strategy for Digital Development, Digital Transformation, and Digitization of the Public Finance Management System in Ukraine until 2025 has already seen the introduction of various measures to promote digitization. Reforms are ongoing to enhance administration, delegate powers, and improve relationships with households, aiming to digitize and automate control and customs clearance processes. This effort will also enhance the institutional capacity of the national customs administration by implementing EU-proposed mechanisms like the Register of Certified Economic Operators and the National Electronic Transport System (NCTS). The Unified National Information Portal “Single Window for International Trade” is being upgraded to enable electronic document generation for customs clearance.

In the next phase, an operational support project will further empower the government to provide high-quality digital services to vulnerable populations in Ukraine. The “Diia” project, which has already introduced over 40 services benefiting over 21 million Ukrainians, plays a crucial role in this effort. A new state standard for web accessibility has been established to ensure inclusivity. These digital solutions not only address complex challenges posed by conflicts but also promote transparency and accountability in the recovery process, essential for Ukraine’s EU integration. Economic changes play a crucial role in determining the course of economic development, with digital technologies serving as the main driver of the modern economy. The rise of the digital economy has revolutionized various aspects of society, bringing about significant economic and social transformations and creating new opportunities for growth. Central to this transformation is the concept of decentralization, which seeks to foster openness, transparency, and adaptability in governance and decision-making processes.

The Global Digital Competitiveness Index (GDI) serves as a metric for measuring a country’s ability to harness digital technologies for societal and economic advancement. According to the IMD World Competitiveness Centre, Ukraine currently ranks 54th out of 64 countries in terms of digitalization in 2021. One of the major challenges facing Ukraine is ensuring that digital technologies are accessible to all, particularly the older generation. Additionally, the pace of digitalization of public services remains slow in the country.⁽²⁶⁾

The Network Readiness Index (NRI) is another important indicator of a country’s readiness to adopt and

leverage digital technologies. Developed in 2002, the NRI assesses various factors such as ICT infrastructure, mobile accessibility, cybersecurity, and investment in new technologies. In comparison to countries with advanced information and communication technologies, Ukraine lags behind in terms of traditional education. There is a need to prioritize the integration of digital technologies in educational institutions and the development of a more robust legal framework for the adoption of new technologies in the country.

Ukraine has begun the process of integrating into Europe's digital single market, with the aim of aligning with the provisions of the Association Agreement and the updated Annex XVII-3. This strategic move is expected to enhance Ukraine's access to the EU digital market, ultimately reducing trade barriers and restrictions. This integration is anticipated to drive the growth of Ukraine's digital economy.

Experts from the Center for International Trade Studies Trade+ at the Kyiv School of Economics have projected that a 1 % increase in the digitization of Ukraine's economy and society could result in a 0,42 % increase in the country's GDP. As Ukraine progresses in its integration into the EU Digital Single Market, the cumulative positive impact on the country's GDP could range from 2,4 % to 12 %, which translates to an additional 1 % valued at 3,1-15,8 billion USD.⁽²⁷⁾

Furthermore, the reduction of digital regulatory barriers will lead to decreased trade costs in bilateral trade between Ukraine and the EU, benefiting Ukrainian citizens by enhancing their welfare.

The objectives of digitalizing Ukraine's economy and meeting the criteria for joining the European Union include:

- Serving as a pioneer in implementing digital transformation initiatives
- Establishing a solid foundation for enhancing competitiveness and efficiency in the industrial sector through technological advancements and digitalizing businesses
 - Attracting investments and achieving sustainable economic growth of 10-12 % annually
 - Mobilizing human resources to foster innovation, creativity, digital manufacturing, and business advancement
- Positioning Ukraine as a key player in the global market for exporting digital goods and services.

Ukraine must intensify its efforts to embrace digitalization across all sectors including political governance, business, healthcare, document management, and education. Recent advancements, such as the implementation of the Prozorro electronic public procurement system and the Mobiili - Status online application, have showcased progress in digitalizing political governance and document management. The potential of digitalization to significantly boost Ukraine's economic growth by 10-12 per cent annually makes it a top priority for the government's agenda. Collaboration with Europe, a key partner in digital transformation, is crucial for continued advancement in e-governance and streamlining official procedures for Ukrainian businesses in foreign financial transactions. Countries at the forefront of digital connectivity have harnessed the power of data storage and retrieval to enhance efficiency, simplify daily activities, and optimize the benefits of the fourth industrial revolution. By leveraging digital technologies, individuals in developed nations have transformed their work processes, simplified daily tasks, and improved global logistics and supply chain operations. The International Trade Organisation operates through an e-commerce platform that facilitates entry into new markets. Globalization, fueled by digital technologies, represents a significant shift in economic development. Many experts see this as a time of hyperglobalization, marked by substantial changes in economic, cultural, and political spheres.

Some scholars view globalization as a transformation in global value chains and the expansion of international business. In the past, economic globalization was the dominant force, but now, advancements in information and communication technology, along with digitalization, are driving the change. This marks a new phase in globalization, where principles of economic organization are being redefined.

Increasingly, joint economic zones are emerging independently of traditional international bodies, shaping a global digital ecosystem. This ecosystem encompasses the interactions between institutions, markets, businesses, and social structures that utilize digital technologies to transmit, store, and process data.

It is essential to understand the functions and processes driving key business and social objectives within this ecosystem. Figure 2 illustrates the formation of a global digital ecosystem, showcasing the interconnected nature of these elements.

The global digital ecosystem is composed of the global market system, the global business system, the global social system, and the global institutional system.

Within the global market system, e-commerce platforms, e-auctions, and online employment platforms offer various goods and services. This system also includes labor and capital markets. In the digital realm, national and regional market boundaries have become less distinct, creating a unified global market where goods, services, labor, and capital flow seamlessly through the internet. Companies can use the global marketplace system to tailor solutions to user needs, enhance traditional products with additional services, utilize artificial intelligence software, analyze big data, and establish detailed information and partnership networks through

digital marketing. These strategies can help companies increase the value they provide to customers.

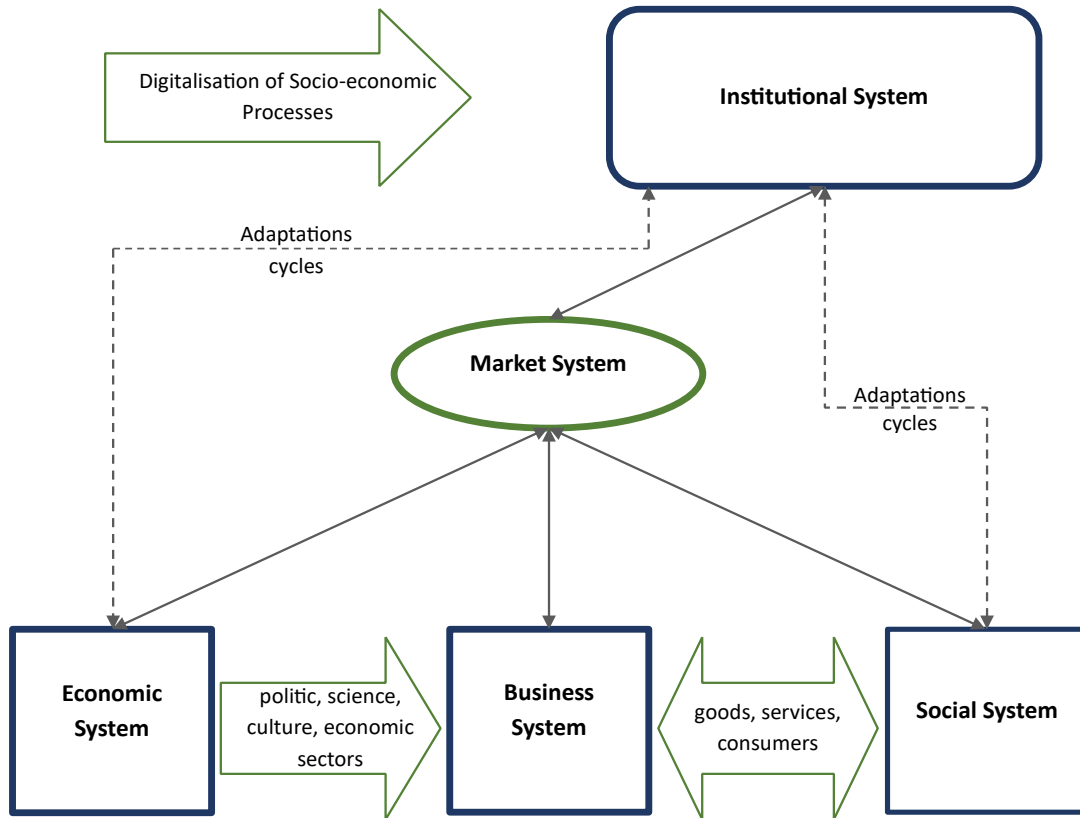


Figure 2. Factors and preconditions influencing the formation of the global digital economy

The global business system is a complex network of economic entities, including designers, manufacturers, suppliers, distributors, and competitors, utilising digital technologies to produce goods and deliver services across various sectors. Emphasis is placed on creating high-quality products and services through customization, functional improvements, streamlined logistics, innovative revenue models, cutting-edge design, and applications. Collaboration and transparency are essential components of the global business ecosystem, fostering horizontal integration between research and development, supply chain management, and customer service. This interconnectedness enables supply chains to adapt to customer demands in real-time, facilitating prompt responses to market needs. The digitalization of the economy is catalyzing significant structural shifts within the global ecosystem, impacting sectors such as mining, manufacturing, transportation, finance, healthcare, and education. Modern businesses must leverage digital technologies to enhance operational efficiency, boost productivity, and enhance customer engagement.

The global social system recognizes and values the diverse skills, mindset, career growth, professional expertise, and entrepreneurial capabilities of employees, catering to the preferences, behaviors, and demands of the consumer market. This system serves as a vital support to the interconnected ecosystems of business and institutions, shaping human resources and fostering market engagement. A key segment within this system is the consumer group, comprising of professional users actively engaged in both production and consumption processes. In today's digital economy, small businesses and independent enterprises are considered consumers as they leverage iOS and Android devices, prompting manufacturers to innovate and create applications for these platforms. Embracing cutting-edge technologies such as robotics, augmented reality, virtual reality, and the industrial Internet of Things, digital enterprises thrive in collaborative workspaces that encourage open communication and seamless interaction. This necessitates a highly skilled workforce adept in programming, operating complex systems, and making agile decisions to drive product innovation and design enhancements.

The global institutional system operates as a complex, interconnected network that includes international intergovernmental organizations, non-governmental organizations, regional bodies, national governments, and associations. Its primary role is to facilitate coordination and communication among representatives across various levels and functions. Utilising a digital architecture, communication with system participants seamlessly facilitates all regulatory functions. Establishing a digital ecosystem for global governance has the potential to

enhance and streamline the delivery of electronic services to individuals and businesses, effectively integrating them into vital social decision-making processes and obtaining key social insights.

The digital technology sector, encompassing infrastructure, interfaces, and digital information technologies, plays a crucial role in ensuring the functionality and communication of the four systems. Information technology infrastructure, such as communication networks, serves as the foundation for implementing new technologies across all systems. The user interface serves as a platform for combining user computing infrastructure, human-machine interaction, and information networks. Key technologies actively utilized within these systems include integrated supply chain planning, production management systems, IoT, robotics, and augmented/virtual reality technologies. The model of the global digital system consists of the relationship between technology and globalization as its essence, the compatibility of components as its content, and a 38-bit technical space as its operational domain.

The expansion and deepening of globalization have reshaped the institutional framework of the national economy. This process requires strong legal and regulatory foundations to navigate the complexities of global economic relationships. In line with Ukraine's EU accession plan, there is a need to align Ukrainian legislation with EU standards, both by introducing new regulations and phasing out outdated ones. This will ensure that Ukrainian products meet the required standards for entry into the EU market, ultimately enhancing the export potential of the national economy.

The role of professional consulting organizations, such as rating agencies, is becoming increasingly important in assessing and predicting the development of the national economy. While these changes bring about positive impacts, they also pose risks, both internally within systems, markets, and infrastructure, and externally through macroeconomic disruptions and cybercrime threats. It is crucial for policymakers to address these risks to ensure sustainable growth in the face of globalization.

The primary objective of the European Digital Strategy, one of the seven key strategic plans for Europe 2020 adopted in 2010, is to reorganize the EU digital technology market.⁽²⁸⁾ It was only after the signing of the Association Agreement in 2015 that the EU started actively working towards this goal by implementing strategies aimed at enhancing the accessibility of digital products and services in Europe and fostering the necessary conditions for network expansion. This initiative aims to fully leverage the potential of digital market growth through the use of digital technologies.

In May 2017, the European Commission released an interim assessment of its development plan, evaluating the progress made since 2015 and outlining future steps. To establish a competitive, secure, and trustworthy digital market, the EU has outlined key policy areas to understand the dynamics of the information economy and address the digital evolution of society and the economy. These include cybersecurity, digital technologies, industrial digitalization, innovation centers, financial technology, blockchain, the digital economy, and markets for digital technologies such as high-performance computing and artificial intelligence. These initiatives fall under the umbrella of Digital Europe. The EU's budget for 2021-2027 allocates €9,2 billion for these programs.

⁽²⁹⁾

Recognizing the shift towards evolving state functions and the contemporary conceptual approach of public administration, human principles within the framework of digitalization, and the principles of adaptable management across all spheres of operation, the driving force of digitalization has been pinpointed (see table 1). This force is rooted in hyper-connectivity, where the utilization of the Internet, mobile, and digital technologies has led to a growing interdependence among people, organizations, and modern production tools.

Table 1. Factors that drive digital evolution and shape the strategic direction of digitalization

Strategic development direction	Drivers of digitalisation	Stakeholders
Data factories System for managing, moving and protecting data	Access to infrastructure, ability to attract consumers	Institutions and business environment, legal institutions
Cybersecurity network A distributed architectural approach to scalable, flexible, and reliable cyber control	Access to financial institutions, communication coverage, and sophistication	Institutions and business environment, digital system of ICT implementation and use
Cloud platforms Reduce the dependence of companies on existing infrastructure, allowing them to focus on developing their core business	The prevalence and inclusiveness of digital devices, the diversity of digitalisation processes	Digital system of ICT implementation and use, telecommunications competition
Intelligence in decision-making Helps to identify problems in logistics, equipment operation, various business processes and make quick decisions	Excellence in business practices, technology, internet, mobile communications	Institutions and the business environment, institutional effectiveness and trust
Development of artificial intelligence Provides revolutionary tools that allow companies to be resilient to the impact of changing external factors	Quality of infrastructure, use of virtual funds, development of digitalisation	Telecommunications competition, institutional efficiency and trust, transparency, regulatory quality

Therefore, the priorities of Ukraine in the field of digitalization should be, on the one hand, the implementation of a digital strategy, and on the other hand, the harmonization of strategic initiatives and the European legal framework with EU standards. Thanks to the development of the digital environment for science and education, special attention should be paid, including approving relevant legislation to support these goals.

Digital technologies play a crucial role in integrating various technologies and blurring the lines between physical, digital, and biological systems. The shift towards a digital economy is focused on establishing key institutions and infrastructure elements to support its growth, including regulations, workforce development, research capacity, technology innovation, and information security.

The economic development strategy of Ukraine is driven by the necessity to maintain institutional control over strategic priorities for economic development amidst European integration. It is guided by principles of adaptive leadership, flexibility, and quick responsiveness to changing circumstances. The process of management control necessitates regulators to continuously adjust to evolving circumstances that arise from internal structural changes, thereby enhancing their comprehension of the fundamental principles of regulation. Simultaneously, there is a need for institutional reforms, including revamping the content and mechanisms of the system, to promote greater social integration of the Ukrainian economy while considering the potential for involvement in the European Union. It is essential to understand that grasping the conceptual framework of personal effectiveness entails knowledge of its core concepts, understanding of economic principles, and familiarity with service characteristics. With the digitization of the economy, the advancements in modern technologies, and the adoption of concepts like FinTech, InsurTech, and RegTech, there exist opportunities for institutional reforms in the realm of digitalization at both micro and macro levels.

DISCUSSION

The article highlights how the expanding digital economy will lead to the emergence of numerous economic opportunities, particularly those related to integration. Progress in digitalization will play a key role in enhancing European integration and bolstering the country's macroeconomic performance.^(30,31,32,33) To successfully achieve European integration, it is crucial to focus on key areas and adhere to the requirements outlined in the Association Agreement.

The research solidifies the notion that digital advancement plays a crucial role in fostering European integration. By aligning Ukraine's strategic goals for EU membership with digitalization initiatives, we can pinpoint the most effective pathways for maximizing economic benefits. However, the progress outlined in the Association Agreement is met with various obstacles, such as the draining impact of Russia's military intervention on Ukraine's resources. This not only hinders reform implementation but also breeds mistrust among the population.

Therefore, the research demonstrates that it is crucial not to hinder the progress of digitalization, as imposing excessive restraints on cyber technologies by any nation can significantly harm that country's standing on the global stage and its ability to forge partnerships. This concept is supported by Bezrukova et al.,⁽³⁴⁾ who highlighted the digital economy as a primary catalyst for worldwide innovation, competitiveness, and economic development.

This article explores the defining features of the contemporary digital economy, examines key metrics for assessing its growth, and spotlights the leading players in the field. In contrast, authors such as Korobtsova et al.⁽³⁵⁾ delve into the intricacies of establishing regulatory frameworks for cryptocurrency exchanges and emphasize best practices for leveraging digital currencies. Understanding and implementing these guidelines can fortify your financial infrastructure, mitigate potential hazards, and optimize the benefits of this burgeoning trend driven by the surge in cryptocurrencies.

This article further supports the notion that digital data can be leveraged for developmental initiatives, such as collaborating with neighboring countries to address societal issues. Khadzhyradieva et al.⁽³⁶⁾ posit that the sustainability of institutions is crucial in the realm of sustainability management, influencing the effectiveness of governance structures and the willingness to engage with various levels of governance. Through these mechanisms, positive economic and social impacts can be achieved, fostering innovation and enhancing productivity. This perspective is also echoed by the research of Baraja and Chanyago (2023).⁽³⁷⁾

In recent years, Ukraine has made significant strides towards digitalising various aspects of life, such as government operations, business practices, healthcare services, educational systems, and banking sector.⁽³⁸⁾ Despite these advancements, Ukraine trails behind developed nations in terms of digital development and has yet to be included in the Internet Readiness Index. To enhance the country's digital landscape, it is essential to enhance the legal framework for regulating e-commerce, safeguard the rights of investors within the technology sector, and bolster efforts to attract foreign investments in digitalisation and e-commerce. Further research is needed to refine and update national laws on digital matters.

The work introduces new scientific ideas by outlining strategic pathways for digitalization implementation that uniquely incorporate risk analysis of potential negative events and response plans within the context of

European integration. Unlike previous studies, the article also highlights how digitalization impacts strategic development in Europe, considering key stakeholders involved in this process.

The article highlights Ukraine's focus on digitalization, particularly in terms of implementing digital strategies, aligning with European standards, and promoting ICT research. It discusses how these efforts can contribute to European integration and improve digital outcomes. The article also offers insights into addressing challenges in the digital sphere and suggests ways to mitigate their impact. Overall, the findings of the article serve as a valuable resource for shaping state regulations and promoting European integration in Ukraine's digital market.

CONCLUSIONS

This study highlights the transformative potential of digitalization for Ukraine's integration into the European Union and its global economic positioning. By addressing gaps in governance, public sector adoption, and investment protections, Ukraine can align its digital economy with EU standards, fostering sustainable growth and innovation. The proposed strategic pathways emphasize tailored digitalization efforts to mitigate risks and enhance competitiveness. Achieving these objectives requires prioritizing legislative reforms, advancing digital infrastructure, and promoting public-private collaboration. Despite current challenges, Ukraine's progress in digital transformation lays a foundation for deeper integration with the EU and a strengthened role in the global digital economy.

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FINANCING

The authors did not receive financing for the development of this research.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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