

## IDENTIFICATION OF THE GENERAL DIRECTION OF DIGITALISATION AND THE MAIN ISSUES OF ECONOMIC DEVELOPMENT BASED ON BIBLIOGRAPHIC ANALYSIS

Heng Zhang<sup>1\*</sup> 

<sup>1</sup> PhD student, Sumy State University, Sumy, Ukraine

\* corresponding author: Heng Zhang, e-mail: [khenh.chzhan@biem.sumdu.edu.ua](mailto:khenh.chzhan@biem.sumdu.edu.ua)

Received: 03.12.2024

Revised: 06.12.2024

Accepted: 16.12.2024

**Abstract:** The article examines the current trends in the digital economy and the key factors that influence its development. The digital economy is defined as an economy in which digital data is the leading resource that ensures increased efficiency, productivity and innovation of economic processes. The digital economy encompasses a broad spectrum of economic activities based on the use of digital technologies and information systems. In the contemporary world, it serves as a key catalyst for changes in various sectors, made possible by creating new mechanisms to improve the efficiency of economic processes and implement innovations in the modern world. The author emphasises the importance of technological progress as a disruptive force of digitalisation, focusing on the role of such innovations as piece intelligence, blockchain, Internet of speech (IoT) and dark infrastructure. The interaction between these technologies is enhanced, creating synergy and expanding business and partnership opportunities. Particular respect is given to the concept of “smart places”, which optimise the functioning of human systems and promote increased productivity and the creation of minds for innovative development. The article also examines aspects of cybersecurity, including threats and abuses associated with digital technologies, such as cybercrime, preserving data confidentiality, and ensuring the transparency of financial transactions. The author speaks of the importance of international harmonisation of standards to eliminate barriers to the global digital economy and effectively protect foreigners' data. According to the author, the development of the digital economy is the result of the interaction of technology, politics, social factors and international terrorism. The regulatory role of powers and international organisations is critically essential for forming a legal environment that will accommodate the ongoing development of the digital economy. The article reinforces the importance of policy strategies and infrastructure programs to provide the brainpower for digital transformation.

**Keywords:** cloud infrastructure, technological progress, cybersecurity, cyber threats, data privacy.

**Cite as:** Zhang, H. (2024). Identification of the general direction of digitalisation and the main issues of economic development based on bibliographic analysis. *Economic Sustainability and Business Practices*, 1(2), 40-46. <https://doi.org/10.21272/esbp.2024.4-05>



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**1. Introduction.** For example, the European Union is actively developing a legal framework in the field of cybersecurity, personal data protection, and regulation of digital technologies through the General Data Protection Regulation (GDPR) (GDPR; Eur-lex). This regulation establishes mandatory standards for privacy protection and the processing of personal data in the European Union. Moreover, international organizations such as the United Nations, World Bank, International Monetary Fund, and others engage in dialogue and develop recommendations for governments to promote digital transformation and create a conducive environment for the digital economy.

Speaking of Ukraine's experience, it is worth noting that the country actively implements regulatory and legal regulation (Zakon.Rada(2163;675;1667)) in the field of the digital economy, recognizing its importance for the stable development of modern society.

First and foremost, the country actively works on strengthening the legal framework in the areas of cybersecurity and personal data protection. Ukraine has adopted the National Cybersecurity Strategy (Zakon.Rada 447), which establishes the basic principles of cyberspace protection and mechanisms for responding to threats. Additionally, the country has enacted a series of legal acts aimed at the development of e-governance and the digitization of services. The Law of Ukraine "On Electronic Trust Services" (Zakon.Rada 2155) regulates the use of electronic signatures and documents in the relationships between citizens, government bodies, and business. Ukraine also actively works on creating incentives for the development of digital technologies and innovations. For instance, the Law of Ukraine "On the Principles of State Regulatory Policy in the Field of Economic Activity" (Zakon.Rada 1160) contributes to creating favourable conditions for the development of innovative industries, including the digital technology sector.

Simultaneously, Ukraine actively collaborates with international organizations and partners to coordinate and implement digital security and data protection standards. The country carefully studies and implements international experience and best practices in the regulatory and legal regulation of the digital economy to achieve compliance with international standards.

On an international scale, regulatory and legal regulation of the digital economy significantly influences the interaction between countries and the development of global digital processes. Key to this context is the work of international organizations such as the United Nations (UN), International Monetary Fund (IMF), World Trade Organization (WTO), which jointly develop standards and recommendations regarding the regulatory legal framework in the field of the digital economy. These international organizations actively cooperate in creating international standards and norms aimed at ensuring the interaction of countries in the digital space.

International cooperation also manifests in coordinating approaches to cybersecurity and data protection. Various international organizations jointly develop standards and recommendations for cybersecurity, contributing to the standardization of approaches between countries and ensuring more effective protection of cyberspace. Most international documents and agreements in the field of the digital economy are not mandatory for countries to comply with, but they establish general principles and a basis for cooperation between countries in the digital sphere. This collaborative effort contributes to solving problems and establishing a unified international architecture in the field of the digital economy.

Thus, the geopolitical context and international relations are one of the main factors in shaping an effective economic space. The development of the digital economy occurs in the conditions of global interdependence between countries and markets. Political decisions, trade agreements, and international strategies have a significant impact on the digital ecosystem.

## **2. Literature Review.**

Economic factors in the context of the digital economy are an integral part of studying the impact of technological innovations on the global and regional economy. Because digital transformation affects various aspects of the economy, including changes in production structure, consumer approaches, market competitiveness, resource management efficiency, and other key aspects, it is important to consider economic factors as well (Bezrukova et al., 2022).

First and foremost, digital technologies influence the global economy, contributing to its transformation based on how businesses and economies utilize these technologies for production, marketing, communication, etc. They stimulate innovation and the creation of new industries, leading to an increase in the gross domestic product (GDP) and strengthening the competitiveness of countries in the global market (Boyarchuk et al., 2018). Additionally, digital transformation impacts regional economies by creating new opportunities for the development of different regions depending on their technological capabilities and infrastructure. Regions actively investing in digital technologies can gain a competitive advantage in creating jobs, improving production efficiency, and fostering innovation.

Overall, GDP growth is one of the most significant economic indicators reflecting a country's economic development. Digital technologies can contribute to GDP growth by increasing industrial productivity, expanding markets, stimulating investments, and providing innovative opportunities.

## **3. Methodology and research methods.**

Digital economy methodology focuses on the theoretical framework and practical guidelines for economic activities in the digital age. Research methods include: analyzing data in the development of the digital economy to reveal patterns.

1. Case study: in-depth analysis of the digital transformation practices of specific enterprises or industries, summarizing lessons learned.

2. Experimental research: through simulation experiments, explore the impact of digital technology on economic activities.

3. Interdisciplinary research: integrating multidisciplinary knowledge such as economics, management, and information science to build a theoretical system for the digital economy.

#### 4. Results.

Overall, the cultural and social context determines the adoption and deployment of digital technologies, both at the national and international levels. Furthermore, the social context plays a crucial role in building a socially responsible business environment, where commercial enterprises and organizations seek to achieve harmony between their economic goals and societal needs, considering support for the community, preservation of natural resources, and the development of stable relations with all stakeholders (Magilyas, 2022).

Finally, changes in consumption and lifestyle, particularly shifts in consumption patterns, increased demands for service quality, and the efficiency of technological solutions, shape the demand for digital services and products, determining the direction of further development of the digital economy.

Changes in perceptions of consumption and increased demands for quality and efficiency of technological solutions transform the demand for digital services and products. With the advent of the Internet and mobile technologies, the dynamics of interpersonal relationships have significantly changed, promoting global communication and cultural convergence. Online platforms for shopping, entertainment, and communication have become not just convenient but even necessary for many. People have become more active users of digital services, leading to the stimulation of new technologies and business models. Social networks are not only platforms for communication, but also crucial tools for marketing, advertising, and shaping public opinion. In the contemporary digital world, they influence the formation of stereotypes and cultural values, which, in turn, directly impact consumer behaviour.

Moreover, in the context of changing consumer preferences and increased quality requirements, digital technologies are increasingly penetrating various sectors of the economy. For instance, the growing demand for efficiency in production encourages the use of innovative methods and automation systems, which, in turn, reflects internationally as states compete in implementing advanced production technologies, affecting the structure of international trade and economic relations as a whole. Additionally, these changes form the basis for the emergence of new industries and sectors in the international economy. Increased investment in technology companies focused on developing digital solutions influences the formation of new markets and opportunities for international business.

Changes in communication methods and information perception create new requirements for content. Virtual reality, video streaming, podcasts become not only entertainment content but also tools for work, education, and human interaction. In general, socio-cultural and behavioural aspects form the basic principles for the development of the digital economy, determining consumer priorities, communication platforms, and cultural approaches to technology use, which significantly influence the formation of the modern economic landscape.

These trends contribute to the creation of new innovative solutions aimed at satisfying the growing needs of consumers in the digital era. Requirements for speed, accessibility, and service personalization shape new trends in the digital sphere, which, in turn, influence the development and implementation of new technologies.

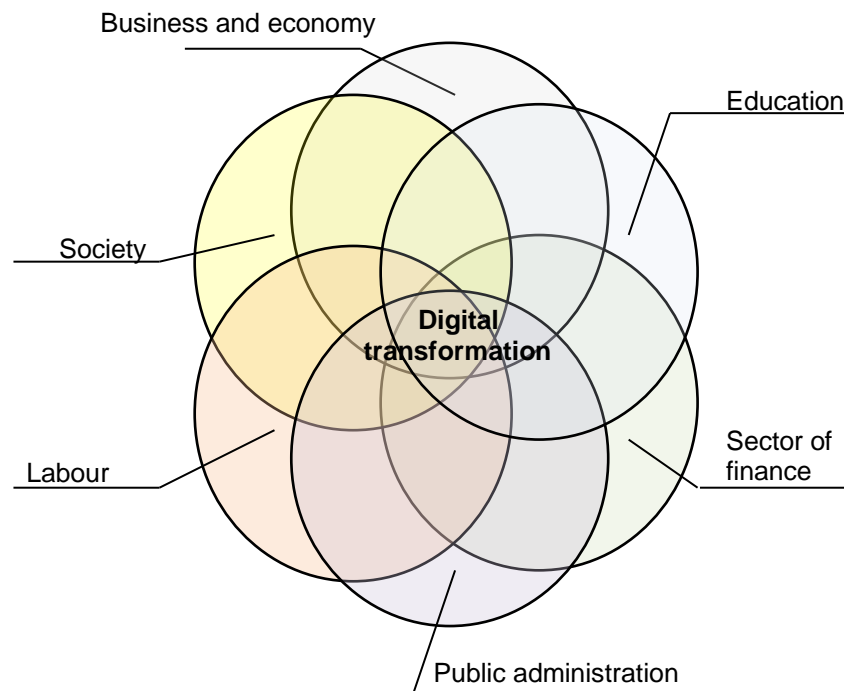
All these factors have an impact on the international aspect of the digital economy. Increased demands for the quality and efficiency of technological solutions create a competitive environment where companies from different countries strive to implement innovations faster and more efficiently. This encourages deeper collaboration and the exchange of technological solutions between countries, as well as fosters the creation of new partnerships and the expansion of international economic relations.

Thus, it can be noted that digital transformation affects all spheres of contemporary human life, bringing together different sectors and leading to the formation of a unified comprehensive apparatus (Figure 1).

**Cloud infrastructure.** In turn, the development of cloud infrastructure opens the way for storing and processing large volumes of data, providing access to information from anywhere and at any time. Other elements of the digital economy include artificial intelligence and data analytics technologies, enabling process automation and informed decision-making based on a vast amount of information. The advancement of mobile technologies and gadgets stimulates the availability of services and the convenience of using electronic devices, allowing their use for a wide range of activities.

In today's world, the digital economy also includes aspects of cybersecurity, electronic commerce, cryptocurrency markets, and blockchain technology. Ensuring cybersecurity in the digital environment becomes critical for protecting personal and business information. E-commerce and the development of

cryptocurrency markets offer new opportunities for virtual space purchases, investments, and financial transactions, while blockchain technology ensures the security and transparency of these operations.



**Figure 1.** Areas of digital transformation coverage.

Source: developed by the author

Thus, the formation and development of the digital economy are the result of the interaction of numerous influencing factors, reflecting the complex and dynamic nature of this process. Rapid technological changes are the key drivers of digital tools and platform transformation and improvement. The development of artificial intelligence, analytical systems, blockchain technologies, and the Internet of Things establishes the foundation for innovation and development in the digital environment.

**Technological progress.** Technological progress is the key factor in the development of the digital economy, as new technologies impact the formation and transformation of business models, consumer practices, and production processes. Artificial intelligence, one of the most defining innovations recently, alters many economic mechanisms. For example, AI enables the analysis of vast amounts of data using algorithms, leading to more accurate demand forecasting, improved inventory, and personnel management, and enhanced final product or service quality.

The Internet of Things (IoT), which involves connecting various physical devices and objects to the Internet, expands data collection opportunities, contributing to the automation and optimization of processes in manufacturing, logistics, healthcare, agriculture, etc., and promotes increased productivity and reduced costs through process automation.

Blockchain is used to ensure reliability and transparency in financial transactions, supply chains, management and identification systems, and allows the creation of various decentralized platforms and applications that can significantly improve efficiency and security in various economic sectors.

It is important to note that these technologies interact with each other, creating synergy and expanding their possibilities. For instance, AI can use data from IoT devices for analysis and decision-making. Blockchain can provide a secure and reliable system for storing this data. Such technological interaction can significantly improve the efficiency and diversity of new products and services in the digital economy.

Moreover, these technologies affect business processes and create new opportunities for market development that were previously inaccessible. For instance, decentralized financial systems based on blockchain provide access to financial services for individuals who were previously excluded from the banking system for various reasons. These new opportunities create space for creativity and innovation in the digital economy. However, it is crucial to understand that, in addition to prospects, this also creates certain risks.

Cutting-edge technologies offer opportunities to create so-called "smart cities," where the implementation of digitization is aimed at optimizing the functioning of urban areas. In this context, smart cities are a concept that utilizes digital technologies and data collection and analysis tools to optimize the functioning of cities and

improve the quality of life for their residents. Smart cities are based on the use of IoT, sensor data, analytics for decision-making, and technologies for automating city management. Smart cities change not only the way of life in cities but also their role in the global economy. These cities become catalysts for innovation and create new opportunities for business by establishing infrastructure that promotes the development of digital technologies, high-tech services, and supports business efficiency.

One of the key advantages of smart cities is increased productivity through resource management optimization, such as energy, transportation, and infrastructure, which allows for cost reduction, improved service quality, and the creation of favourable conditions for innovation development.

**Cybersecurity.** In general, the analysis of key factors and elements in the context of the digital economy allows understanding the depth and scale of the impact of digital transformation on economic development and identify the opportunities and challenges it poses to the modern economic environment.

One of the most notable challenges is the increase in digital inequalities among different regions and social groups (Bocharov & Fedorova, 2019). This means that certain segments of society may have greater access to digital tools and opportunities, while others lag. Digital disparities significantly impact the international economy, making countries with limited capabilities less competitive in the global market. These differences also affect access to education, health, information, and opportunities for interacting with the world, ultimately creating a threat of deeper social isolation and inequality between countries.

The need for attention to cybersecurity often becomes crucial in international economic relations. Criminals, using high-tech methods, attack the systems of corporations, financial institutions, and government infrastructures, attempting to gain unauthorized access to crucial data or services.

**Cyber threats.** Such as viruses, hacker attacks, malware, and identity theft, constantly evolve, jeopardizing not only the functioning of individual businesses but also entire economic systems. Attacks on corporate networks can lead to significant financial losses, business disruption, loss of customer trust, and damage to the reputation of companies. Moreover, such incidents can result in production stoppages or even critical disruptions in the operations of enterprises and organizations, significantly impacting global economic processes (Sviatun et al., 2021).

Financial institutions are particularly vulnerable to cybercriminals, as they deal with large volumes of financial assets and confidential information (Rao, 2019). Cyberattacks on banking systems can lead to theft of money, a decrease in customer trust in banks, and threats to financial stability.

National and international government infrastructure is also susceptible to cyberattacks, which can disrupt the functioning of energy systems, transportation, communication networks, and other critical sectors essential for economic stability and national security.

**Data privacy.** Data privacy and the protection of personal information represent another aspect that requires increased attention in modern economic relations (Zakon.Rada 7525). This challenge arises due to the need to ensure confidentiality and protection of personal data in the digital era, where information exchange occurs on a broad international scale. Requirements for the protection of personal data pose a complex problem for both consumers and the business environment and government authorities.

In this context, it is important to note that data protection legislation and standards vary significantly across different countries, leading to substantial differences in approaches to the processing and storage of personal data. Some countries may have more stringent regulations regarding the processing of personal information, while others may be less strict, leaving this area almost unprotected. Such disparities create certain inequalities in the stages and methods of data protection and can lead to conflicts in the exchange of information between countries. Therefore, international companies need to adhere to different data protection standards while conducting their activities in different parts of the world. Violations of rules regulating the processing of personal information can result in significant fines, termination of contracts and partnerships, as well as loss of consumer trust. Additionally, legislative disparities can create difficulties in planning international business strategies, as they require enterprises to develop different approaches to data processing in each specific country.

Trade barriers and regulatory differences are also serious issues in the context of international relations (Boyarchuk et al., 2018). As mentioned above, differences in digital regulation rules among countries can lead to significant negative consequences for all participants in the interaction. Moreover, these differences can alter the conditions of international trade and cooperation, disrupting production chains and affecting global business practices.

So, one of the most significant issues in this matter is the diversity of standards and rules regarding data storage and processing. Consequently, the situation may require foreign companies to invest in implementing different technologies and data processing methods according to the requirements of each specific country where they conduct their economic activities. In addition, different competition rules are also an important aspect of this challenge. Differences in antitrust laws can be a barrier for companies seeking to expand in the international market, as they must adapt to different competition rules and conditions. As a result, this diversity and regulatory differences can lead to conflicts between countries. Failure to reach consensus and establish common norms and standards can complicate international relations and disrupt trade connections.

To overcome the potential negative consequences of these challenges, attention should be directed towards international harmonization of standards, the creation of international agreements and understandings, increasing the quantity and improving the quality of cooperation between countries, the development of international cooperation programs, involvement of international organizations, as well as regular assessment and adaptation.

So, international harmonization of standards is a key direction to avoid potential negative consequences of the challenges in the digital environment, especially in the context of the rapid development of digital technologies in the modern international economy.

The harmonization of international standards in the areas of trade relations, data protection, and cybersecurity should contribute to the creation of common regulatory foundations for international cooperation and the avoidance of potential conflicts that may arise due to different legal approaches of different countries to cybersecurity issues.

It is important to understand that the development of cyber threats requires not only technological security measures but also international cooperation in the detection, prevention, and investigation of cybercrimes. It is necessary to create and regulate international standards for cybersecurity, jointly develop and implement measures to protect economic systems from cyber threats within and beyond the country's borders.

### **5. Conclusions.**

The principles of digitization define the basic principles guiding the creation and implementation of benefits provided by digital technologies. These principles serve as strategic guidelines for society, governments, and businesses in the development and implementation of digital initiatives. They encompass ensuring equal access to information, creating advantages in various spheres of life, improving economic efficiency through digital transformation, developing an information society, and collaborating internationally to achieve common goals and harmonize rules and standards. Implementing these principles in the form of strategic directions allows optimizing the impact of digital transformation on various aspects of society and the economy.

According to the "Digital Agenda of Ukraine," the principles of digitization include the following:

1. Equal access to information services and knowledge;
2. Creating advantages;
3. Economic development;
4. Development of an information society;
5. International cooperation;
6. Standardization;
7. Trust and security;
8. Public administration.

Thus, on the path to digital transformation, the guiding principles themselves become key factors in steering processes and are aimed at ensuring effective and equitable digitization for all.

The first principle is to ensure equal access to information services and knowledge based on information and communication technologies. This principle aims to eliminate existing disparities in access to digital opportunities for every citizen. The second principle is focused on creating advantages in various aspects of everyday life, the development of healthcare, education, entrepreneurship, and promoting social and economic development. Digital transformation serves as a tool for economic growth, increased productivity, and competitiveness through the use of digital technologies, constituting the third principle that provides a perspective for achieving new competitive advantages in economic sectors and development. The fourth principle is to promote the development of an information society and media by creating content adapted to national and regional needs, fostering socio-cultural and economic growth, and enhancing democracy in society. Facilitating international cooperation and integration into the European Union and the global market is an important component stimulating the development and advancement of the Ukrainian market in a global dimension, constituting the fifth principle of Ukraine's digitization. The sixth principle involves the standardization of digital systems and infrastructures, playing a key role in promoting competitiveness. However, it is essential to consider that relying solely on internal standards is ineffective in the global economy and open markets, except for security programs, where the application of relevant standards is justified. Ensuring security and trust is the seventh principle of digital development. Preventing risks in cyberspace, protecting personal data, and ensuring the rights of users of digital technologies are crucial for the success and responsible implementation of digital innovations. The eighth and final principle is government regulation. The state plays a key role in digital transformation, guiding the development vector, regulating, and protecting these processes. Its role becomes important in correcting market failures, developing infrastructure, attracting relevant investments, fostering digital transformations, and advancing in the digital environment. Thus, digital transformation has significant potential to improve citizens' quality of life, economic efficiency, support and strengthen the information society and democracy. Implementing the above principles is a crucial prerequisite for achieving these goals and ensuring successful transformation into the era of digital technologies.

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## ВИЗНАЧЕННЯ ЗАГАЛЬНОГО НАПРЯМКУ ЦИФРОВІЗАЦІЇ ТА ОСНОВНИХ ПРОБЛЕМ ЕКОНОМІЧНОГО РОЗВИТКУ НА ОСНОВІ БІБЛІОГРАФІЧНОГО АНАЛІЗУ

**Хенг Чжан**, аспірант, Сумський державний університет, м. Суми, Україна.

У статті досліджено сучасні тенденції цифрової економіки та ключові фактори, що впливають на її розвиток. Цифрова економіка визначається як тип економіки, де цифрові дані є основним ресурсом, що забезпечує підвищення ефективності, продуктивності та інноваційності економічних процесів. Цифрова економіка охоплює широкий спектр економічної діяльності, заснованої на використанні цифрових технологій та інформаційних систем. У сучасному світі вона є ключовим каталізатором змін у різних секторах, що стало можливим завдяки створенню нових механізмів підвищення ефективності економічних процесів та впровадження інновацій у сучасному світі. Автор акцентує увагу на важливості технологічного прогресу як рушійної сили цифровізації, зокрема на ролі таких інновацій, як штучний інтелект, блокчейн, Інтернет речей (IoT) та хмарні інфраструктури. Підкреслюється взаємодія цих технологій, що створює синергію і розширює можливості для бізнесу та суспільства. Особливу увагу приділено концепції "розумних міст", які оптимізують функціонування міських систем, сприяють підвищенню продуктивності та створенню умов для інноваційного розвитку. У статті також розглянуто аспекти кібербезпеки, зокрема загрози та виклики, пов'язані з цифровими технологіями, такі як кіберзлочинність, збереження конфіденційності даних і забезпечення прозорості фінансових операцій. Автор наголошує на важливості міжнародної гармонізації стандартів для уникнення бар'єрів у глобальній цифровій економіці та ефективного захисту даних користувачів. Розвиток цифрової економіки, за словами автора, є результатом взаємодії технологій, політики, соціальних факторів і міжнародного співробітництва. Регулююча роль держав та міжнародних організацій є критично важливою для формування правового середовища, що сприяє сталому розвитку цифрової економіки. Стаття підкреслює значення політичних стратегій та інфраструктурних програм, які забезпечують умови для цифрової трансформації.

**Ключові слова:** хмарна інфраструктура, технологічний прогрес, кібербезпека, кіберзагрози, конфіденційність даних.