

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
KYIV NATIONAL ECONOMIC UNIVERSITY
NAMED AFTER VADYM HETMAN**

**Faculty of International Economics and Management
Department of International Economics**

BACHELOR'S DEGREE **«INTERNATIONAL ECONOMICS»**
PROGRAM
FIELD OF KNOWLEDGE **05 Social and behavioral sciences**
SPECIALTY **051 «Economy»**

Form of education full-time

BACHELOR THESIS

Title «Network transformation of the global economy»

By Zinaida Babiichuk
(Student's name, Surname) (Signature)

Academic Supervisor Dr. of Economics, Professor
(Scientific degree, academic status)

Oleg Shvydanenko
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**Bachelor Thesis has been approved for defense at
Attestation Examination Commission (EC)**

Head of the Department of International Economics
Dr. of science, Professor

Y. Stoliarchuk
(Signature)

KYIV 2024

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AGREED

Head of the project group (guarantor) of the
educational-professional program

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Head of the Department

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INDIVIDUAL TASK

higher education applicant _____ Zinaida Babiichuk
(Name, Surname)

full-time forms of education

Bachelor's Thesis

Title «Network transformation of the global economy»

**The title of the Bachelor's thesis has been approved by the Rector's Order «07»
12.2023 №2231-CT**

The Bachelor's Thesis is based on open Ukrainian and foreign sources of scientific knowledge and analytical information, monographs and articles, reports of international organizations and national institutions in the field of network economy.

Plan of Bachelor's Thesis

Chapter 1	Theoretical aspects of the network transformation of the world economic system
Chapter 2	Directions of further network transformation of the global economy
Object of study:	The process of network transformation of the global economy
Subject of study:	Theoretical, methodological, and practical aspects of the network transformation of the global economy.
The purpose of the Thesis:	To determine the nature, features and directions of the network transformation of the world economy, as well as to substantiate the ways of Ukraine's effective integration into the global network economic system.

Specific tasks applicant has to accomplish to meet the objective:

In chapter 1:	– to reveal the theoretical foundations of network interaction of economic systems – to study the nature and socio-economic aspects of the global transformation of the world economy – to identify the economic and technological prerequisites for the network transformation of the world economy
In chapter 2:	– to characterize the scale and dynamics of the network transformation of the world economy – to analyze the degree of Ukraine's involvement in the processes of network transformation of the world economy – to identify problems and prospects for further network transformation of the world economy – to substantiate the ways and directions of deepening the network transformation of the global economic system

**The task has been set
by the Academic Supervisor**

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the acquirer**

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Zinaida Babiichuk
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Abstract

The Bachelor's thesis comprises 54 pages, 3 tables, 11 figures, the biography list consists of 35 names, appendices.

«Network transformation of the global economy»

(Title of Bachelor's thesis)

The object of study is the process of network transformation of the global economy.

The subject of the study encompasses the theoretical, methodological, and practical aspects of the network transformation of the global economy. It aims to delineate the essence, features, and directions of this transformation.

The purpose of the Bachelor Thesis is to determine the nature, features and directions of the network transformation of the world economy, as well as to substantiate the ways of Ukraine's effective integration into the global network economic system.

In accordance with the set objective, the following tasks were defined:

- to reveal the theoretical foundations of network interaction of economic systems;
- to study the nature and socio-economic aspects of the global transformation of the world economy;
- to identify the economic and technological prerequisites for the network transformation of the world economy;
- to characterize the scale and dynamics of the network transformation of the world economy;
- to analyze the degree of Ukraine's involvement in the processes of network transformation of the world economy;
- to identify problems and prospects for further network transformation of the world economy;
- to substantiate the ways and directions of deepening the network transformation of the global economic system.

Practical task of the obtained results. Based on the assessment of the impact of the network economy on socio-economic and technological development in the world and in Ukraine, an evaluation of the effectiveness of networkization is provided. These recommendations are designed for practical application and could be used for further researches.

The year of completion of the Bachelor's thesis 2024

The year of thesis defense 2024

Keywords: network economy, globalization, networkization, integration, innovation, network system, digitalization, communication, cooperation, corporation.

REVIEW
of the qualification bachelor thesis
of the student of the Faculty of International Economics and Management
educational program “International economics”

Zinaida Babiichuk
(Name, Surname)

Title «Network transformation of the global economy»

1. **Relevance of the topic:** The global economy has significant changes in recent decades. Scientific and technological progress, the breakdown of global production, and the development of international production networks affect all areas of life. Most goods and services are produced through the cooperation of suppliers from different countries. This creates complex international production chains that are constantly changing under the influence of changes in the external environment and competition. This new structure of the global economy requires the definition of global strategies for the development of international production networks and localization of production at different stages of value creation.
2. **Positive features of the qualifying Bachelor's thesis:** Comprehensive analysis based on scientific sources and factual material of the network economy in the context of globalization; analysis of Ukraine's involvement in networkization.
3. **The presence of independent developments of the author:** The thesis showcases original contributions from the author by delving into the factors influencing the efficiency of the network economy. Additionally, it substantiates key focal points and provides recommendations for the integration of Ukraine into the network economy amidst the processes of globalization.
4. **The value of theoretical conclusions and practical recommendations:** The theoretical conclusions and recommendations presented in this bachelor's thesis can be beneficial for domestic and foreign corporations in their practical efforts to enhance their innovation development strategies.
5. **The presence of shortcomings:** the presence of stylistic errors, it would be desirable to devote more attention to the study of economic and technological prerequisites for the network transformation of the world economy.
6. **General assessment of the bachelor's thesis and its admission to the defence examination board:** Overall, the Bachelor's thesis meets all the requirements well, showing a well understanding of theory and independence in research. It indicates the author's ability to tackle complex scientific topics. The work is recommended for defence before the Attestation Examination Commission with a score of 44 points.

Academic Supervisor:

Doctor of Economics, Professor of
the Department of International Economics

(signature)

Oleg Shvydanenko
(Name, Surname)

" _____ " _____ 2024

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INTRODUCTION

Relevance of the topic. The study of the network transformation of the global economy is extremely relevant in the context of the rapid development of information and communication technologies and the strengthening of interconnections between countries. Understanding the essence and features of the network economy allows countries and companies to more effectively adapt to new realities and use the opportunities that are opening up in the era of globalization. Studying this topic is important for developing strategies for economic development and increasing competitiveness in the global network economy.

Analysis of recent research and publications. The study of the network transformation of the global economy has garnered significant attention from both foreign and domestic scholars. The works of Manuel Castells, particularly his seminal work "The Information Age: Economy, Society and Culture" (1996), provide a comprehensive analysis of the impact of information and communication technologies on the global economy. Castells introduces the concept of the "network society," emphasizing the importance of networks in shaping economic, social, and cultural processes.

Michael Porter's competitive strategy theories, along with Alvin Toffler's ideas on the "Third Wave," also contribute to understanding the network transformation. Porter's emphasis on the role of information in competitive advantage complements Toffler's vision of a post-industrial society driven by knowledge and information.

The theoretical foundations laid by Ronald Coase and Oliver Williamson on transaction costs and institutional economics are crucial for understanding the economic imperatives of networking. Their works on the nature of the firm and governance structures provide insights into how firms adapt to and thrive in a networked economy.

Shelby D. Hunt's theories on marketing and W. Davidow and M. Malone's exploration of virtual corporations further elucidate the operational and strategic shifts required in a networked economy. Marshall Van Alstyne's research on network effects and platform economies adds a layer of understanding on how digital platforms create and capture value in a connected world.

Joseph Stiglitz's analysis of globalization and its discontents provides a critical perspective on the socio-economic dimensions of global economic transformation. His work highlights the benefits and pitfalls of globalization, informing strategies for equitable and sustainable development.

Among domestic scholars, the contributions of V. Gerasymchuk, A. Sen, U. Beck, D. Lukyanenko, and A. Poruchnyk are noteworthy. These scholars explore various aspects of globalization, network economics, and Ukraine's integration into the global economy. Their research provides a localized perspective, crucial for contextualizing global theories within the Ukrainian economic landscape.

The purpose of the bachelor's thesis is to determine the nature, features and directions of the network transformation of the world economy, as well as to substantiate the ways of Ukraine's effective integration into the global network economic system. To achieve this goals by solving the following tasks:

- to reveal the theoretical foundations of network interaction of economic systems;
- to study the nature and socio-economic aspects of the global transformation of the world economy;
- to identify the economic and technological prerequisites for the network transformation of the world economy;
- to characterize the scale and dynamics of the network transformation of the world economy;
- to analyze the degree of Ukraine's involvement in the processes of network transformation of the world economy;
- to identify problems and prospects for further network transformation of the world economy;
- to substantiate the ways and directions of deepening the network transformation of the global economic system.

The object of study is the process of network transformation of the global economy.

Subject of research encompasses the theoretical, methodological, and practical aspects of the network transformation of the global economy. It aims to delineate the essence, features, and directions of this transformation, particularly focusing on Ukraine's integration into the global network economic system.

Research methods. While writing my bachelor's thesis, I took a large amount of information from various sources. The theoretical basis of my work was formed by economic research conducted by both domestic and foreign scholars, books and articles written by one, two or three authors on the networking of the economy, globalization and transformation of the world economic system; statistics and analytical reports of international organizations (World Bank, WTO, UNCTAD, OECD). In addition to these traditional sources, I also used electronic sources.

Theoretical, methodological and practical significance of the results. The research contributes to the academic understanding of network economics, providing a comprehensive framework that integrates various theories on globalization, information technology, and economic transformation. It builds on existing literature, offering new insights into the dynamics of the global network economy. The research employs a multidisciplinary approach, integrating economic theories with technological and sociological perspectives. This methodological framework allows for a holistic analysis of the network transformation, addressing both macroeconomic trends and microeconomic behaviors. The findings of this research have practical implications for policymakers. By identifying the economic and technological imperatives of networking, the research provides actionable recommendations for enhancing competitiveness and fostering sustainable economic development. It also outlines strategies for Ukraine's effective integration into the global network economy, emphasizing the need for technological innovation and international cooperation.

Information base. Books and articles by both domestic and foreign scholars on network economics, globalization, and economic transformation. Data and reports from international organizations such as the World Bank, World Trade Organization (WTO), United Nations Conference on Trade and Development (UNCTAD), and the Organization for Economic Co-operation and Development (OECD). Online databases, digital

libraries, and other electronic resources providing up-to-date information on global economic trends and developments.

The structure of the bachelor's thesis consists of an introduction, two chapters, conclusion and a list of references.

CHAPTER 1.

THEORETICAL ASPECTS OF THE NETWORK TRANSFORMATION OF THE WORLD ECONOMIC SYSTEM

1.1 Theoretical foundations of networking of economic systems at the micro, macro and meso levels

The modern world is rapidly changing under the influence of technological innovations, and the global economy is not standing aside. It is becoming increasingly interconnected and dynamic, being formed in the context of network structures. The network transformation is affecting a new reality in the modern economy, where network structures are becoming a key factor for effective communication between different participants in economic systems.

The concept of integration began to emerge in the mid-20th century when the global economy faced difficulties in manufacturing various goods that required a lot of different raw materials and components, such as cars or modern weaponry. At that time, networked economic systems became the driving force, as individuals, companies, and even countries started to collaborate in their professional fields to reduce costs and increase efficiency. [1]

The precondition for the existence of a network economy is the development of technology and free access to information through the Internet, which is a key tool for the network economy. It is precisely information and digital technologies that have become the foundation for the development of the economic system, but it must be taken into account that the primary factors for creating a network economy are information and knowledge.

Economic networks leverage all the available competitive advantages and resources of each participant to increase production and the well-being of the entire group. Activities within networks can include a variety of things, such as the exchange of knowledge and resources or the search and exchange of labor. Common types of economic networks can be joint ventures between two or more companies, partnerships

between corporations (especially in different countries), or even business groups that form a network with shared connections and an ultimate goal. This can be considered the goal of networking: corporations that come together have mutual economic benefits in the form of increased availability and diversity of goods for their customers. Moreover, the spread of modern technologies, such as the Internet, helps network participants from different parts of the world stay connected, significantly reducing costs and potentially attracting more participants to the network. In such networks, each partner is an equal participant. In some economic networks, membership can be static (when participants do not change), while in others, it can be dynamic. In these cases, networks are constantly changing as participants leave or join. [2]

An example of an economic network is the Group of Seven (G-7), which unites the seven most powerful economies in the world: Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. The G7 leaders gather annually for a summit to discuss global economic issues, coordinate policies, and seek common solutions. The G7 presidency takes turns for one year. The G7 has no rigid structure or legal force, but it plays an important role in shaping global economic policy. Its decisions affect the lives of billions of people around the world.

Network economies of scale, also known as network effects, refers to the phenomenon where the value of a product or service increases when more people use it. In other words, the more users a network has, the more valuable it becomes to each of them. [3]

Manuel Castells began to develop the theme of “network society” in his work “The Rise of the Network Society”, he distinguishes different types of networks (e.g., media network, global financial flows network, etc.) and formulates a certain law of network structures, according to which the distance between two points is shorter when they both act as nodes in a particular structure than when they do not belong to the same network. “Networks are the long-awaited environment in which any company or individual located anywhere in the economic system can easily and cost-effectively contact any other company or individual for collaboration, trade, exchange of thoughts,

ideas and know-how, or simply for pleasure, and network structures are both the means and the result of the globalization of society,” said Castells. [4]

Mutual trust is the main factor in the existence of the network economy. According to A. Portes, small firms, by mobilizing network ties, reduce costs and can accumulate capital. Modern studies of economically successful business entities show that hierarchy is increasingly losing out to network organization. Therefore, the hierarchical structure is being replaced by a structure where each business entity has equal access to information and can communicate with all members of the organization.

In the book "Powershift," written by E. Toffler, it is noted that "an increasing number of business problems today require cross-industry information, and the corporate system is acquiring adhocratic characteristics. Networks tend to be more horizontal than vertical, meaning they either have a flat hierarchy or none at all, which is a hallmark of modern network systems. They are adaptive – capable of quickly changing their configuration to match changing conditions. Leadership within them tends to be based more on competence and personal qualities than on social or organizational rank. Management power is transferred quickly and much more easily than in a bureaucracy, passing into other hands when a new situation arises that requires new skills." [5]

Networks decentralize execution; they have no center, and everyone shares a common job and goal – the creation of innovations. Thus, it can be determined that innovation lies not only in intellect and information but also in network interaction. Therefore, they have significant advantages over vertical (hierarchical) structures because they are more adaptive.

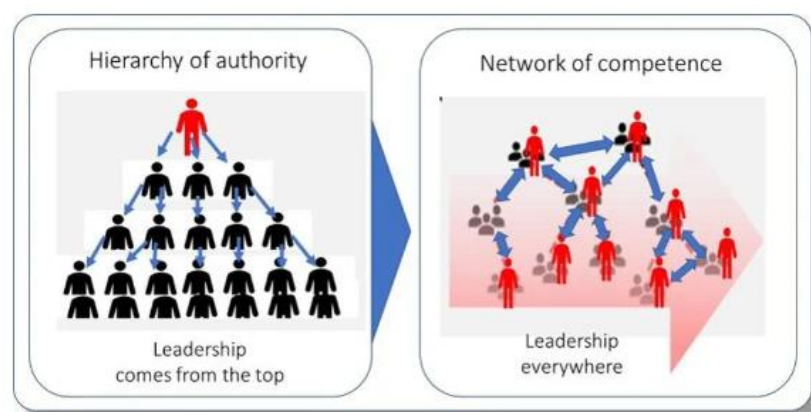


Figure 1.1 – Hierarchy of authority to a network of competence

Source: compiled by author, based on [6]

R. Coase noted in his work that there are 2 traditional ways to organize work:

1. Market - firms buy and sell from each other on the open market. This method is good when transaction costs (costs of finding partners, concluding agreements, monitoring compliance with the rules) are low.

2. Hierarchy - one firm (parent) manages other firms (subsidiaries). This method is good when transaction costs are high, but it is important to have clear control and coordination. [7]

In his book "The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting," O. Williamson attempted to merge the market and hierarchy, proposing a hybrid alternative – the network. [8]

Additionally, G. Richardson proposed a "hybrid" network (firms cooperate with each other but are not subordinate to any one of them). This form represents "clusters and alliances." Clusters are territorial associations of organizations that work with each other and with other entities in the value chain to enhance the competitiveness of their product. In this way, this method does not require high production and coordination costs. The hybrid form of coordination is based on clear commitments and guarantees that agents provide to each other regarding their future actions. This is significantly different from the market mechanism, where everything is based on unpredictable fluctuations in supply and demand. [9]

The hybrid form becomes relevant when relationships between economic agents become long-term and routine. Shelby D. Hunt also elaborates on the concept of hybrids, considering the hybrid form to be "long-term contractual relationships that maintain independence but provide additional transaction-specific safeguards compared to the market." [10]

The driving force behind networkization is the formation of a network economy on the Internet.

Economists in the modern literature distinguish 2 main types of networks:

1. Virtual enterprise;
2. Physical networks.

W. Davidow and M. Malone argue that virtual enterprises are the most progressive and effective form of business organization in the modern world. [11]

This model is based on a networked and computerized structure that combines a variety of resources located in different places. There are many advantages of virtual enterprises:

Reduced costs: Virtual businesses can save money by reducing the cost of renting space, equipment, and administrative staff.

Increased flexibility: Virtual businesses can easily form and break partnerships to adapt to changing market needs.

Access to a wider market: Virtual enterprises can enter new markets without being limited by geographic location.

Virtual enterprises open up new opportunities for entrepreneurs and companies, allowing them to be more flexible, efficient and innovative.

Networking is becoming increasingly important in the modern world, where collaboration is a key factor for success. The very goal of the network economy is to enhance efficiency, as networks facilitate better and faster exchange of information and knowledge, which helps increase productivity and can manifest in cost reduction and shorter task completion times. Additionally, networks create a conducive environment for the exchange of ideas, leading to innovation through the diversity of thoughts and experiences gathered within networks, helping to find new approaches to problems and solve them as quickly as possible. Due to their flexibility and decentralized nature, networks can better adapt to changing conditions. Networks promote better collaboration, which, in my opinion, can reduce conflicts.

Networking can also be viewed through the lens of competitiveness. M. Porter outlined the theory of competitiveness, according to which the international competitiveness of an industry is determined by the macroenvironment in which it operates, namely: the availability of economic resources, the nature of demand in the domestic market, the level of management and competition, government economic policy, and the development of various industries. Porter identified five key forces that affect the competitiveness of industries:

1. The threat of new competitors;
2. The level of competition between existing players;
3. The threat of substitute products;
4. Negotiating power of suppliers;
5. Bargaining power of buyers.

Porter then proposed the concept of the value chain, which describes all stages of the production and delivery of a product or service, from the extraction of raw materials to the end consumer. It can be envisioned as the journey of a product or service from the initial idea to the end consumer. [12]

The term "value chain" encompasses all production, logistics, marketing, and service processes through which network participants can enhance their competitive advantage by optimizing it at any of the stages mentioned. If considered from start to finish, it is a series of systems that businesses use to make money.

As previously mentioned, the concept of the value chain was first introduced by Porter M. "Competition in global industries", 1986. Porter sought to define a company's competitive advantage, noting that it arises from the company's processes such as marketing and support activities. [13]

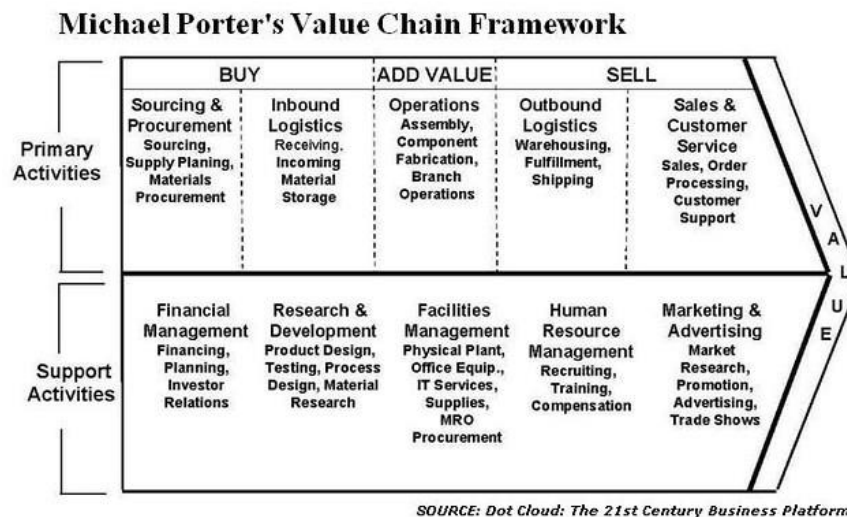


Figure 1.2 – Michael Porter's Value Chain Framework

Source: compiled by author, based on [14]

Porter breaks down value chain analysis into five core activities. He then breaks them down into four activities that help support the core activities. This chain helps to

identify the main cost elements of the network and to allocate the amount of costs qualitatively, as all the links are interconnected.

According to a Ukrainian scientists, network economy has become the main trend in the evolution of global production, implying organizational and structural transformations both in the production processes of industry complexes of the world economy and in the activities of transnational corporations. Other experts believe that industrial cooperation and strategic interaction among market entities based on integrated adaptive management can be effective ways to address this task.

Transnational corporations (TNCs) are large international companies that have subsidiaries or branches in different countries around the world. They produce goods or services in one country or region but typically have a global scope of operations and influence on the world economy. Transnational corporations often have a large turnover, a branched network of subsidiaries, and an international level of management. They play a key role in the globalization of the economy and influence the development and competitiveness of various countries. A simple example of a transnational company is Apple Inc. – a globally renowned company that manufactures computers, smartphones, software, and other electronic devices. Founded in the USA, it has subsidiaries and manufacturing facilities worldwide. It is noteworthy that one of the theories of networkization this company employs is the theory of vertical integration. The theory of vertical integration was first considered by the English economist Ronald Coase in his work "The Nature of the Firm." He put forward a theory of the factors influencing a firm's decision regarding the production of its own goods and services versus their external procurement volume in an open market. His research laid the foundation for the theory of transaction costs, which was further developed and expanded by other scholars, such as Oliver Williamson.

The concept of value-added chains is also closely related to Oliver Williamson's theory of transaction costs. Williamson argues that any transaction (buying and selling goods, contracting, or hiring an employee) is associated with certain costs. Transaction costs arise at every stage of the chain, and analyzing this value chain helps identify

transactions with high costs and minimize them as much as possible, thereby increasing efficiency and competitiveness. [15]

Network economy is based on the principles of cooperation and information exchange. The successful functioning of networks depends on three main components: logistics, communication, and digitization.

Logistics is the foundation for the functioning of network structures. This includes ensuring fast and reliable delivery of goods and services to end consumers; utilizing various modes of transportation (land, air, water) for maximum efficiency and cost-effectiveness. Road transport accounts for 70% of the total length of the world's transportation network, and high-speed railways (such as those in Japan, covering the entire country, and China, having the longest network) also fall under land transport. Heavy-tonnage shipments are characteristic of water transport, constituting 75% of the total volume (with the most intense traffic in the Atlantic Ocean). Aviation transport annually carries over 1.6 billion passengers and more than 30 million tons of cargo. It's also worth mentioning pipeline transport, which transfers liquid, solid, and gaseous products through pipes.

Communication is crucial for cooperation and coordination within network structures. It involves shared platforms for exchanging ideas and knowledge; social networks that help establish connections and promote information; and providing participants in the network with the opportunity to provide feedback and suggest improvements.

The widespread use of digital technologies helps to conduct online transactions to buy and sell goods and services; use artificial intelligence to automate tasks and analyze data; and connect physical objects to the Internet of Things to collect and share data.

Logistics provides the physical basis for network structures, communication connects network participants and ensures efficient information exchange, and digitalization helps the first two components to improve the environment for collaboration.

The networked economy is built on tools that enhance efficiency, improve communication, and optimize business processes, opening up new opportunities for innovation and development. Key tools for the globalization of the economy include:

1. **Information and Communication Technologies (ICT):** The global Internet network facilitates fast and accessible information exchange among countries, companies, and individuals, along with social media platforms for information exchange, marketing, and customer engagement worldwide (e.g., Facebook, Twitter, Instagram, etc.).

2. **Electronic Commerce (E-commerce):** E-commerce encompasses payment systems that simplify international financial transactions (e.g., PayPal) and global trading platforms that provide access to international markets for businesses (e.g., Amazon, Etsy).

3. **Blockchain and Cryptocurrencies:** Blockchain technologies are distributed ledgers ensuring transparency and security in international transactions, while cryptocurrencies enable decentralized financial operations and new methods of financing (e.g., Bitcoin, Ethereum).

4. **Internet of Things (IoT):** Global IoT networks connect devices worldwide for data collection and exchange (e.g., smart cities). There are also IoT platforms managing and analyzing data from connected devices.

5. **Crowdsourcing and Crowdfunding:** Crowdsourcing utilizes the global network to solve problems or create content with the participation of a wide audience, while crowdfunding platforms help raise funding worldwide for project realization (e.g., Kickstarter).

6. **Big Data and Analytics:** Analytical platforms are tools for collecting and analyzing large volumes of data from different countries, aiding in making strategic decisions (e.g., Hadoop, Apache Spark). There are also technologies for data analysis and forecasting (e.g., TensorFlow).

M. Van Alstyne, a researcher in information economics, views networks as agreements between independent but interrelated commercial organizations aimed at gaining or maintaining a competitive advantage. His definition reflects a contemporary

understanding of how the competitiveness of an individual company depends on building relationships with other economic entities.

The network economy is a new development paradigm. The network economy opens up many opportunities for growth, innovation and cooperation. Understanding its principles and using available tools is a key factor for success in the modern world.

1.2 Global transformation of the world economy: essence and socio-economic dimensions

The global transformation of the world economy is a process of increasing interdependence and integration of national economies into a single global system. This process is driven by several factors, among which technological progress, trade liberalization, and the development of transnational corporations play a key role. As Manuel Castells notes in his work "The Information Age: Economy, Society and Culture" (1996), technological progress, especially in the field of information and communication technologies, has significantly simplified and reduced the cost of exchanging information, goods, and services between countries. This has created the prerequisites for the formation of global production networks and the expansion of international trade. An international production network is a system of contracts between independent economic agents located in different countries, aimed at the optimal combination and use of available resources. International production networks (IPNs) can be classified according to various criteria, such as ownership structure, the nature of relationships between participants, the economic sector, and geographical location. [16]

Trade liberalization, i.e., the reduction of trade barriers and restrictions, has been made possible through the activities of international organizations such as the WTO and the conclusion of multilateral and bilateral trade agreements. Joseph Stiglitz in his book "Globalization and Its Discontents" (2002) emphasizes that this has contributed to the growth of global trade volumes and increased competition at the global level. [17]

According to the World Trade Organization, the volume of global trade in goods increased from USD 6.45 trillion in 2000 to USD 19.01 trillion in 2019. This indicates a rapid expansion of international trade in the context of globalization. [18]

The development of transnational corporations (TNCs) is both a cause and a consequence of globalization. TNCs are large companies that operate in many countries worldwide, going beyond national borders. Examples of well-known TNCs include Apple, Microsoft, Toyota, Coca-Cola, etc. TNCs, having production facilities and branches in various countries around the world, actively contribute to the movement of capital, technology, and labor between countries. They play a significant role in forming global value chains and increasing the interdependence of national economies. The share of TNCs in the global economy: according to UNCTAD estimates, the top 100 TNCs account for about 25% of global GDP and 50% of global trade. This underscores the significant role of transnational corporations in the global economy. [19]

Overall, the global transformation of the world economy leads to increasing interdependence among countries, heightened international competition, and the formation of a unified economic space. This transformation has several positive outcomes for many countries. Primarily, it promotes economic growth and improves living standards. Through the expansion of international trade and investment, countries gain access to new markets, technologies, and financial resources. This stimulates the development of production, the creation of new jobs, and income growth.

Globalization also facilitates the spread of technologies and innovations. Companies have the opportunity to implement new developments more quickly and exchange experiences, which enhances production efficiency and product quality. Consumers, in turn, gain access to a wider range of goods and services at lower prices.

As Amartya Sen notes in his work "Development as Freedom" (1999), global transformation creates new employment and professional development opportunities. People can seek work not only in their own country but also abroad, which fosters the exchange of knowledge and experience and enhances the skill level of the workforce. [20]

Despite the positive aspects, the global transformation of the world economy also has negative consequences and poses several challenges. One of the most pressing issues

is the increase in inequality between countries and within societies. Globalization often leads to the concentration of wealth and resources in the hands of a small group of people and countries, while others face problems of poverty and marginalization. According to the World Bank, the Gini coefficient (a measure of inequality) in the world increased from 65.8 in 1990 to 70.1 in 2017, indicating a rise in inequality in the context of globalization.

Ulrich Beck in his work "What is Globalization?" (1997) emphasizes that global economic integration also exacerbates environmental problems such as pollution, depletion of natural resources, and climate change. The increase in production and transportation of goods leads to higher emissions of greenhouse gases and other harmful substances. [21]

According to the World Bank, global CO₂ emissions rose from 22.43 billion tons in 1990 to 36.44 billion tons in 2018, highlighting the negative impact of economic growth on the environment. [22]

Another challenge is the instability of the global financial system. The globalization of financial markets makes countries more vulnerable to economic crises and shocks, which can quickly spread from one country to another. Global transformation also poses threats to national sovereignty and cultural identity. Countries may lose control over their economic policies and be forced to comply with decisions made by international organizations or influential states. Additionally, globalization can lead to cultural homogenization and the loss of national uniqueness.

Among the social problems associated with global transformation are unemployment, especially among low-skilled workers whose jobs are relocated to countries with cheaper labor. Migration, both labor and forced, is also increasing, which can create social tensions in host countries. Ukrainian economists D. G. Lukyanenko and A. M. Poruchnyk in their monograph "Global Economy of the 21st Century: Human Dimension" (2008) also draw attention to the negative social consequences of globalization, such as rising unemployment, increased migration processes, and the intensification of social conflicts. [23]

For effective adaptation to the global transformation of the world economy, a balanced approach that considers both economic and social aspects is necessary. The state

must play an active role in regulating the economy and social sphere, ensuring the fair distribution of benefits and minimizing the negative consequences of globalization.

International cooperation is crucial for addressing global issues such as climate change, poverty, and inequality. Countries should work together to achieve the UN Sustainable Development Goals and create a more inclusive and sustainable global economy.

Investments in education, science, and innovation is key to successful adaptation to global changes. Countries need to develop human capital by ensuring access to quality education and professional training, enabling people to acquire the necessary knowledge and skills to compete successfully in the global labor market.

Equally important is providing social protection to the population, especially vulnerable groups that are most affected by the negative consequences of globalization. This may include income support programs, retraining and employment initiatives, as well as measures to reduce inequality and promote social inclusion.

Political interconnections also play a significant role in the global economic transformation. International agreements, treaties, and cooperation between countries are key elements for the stability and development of the world economy. Meanwhile, conflicts, trade wars, and geopolitical tensions can become obstacles to global trade and economic growth.

One of the biggest threats to the global ecosystem is the increase in production and consumption, which leads to environmental pollution, depletion of natural resources, and climate change. Effective waste management, transitioning to renewable energy sources, and other environmentally-oriented measures are essential for preserving nature.

On one hand, technological progress can enhance production efficiency and increase income. On the other hand, automation and robotics can lead to job losses in some sectors. Ensuring retraining and acquiring new skills becomes a crucial component for maintaining employment amid rapid technological change.

Globalization can deepen inequality between and within countries, especially when economic benefits are not evenly distributed among the population. Social

protection systems, development programs, and economic regulation can be aimed at reducing this inequality and ensuring greater social justice.

Globalization threatens cultural diversity, as standardization and unification can lead to the loss of unique cultural identities. However, mutual cultural exchange and cooperation can also foster understanding and harmony between nations.

Humanitarian issues, such as access to education, healthcare, and living conditions, gender equality, and the fight against poverty, remain important in the context of the global transformation of the world economy. Ensuring access to education and medical care for all segments of society becomes a key task for sustainable development and balanced economic growth.

Globalization also leads to intensified migration processes, both labor and forced. Migrants can make significant contributions to economic development and cultural diversity, but it is necessary to ensure their integration and protection of their rights.

The global transformation of the economy opens new opportunities for innovation and entrepreneurship. Startups and new tech companies can become drivers of economic growth and job creation in different countries around the world.

The implementation of digital technologies in all sectors of the economy promotes modernization and productivity growth. The expansion of the digital market and e-commerce opens new opportunities for businesses and consumers worldwide.

The development of conscious consumption and the transition to environmentally friendly technologies become important aspects of the global economic transformation. Supporting sustainable development and environmental protection is essential for ensuring long-term stability and prosperity.

1.3 Economic and technological imperatives of the global economy networking

Economic and technological imperatives of the global economy networking play a key role in the transformation of the global economic system. With the development of

information technology and the Internet, the global economy is gradually changing its structure, moving from traditional models to networked forms of organization. This approach is characterized by a high level of interaction between different economic agents, fast processing and transfer of information, as well as a significant increase in the efficiency of business processes. [24]

First and foremost, the networking of the economy is based on the use of modern information and communication technologies (ICT). Thanks to ICT, companies can quickly adapt to market changes, implement new business models, and optimize their operational processes. The use of cloud computing, big data, and artificial intelligence allows enterprises to make more accurate forecasts, make informed decisions, and increase productivity.

Networking promotes the development of new forms of cooperation between companies. This can include strategic alliances, partnerships, joint ventures, and other forms of collaboration based on information and resource sharing. For example, companies can use joint platforms to develop new products or services, reducing research and development costs. Additionally, network structures allow for quick responses to changes in demand, which is an important factor in today's dynamic economy.

One of the key economic and technological imperatives is the growing role of e-commerce. Online stores, marketplaces, and electronic service platforms are becoming increasingly popular among consumers. This fosters the development of global markets and allows companies to enter new markets with minimal costs. In turn, consumers gain access to a wider range of goods and services, which increases their satisfaction levels and stimulates economic growth.

It is also worth noting the growing importance of digital platforms. These platforms bring together a large number of users and provide them with the opportunity to interact with each other. Social networks, file-sharing services, and ride-sharing platforms are all examples of digital platforms that are transforming traditional business models. They create new opportunities for monetization, optimize business processes, and attract customers. [25]

An important aspect of networking is the development of innovative technologies such as blockchain. This technology ensures the security and transparency of transactions, reducing the risk of fraud and increasing trust in electronic payments. Additionally, blockchain can be used to create smart contracts, which automate the fulfillment of agreement conditions and reduce administrative costs.

Furthermore, it is important to note that the networking of the global economy promotes the development of new forms of employment. Specifically, the number of remote jobs, freelancers, and temporary workers is growing. This allows companies to manage their resources flexibly and attract highly skilled professionals from around the world. For employees, this opens up new opportunities for professional development and income growth.

In tabular form, the main economic and technological imperatives of the networking of the global economy can be presented (Table 1.1):

Table 1.1 – The main economic and technological imperatives of the global economy networking

Economic and technological imperatives	Description
Information and communication technologies (ICT)	Quick adaptation to market changes, process optimization
Cooperation and collaboration	Strategic alliances and joint ventures
E-commerce	Development of global markets, minimal costs
Digital platforms	Monetization, optimization of business processes
Blockchain	Transaction security, smart contracts
New forms of employment	Remote workplaces, freelancing, flexible management

Source: compiled by author, based on [25]

Thus, the economic and technological imperatives of the networking of the global economy are powerful factors driving the transformation of the world economic system. They create new opportunities for businesses, increase process efficiency, and contribute to global economic growth.

In addition to the aforementioned imperatives, it is also worth considering the impact of networking on the structure and functioning of global supply chains. Thanks to the development of digital technologies, companies can integrate their supply chains, allowing them to manage inventory more efficiently, reduce logistics costs, and improve product delivery times. The use of the Internet of Things (IoT) and automation enables companies to monitor the condition of goods in real-time, significantly enhancing the transparency and reliability of supplies. [26]

Another important aspect is the development of financial technologies (fintech), which simplify financial transactions, increase the accessibility of banking services, and reduce transaction costs. The introduction of digital currencies, mobile payments, and e-wallets expands opportunities for consumers and businesses, providing fast and secure financial transactions.

A significant factor in networking is the growing role of big data and analytics. Modern companies accumulate vast amounts of data, which can be used to analyze market trends, consumer behavior, and optimize business processes. The use of machine learning algorithms and artificial intelligence allows companies to conduct in-depth data analysis, which aids in making informed decisions and enhancing competitiveness.

Another important aspect is the impact of networking on environmental sustainability. The use of cutting-edge technologies enables companies to reduce greenhouse gas emissions, optimize resource use, and implement environmentally friendly technologies. This not only contributes to the preservation of the environment but also enhances the reputation of companies among consumers who are increasingly attentive to the ecological aspects of business activities.

Networking of the global economy also affects social aspects, particularly the level of population welfare. Thanks to the development of digital technologies and new forms of employment, people gain access to new opportunities for education and

professional development. Online courses, webinars, and other forms of distance learning allow workers to upgrade their skills and adapt to changes in the labor market.

An important aspect of networking is the growing significance of cybersecurity. The increase in digital transactions and data exchange heightens the risks of cybercrime, requiring companies to implement the latest information protection measures. The use of encryption, biometric authentication, and other technologies ensures data security and protects confidential information from unauthorized access.

The additional economic and technological imperatives of global economic networking can be presented in a tabular form:

Table 1.2 – Additional economic and technological imperatives of the global economy networking

Economic and technological imperatives	Description
Supply chain integration	Efficient inventory management, cost reduction
Financial technologies (fintech)	Simplification of financial transactions, accessibility of services
Big data and analytics	Deep data analysis, business process optimization
Environmental sustainability	Reducing emissions, optimizing resource use
Social aspects	Access to new learning and development opportunities
Cybersecurity	Protecting information, preventing cybercrime

Source: compiled by author, based on [26]

Thus, the economic-technological imperatives of networking in the global economy encompass a wide range of aspects that influence the structure and functioning of the world economy. They contribute to increasing the efficiency of business processes, developing new markets and forms of employment, reducing environmental impacts, and ensuring information security. These imperatives determine the direction of the global

economy's future development, creating new opportunities for economic growth and improving the population's well-being.

The further development of networking in the global economy is also associated with changes in traditional management models and organizational structures. Companies aiming to succeed in the modern economy are forced to transition to more flexible and decentralized management models. This allows them to respond more quickly to changes in market conditions, improve decision-making processes, and involve more employees in strategic planning.

In particular, network structures promote the development of autonomous work groups and project teams that can independently set goals, plan their work, and monitor task execution. This approach increases employee motivation, fosters the development of their professional skills, and ensures more efficient use of company resources.

Moreover, the networking of the global economy influences the development of innovative ecosystems. In these ecosystems, enterprises, research institutions, government organizations, and community structures collaborate to jointly develop and implement innovative solutions. Such interaction promotes the exchange of knowledge and technologies, accelerates the processes of developing new products and services, and provides competitive advantages in the global market.

Another important aspect is the impact of networking on international trade. With the development of digital technologies and e-commerce, the volume of cross-border transactions is increasing, contributing to the expansion of markets and the reduction of barriers to international trade. This, in turn, stimulates economic growth, supports the development of small and medium-sized enterprises, and improves the standard of living in various countries.

Networking also promotes the development of global logistics networks, ensuring the fast and efficient delivery of goods to consumers. The use of modern technologies such as automation, robotics, and the Internet of Things allows companies to optimize their logistics processes, reduce costs, and improve customer service quality. This is particularly important in a globalized environment where market competition is becoming increasingly fierce.

It is also worth noting that the networking of the global economy influences changes in approaches to marketing and the promotion of goods and services. Modern companies use digital communication channels such as social media, mobile applications, and online platforms to interact with consumers, increase their engagement, and build long-term relationships. The use of analytical tools allows companies to study consumer behavior in detail, analyze their needs, and offer personalized proposals, which enhances the effectiveness of marketing campaigns and increases sales.

Finally, the networking of the global economy significantly impacts the development of educational systems and workforce training. Through the use of online courses, webinars, distance learning, and other digital tools, educational institutions can provide access to quality education for a broader audience. This helps to improve the qualifications of the workforce, develop new skills, and adapt workers to changes in the labor market. [27, p. 166]

Thus, the economic and technological imperatives of the networking of the global economy are complex and multifaceted. They encompass various aspects of economic activity, from management and organizational structures to international trade and education. Networking creates new opportunities for businesses, promotes economic growth, and enhances the well-being of the population, while also posing new challenges and demands on society. In the future, these imperatives will continue to shape the direction of the global economy's development, influencing its structure, functioning, and dynamics.

In the context of the networking of the global economy, it is also important to consider issues of regulation and standardization. The development of digital technologies brings new challenges related to regulating the activities of virtual enterprises, protecting intellectual property, and ensuring cybersecurity. Addressing these issues requires the development of international standards and regulatory frameworks that will facilitate the harmonization of economic activities at the global level.

The development of digital infrastructure is another crucial aspect of networking. Investments in the development of high-speed internet, fifth-generation mobile networks (5G), and other communication technologies lay the foundation for further economic

growth. This allows for providing access to digital services in remote and underdeveloped regions, promotes greater inclusion, and reduces the digital divide.

Networking also changes approaches to knowledge and innovation management. In the context of the networked economy, knowledge becomes a key resource, and its effective use and dissemination determine the competitiveness of enterprises. Companies create specialized platforms for knowledge exchange, implement intellectual asset management systems, and actively utilize open innovation, engaging external resources and ideas for the development of their products and services.

It is also important to consider the impact of networking on economic and social inequality. On the one hand, digital technologies create new opportunities for economic development and increasing the prosperity of the population. On the other hand, unequal access to technologies can deepen economic and social inequality among different population groups and regions. This requires the development of policies aimed at ensuring equal access to digital resources and services, supporting small and medium-sized enterprises, and developing human capital. [28, p. 99]

One of the key aspects of networking is the formation of new forms of consumer behavior. Modern consumers are becoming more informed and demanding, expecting a high level of personalization and convenience in the use of goods and services. This stimulates companies to implement innovative solutions that take into account the individual needs and preferences of consumers, using artificial intelligence technologies and big data analytics to create personalized offers.

Networking also promotes the development of the sharing economy, which is based on the use of shared resources and services. Sharing platforms for housing, transportation, workplaces, and other resources allow for cost reduction, increased resource efficiency, and the creation of new income opportunities. This changes traditional models of ownership and consumption, creating new forms of economic activity and market interaction.

The impact of networking on global competition cannot be overlooked. With the development of digital technologies, companies can more easily enter new markets, expand their geographical presence, and attract new customers. This creates more intense

competition among enterprises, forcing them to constantly improve their products and services, reduce costs, and improve the quality of service.

However, networking also creates new challenges for national economies. Specifically, issues such as the taxation of digital companies, protection of national interests, and ensuring economic security are becoming increasingly relevant. Addressing these issues requires international cooperation and coordination of efforts among governments, businesses, and civil society organizations.

Thus, the economic and technological imperatives of global economic networking determine the main directions of its development. They cover a wide range of aspects - from management and innovation to social issues and international competition. Networking creates new opportunities and challenges for economic agents, influencing their activities and defining future development strategies. In this context, effective use of digital technologies, development of innovative ecosystems, and ensuring equal access to resources are key factors for the successful transformation of the global economy.

Another important aspect of networking is its impact on financial markets and investments. With the emergence of digital platforms for trading stocks, bonds, and other financial instruments, investors have gained access to more information and opportunities for real-time transactions. This increases market liquidity, reduces transaction costs, and promotes a more transparent and efficient allocation of capital. Additionally, the development of fintech startups and the use of blockchain technologies are changing traditional models of financial intermediation, creating new forms of investment products and services.

Networking also influences the development of small and medium-sized enterprises (SMEs). Through access to digital platforms, SMEs can compete with large corporations on a global scale, using online stores, social networks, and online advertising to promote their goods and services. This contributes to the growth of entrepreneurial activity, the creation of new jobs, and the increase in the level of economic development in regions. Furthermore, digital technologies enable SMEs to attract investment through

crowdfunding and other forms of crowdfunding, reducing dependence on traditional bank loans.

Another important aspect is the impact of networking on global supply chains. With digital technologies, companies can create integrated supply chain management systems, allowing them to optimize procurement, production, and distribution processes. The use of Internet of Things (IoT), artificial intelligence, and big data technologies allows companies to monitor and analyze the state of supply chains in real time, increasing their flexibility and resilience to external influences.

It is also worth noting the role of networking in shaping new labor markets. With the development of digital platforms for job search, freelancing, and remote work, the number of people who can work in the international market without leaving their country is increasing.

CHAPTER 2.

DIRECTIONS OF FURTHER NETWORK TRANSFORMATION OF THE GLOBAL ECONOMY

2.1 Characteristics of the scale of networkization of the global economy

The increase in competitiveness of enterprises and individual economies today largely depends on the level and efficiency of implementing advanced innovative technologies in various sectors: manufacturing, services, healthcare, agriculture, education, defense, and so on. The use of algorithms and computer systems to address tasks that previously required human intellectual activity has become the norm. The digital network transformation of the economy affects labor markets, the efficiency of enterprise activities, innovation development, and at the same time poses additional requirements for regulating certain aspects of digital technologies and addressing issues such as unauthorized dissemination of personal information and ensuring cybersecurity. Therefore, researching the scale of networking in the global economy will remain a relevant task for a long time.

The rapid development of information and communication technologies has led to the emergence of new tools and ways of using them, opening up new opportunities for many economic agents. Against the backdrop of the widespread implementation of digital network technologies, the "network economy" is forming as a component of the overall economic system.

The basis of the digital network economy is data analysis, with the main source being devices connected to the Internet. The development of new technologies that generate, collect, and effectively analyze large volumes of digital data is ongoing. The Statista portal forecasted in 2022 that the total volume of global data would reach 181 ZB by 2025. This forecasted figure described in the Figure A.1 (Appendix A).

In 2023, video (54%), social media (13%), and games (10%) accounted for the largest share of data traffic (Figure 2.1).

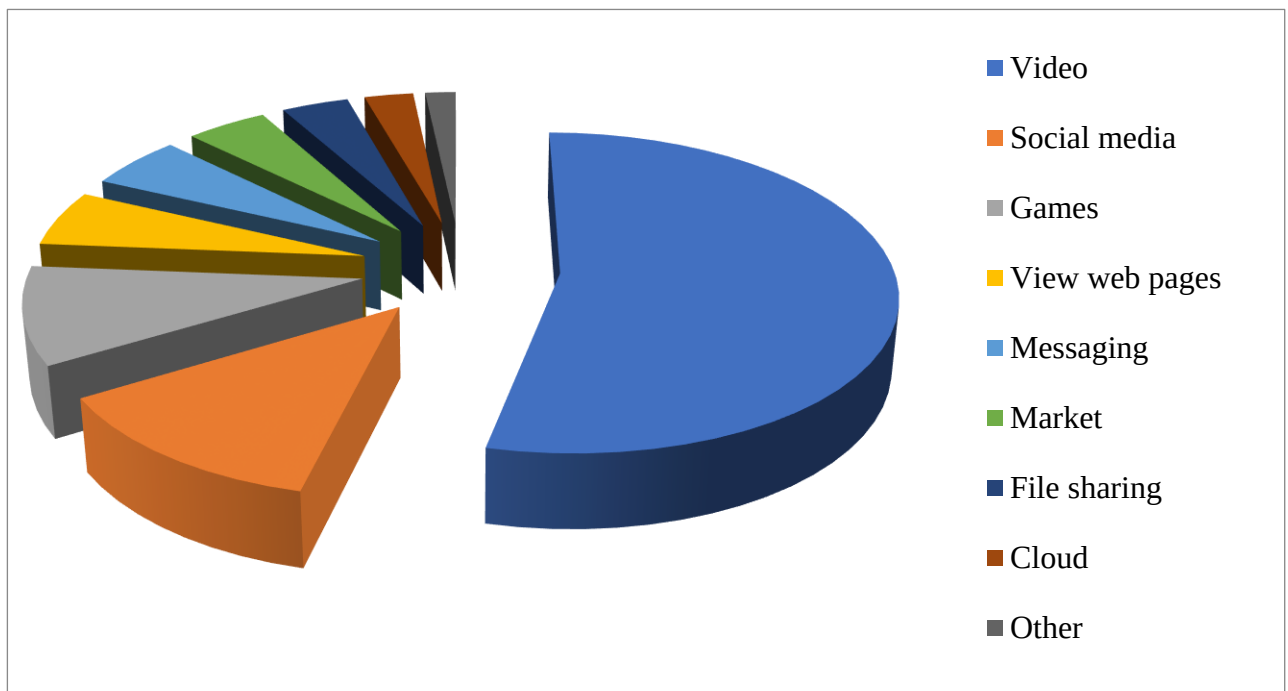


Figure 2.1 – Global data traffic by category

Source: compiled by author, based on [29]

Social networks are filled with video content, with platforms like TikTok being entirely based on video, while on Facebook, Instagram, and Twitter, over 50% of the content consists of videos. It is expected that the next stage of data usage will involve a shift from entertainment to productivity, including marketing data about clients, competitors, and market development. Significant growth is also expected in the segment of "embedded data," which refers to information generated through the use of Internet of Things (IoT) devices.

In regional terms, the most information is generated and processed in the United States. The US has the largest number of data processing centers - 5388. The top 10 countries with the most data processing centers include developed countries from various regions of the world: the US (5388), Germany (522), the UK (517), China (449), Canada (336), France (315), Australia (306), the Netherlands (300), and Japan (219). For a clearer understanding, I offer a figure B.1 (Appendix B).

Digitization has ceased to be just a trendy trend; now it defines the fundamental conditions for the functioning and development of business, the economy, and the

country. According to analysts' forecasts, by the end of 2024, investments in digitalization of business processes will account for 55% of all investments in the development of information and communication technologies. The processes of digitization received a significant boost during the Covid-19 pandemic and now provide opportunities to increase profitability and economic efficiency through the implementation of digital solutions.

The main trends in the development of the digital economy remain: the Internet of Things (IoT), artificial intelligence (AI), blockchain, cloud technologies, digital platforms, cybersecurity, and smart cities. No sphere operates without the use of modern digital solutions, leading to the emergence of new industries: digital technologies in the financial sector (FinTech), innovative technologies in insurance (InsurTech), digitization of agriculture (AgroTech), digitalization of healthcare (HealthTech), digital technologies in education (EdTech). Digital technologies are also actively applied in government management, defense, environmental protection, and citizens' everyday lives. In a short period of time, digital infrastructure has come a long way in development and now ranks fourth among the necessary elements for life after water, gas, and electricity.

The digital infrastructure of the economy intertwines and unites physical and virtual technologies: computer storage, networks, programs, and platforms, software, digital assets, and tools. From a business perspective, the implementation of digital technologies provides new competitive advantages, increases flexibility, and speeds up the scalability of activities in new markets. The main global trends in the use of digital technologies are: deploying digital infrastructure "at the edge", increasing dependence on software developers, and forming partner ecosystems. Large global companies are no longer relying on a single "digital core" and are beginning to distribute infrastructure closer to data sources to quickly receive and effectively analyze insights.

The development of a culture of partnership and ecosystems significantly influences the development of the digital economy. The success and efficiency of global digital businesses depend on their ability to cooperate, interact, and create joint entrepreneurial systems. In this direction of development, they can leverage their

strengths, quickly and easily implement technological solutions, and digital tools of partners.

According to forecasts, over the next decade, almost 70% of the world's GDP will be provided by digital products. The growth rates of the contribution of digitized enterprises to global GDP from 2018 to 2023 indicate significant development of digital tools, assets, technologies, and infrastructure.

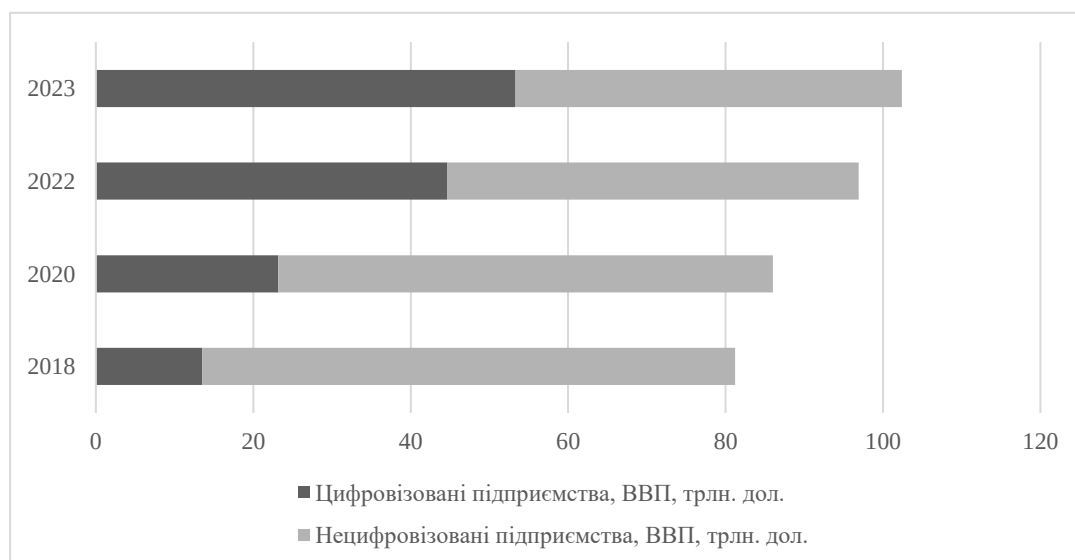


Figure 2.2 – Digitalized enterprises in global GDP, trillion dollars

Source: compiled by the author based on [29]

On November 20, 2023, the Network Readiness Index (NRI) was updated at the business school of the University of Oxford. The 2023 report was dedicated to the theme of trust in technology and the networked society, as it draws attention to the potential serious crisis of societal trust in the Internet and related technologies in the global world. The global event dedicated to the launch of the project will serve as a platform for publishing the conclusions of the 2023 report and participating in discussions on the vital aspect of restoring trust in the networked society, taking into account the views of government, industry, and scientific circles.

The Network Readiness Index, first launched in 2002 at the World Economic Forum and revamped in 2019 by its founders Soumitra Dutta and Bruno Lanvin, is an in-depth analysis of indicators from 134 countries across four dimensions of digital readiness - technology, people, governance, and impact - using 58 indicators.

As network readiness is a multidimensional concept, the Network Readiness Index (NRI) is a composite index consisting of three levels (Figure 2.3).

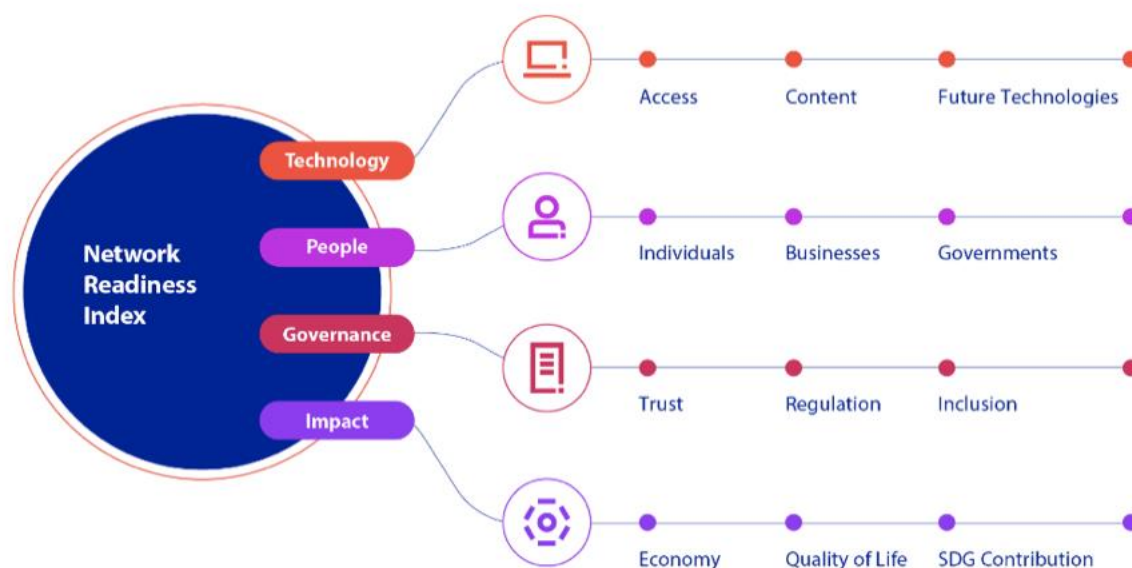


Figure 2.3 – Components of NRI(Network Readiness Index)

Source: compiled by author, based on [30]

The primary level consists of four pillars, which constitute the fundamental aspects of network readiness. Each of the main components is further divided into sub-components, which form the second level. The third level consists of individual indicators distributed across various sub-components and components of the primary and secondary levels. All indicators used in the NRI belong to one of the main components and sub-components.

The NRI ranking has shown that countries with more developed economies typically demonstrate a higher level of network readiness. This trend is evident in Figure 2.4, which depicts the relationship between NRI indicators and GDP per capita.

While wealthier countries generally correspond to higher levels of technological readiness, the graph shows exceptions. Many low and middle-income countries exceed expectations in terms of network readiness.

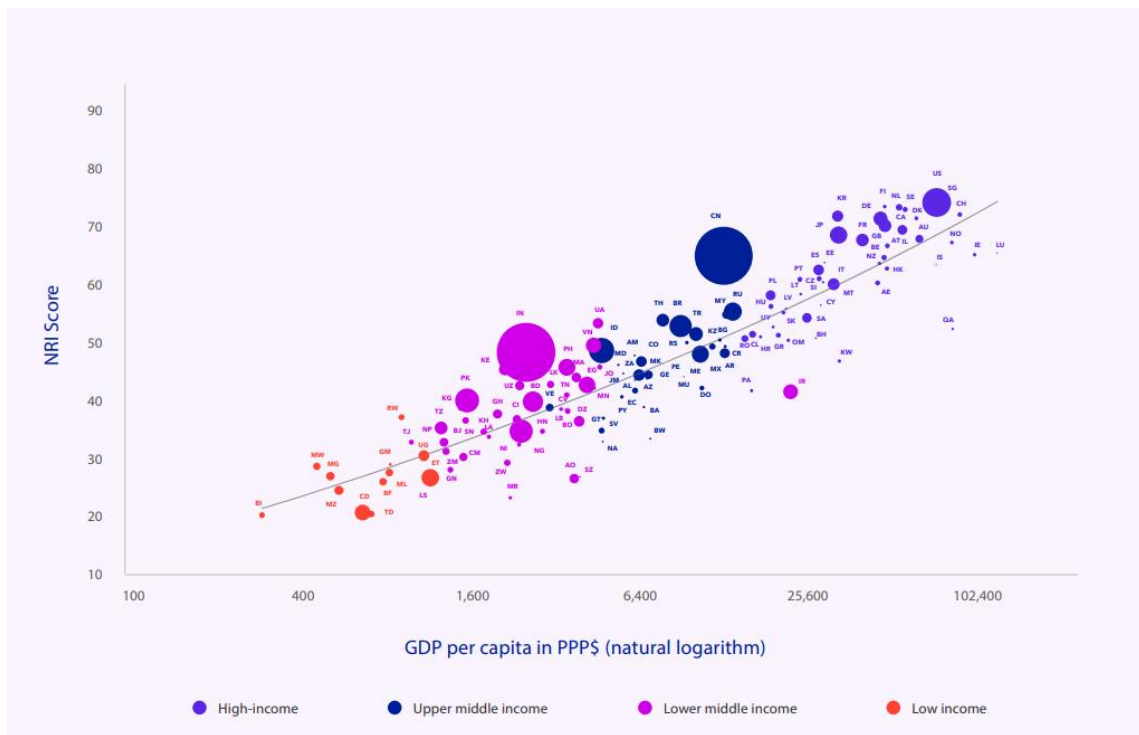


Figure 2.4 – Estimates of NRIs and GDP per capita in 2023

Source: compiled by author, based on [30]

In 2023, China achieved significant success, securing the 20th position in the global ranking. Other above-average income countries, such as Thailand (42nd), Brazil (44th), and Indonesia (59th), also join the cluster surpassing expectations. A notable example is Ukraine, ranking 43rd, though it's important to note that data for this specific case may be delayed. In the category of below-average income, India (60th), Vietnam (56th), and the Philippines (69th) demonstrate commendable aptitude for digital technologies. In the group of low-income countries, Rwanda (99th) and Malawi (121st) stand out, underscoring that even nations with limited financial resources can achieve significant network readiness. It's particularly noteworthy that many economies exceeding network readiness expectations predominantly originate from below-average income groups. Geographically, these leaders are concentrated in the Asia-Pacific region and Africa, highlighting rapid technological progress and digital adoption in these parts of the world.

However, historically, it has been the case that the top 10 companies in the NRI ranking demonstrate three noticeable trends: they consistently belong to high-income countries, showcasing high readiness in all dimensions of networks, and European countries continue to dominate the list.

These trends persist in the NRI 2023 ranking: each of the top 10 countries achieves the 25th position in the ranking across all four main dimensions (technology, people, governance, impact). Regarding regional distribution, Singapore and Korea remain the only countries from the top 10 located in the Asia-Pacific region, while the United States is the sole economy situated in the Americas. The rest of the top 10 ranking consists of European countries.

Table 2.1 – Top 10 countries in the NRI ranking in 2023

Country	NRI ranking	NRI assessment	Technologies	People	Management	Impact
USA	1	76,91	1	4	7	23
Singapore	2	76,81	5	6	10	1
Finland	3	76,19	10	7	1	2
Netherlands	4	76,04	4	15	2	5
Sweden	5	75,68	9	9	5	4
Switzerland	6	74,76	2	14	13	6
Republic of Korea	7	74,48	17	1	18	11
Denmark	8	74,06	11	11	3	8
Germany	9	74,00	6	8	14	10
United Kingdom	10	72,75	8	10	16	9

Source: compiled by the author based on [30].

Therefore, digital technologies today are one of the main drivers of growth and technological development in the global economy. The implementation of digital technologies contributes to increasing the competitiveness of various sectors of the world economy, creating new business opportunities in terms of connecting to global digital

value chains, emerging new markets and niches, as well as accelerating the introduction of new digital products to the global market.

The process of digitization does not occur simultaneously in different countries around the world, hence there is a certain gap in the degree of digitization of national economies, leading to digital inequality and, consequently, increased dependence of countries on developed ones. Policies, legal norms, traditions and culture, the level of economic development achieved, the level of education, the country's own technological base, and many other factors play an important role in the network transformation of the world economy. As a result of the digital transformation of the global economic architecture, new contours of the digital economy emerge, characterized by exponential growth in data flows.

Thus, the digital market essentially serves as a modern mechanism for a swift transition from national markets, limited by state borders, to a single global market. This situation requires the study of the economic aspects of networking in the context of sustainable development of the global economy.

2.2 Analysis of Ukraine's involvement in the network transformation of the global economy

The creation of a technology-oriented digital economy can become an engine of economic growth needed by most countries worldwide, including Ukraine. The potential economic benefits of networked production and economic activities are significant - primarily, it creates new sources of income and expands the economic potential of the country. This economic upturn leads to increased global competitiveness and improved living conditions for the population.

At the same time, networking, on one hand, poses potential risks in the form of qualitative changes in society, production structure, and the economy as a whole, requiring efficient cost-reduction measures from economic entities; on the other hand, it creates mechanisms to minimize these risks, grounded in the progressive opportunities provided by the digitization process. This dialectical contradiction can be resolved by

creating socio-economic conditions associated with the implementation of new cyclical business models and the establishment of client relationships among economic entities.

According to the Concept of Electronic Governance Development in Ukraine, approved by the Cabinet of Ministers of Ukraine on September 20, 2017, No. 649-r, the introduction of electronic governance is a fundamental prerequisite for the development of an efficient digital economy and digital market in Ukraine and its further integration into the EU Digital Single Market (EU Digital Single Market Strategy). In 2018, the Concept of Digital Economy and Society Development of Ukraine was formed, the Digital Agenda of Ukraine was approved, and an action plan for its implementation was adopted. The National Security Strategy of Ukraine, approved by the Decree of the President on September 14, 2020, No. 392/2020, identifies digital transformation among the directions of the state's external and internal policies to ensure its national interests and security, which will provide administrative services through a secure single window using modern information technologies and form digital literacy, cyber resilience, and cybersecurity of the national information network.

Additionally, in the National Economic Strategy until 2030, approved by the Cabinet of Ministers' resolution No. 179 of March 3, 2021, the digital economy is identified as one of the drivers of economic growth in Ukraine, and one of the benchmarks, principles, and values in economic policy is the construction of an efficient digital service state. The Law of Ukraine "On Stimulating the Development of the Digital Economy in Ukraine" lays the groundwork for further digitization of the country.

Therefore, the formation of a digital economy is one of the national interests aimed at economic growth, prevention of the shadow economy, and corruption. Of course, digitizing all sectors of the economy will not be easy, but without digitization, full integration into the global economy is impossible.

Traditional drivers of economic growth are increasingly yielding to digital technologies for several reasons:

Firstly, before the advent of the digital economy, economic growth was driven by a number of factors, including traditional industries, dynamic exports, foreign

investments, labor cost advantages, and funding from international funds. But with the digitization of the economy, these drivers begin to weaken.

Secondly, countries and efficiently integrated economic regions and unions become the most attractive for investment. This allows developing countries to partially reduce economic disparities with developed countries, significantly improving the standard and quality of living for the population.

Thirdly, the cost of labor also increases due to the higher demands for education and professional skills, which can become a serious problem in the context of limited resources. However, digitizing education solves this problem by creating conditions for the training of highly qualified personnel and involving them in economic relations, thereby reducing unemployment.

Fourthly, the application of digital technologies ensures unprecedented growth in productivity in all spheres of public production.

According to official reports from the World Bank, the Ukrainian economy showed successes in 2023: high economic indicators, confirmed by the latest assessments of the EU and the IMF. It is noted that Russian aggression led to a decline in Ukraine's GDP by 29% in 2022. However, according to various estimates, in 2023, Ukraine's GDP recorded growth of 5-5.5%. This is a recovery trend after a sharp decline in 2022. Despite this improvement, the GDP remains significantly lower than in 2021 (Fig. 2.5).

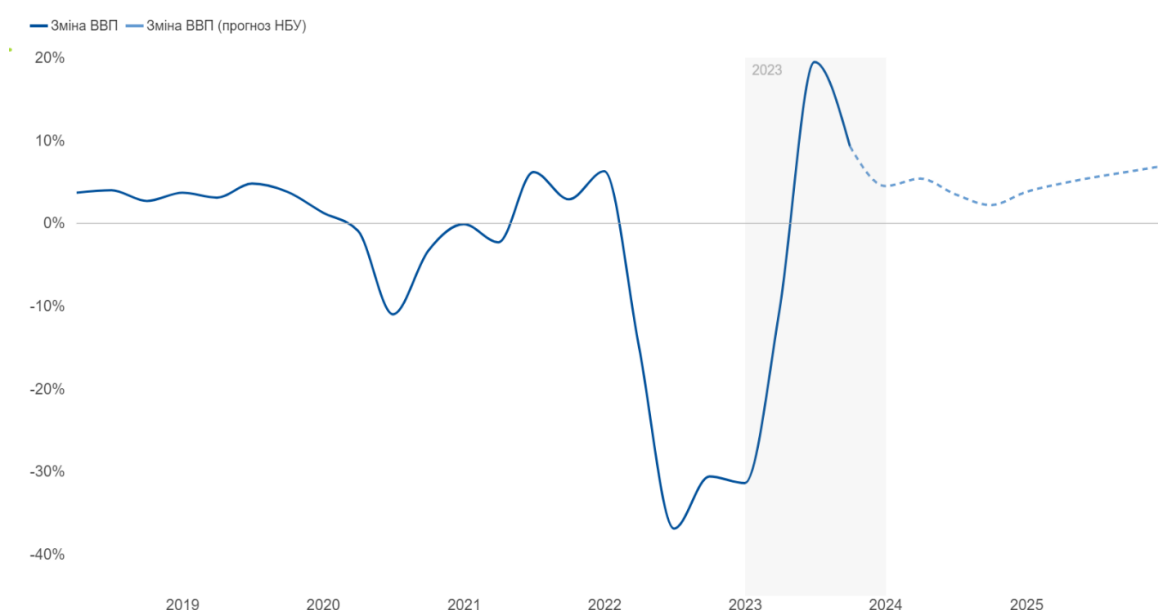


Figure 2.5 – Changes in Ukraine's GDP, % from 2019-2025 years.

Source: compiled by the author based on [22]

The second stage of the study involved analyzing the World Digital Competitiveness Index (WDCI) data on digitalization and the Global Competitiveness Index (GCI). Figure 2.6 shows the dynamics of their values for Ukraine.

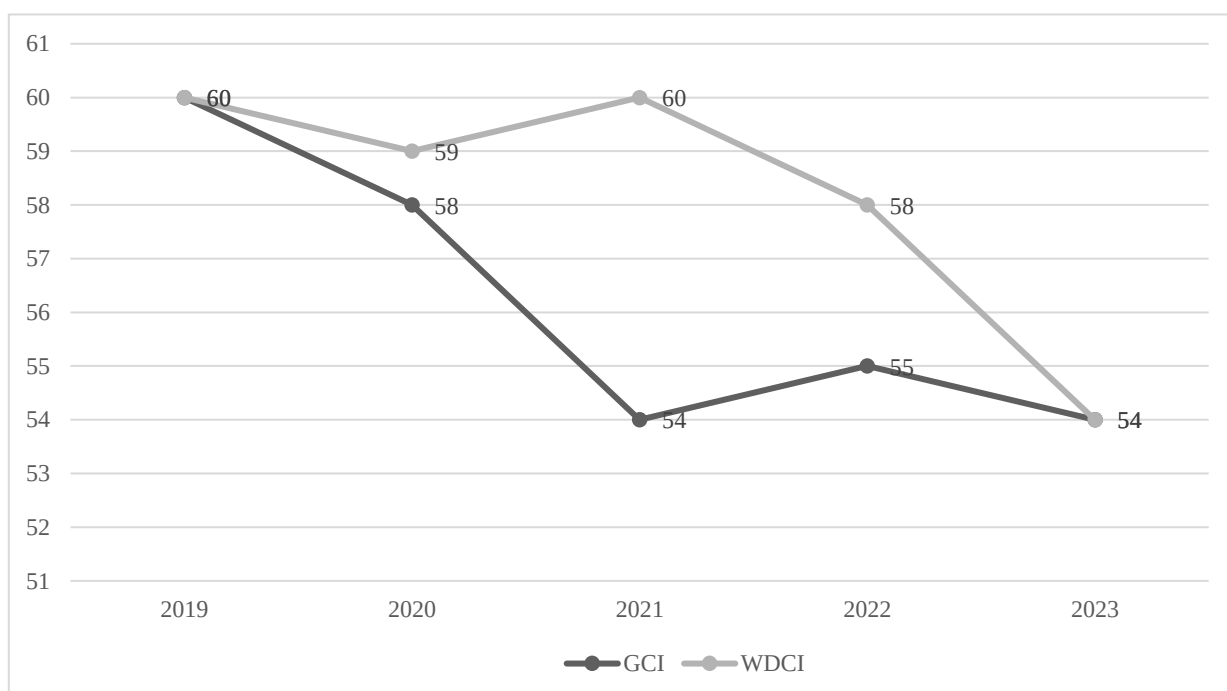


Figure 2.6 – Global and digital competitiveness indices 4.0 from 2019-2023

Source: compiled by the author based on [31]

In the overall GCI and WDCI rankings, Ukraine ranks relatively high (54). An analysis of the country's position in the GCI shows that its indicators range from 54 to 60 (average). The analysis of GDP per capita and GCI data leads to the conclusion that, in general, Ukraine has ambiguous dynamics of economic development, which is reflected in a positive change in GDP in 2021 and an improvement in the country's competitiveness.

The high level of ICT adoption in Ukraine (58th place) indicates the expected positive impact of economic recovery on the spread of ICT. To confirm or refute this assumption, it is necessary to take into account the indicators of digitalization and the stability of the macro environment.

To do this, the next step was to study a group of indicators that reflect the level of digitalization in Ukraine. As mentioned above, Ukraine ranks in the middle of the ranking according to the Global Connectivity Index (Figure 2.7).

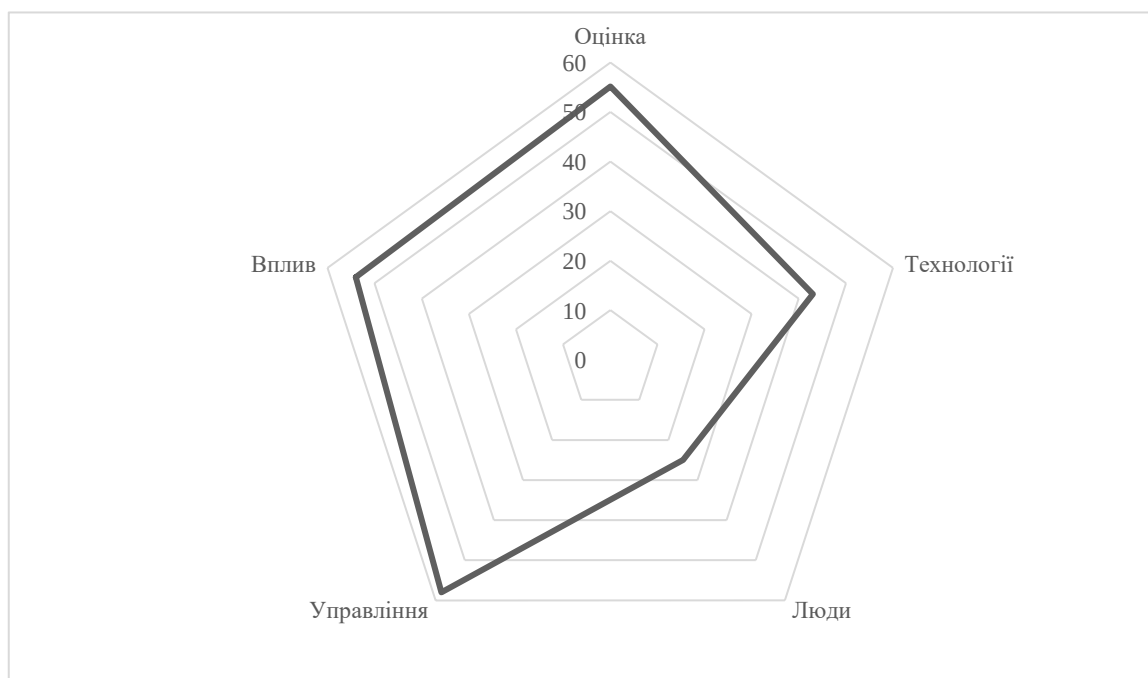


Figure 2.7 – Global Connectivity Index in 2022.

Source: compiled by the author based on [32]

Thus, in 2023, Ukraine ranked 43rd with a total score of 55.16, which means that the digital transformation process is sufficiently advanced. Ukraine has good results in the Influence, Governance, and People components, but the Technology component needs to be improved. At the same time, Ukraine ranks highest among lower-middle-income countries, outperforming even some other upper-middle-income countries. However, it lags far behind all EU countries. To compare with the level of digitalization in the EU, Ukraine is working on joining the DESI index.

Ukraine's rank in the FM Global Resilience Index (GRI) is 46.8, which corresponds to 75th place out of 130. It should be borne in mind that this is an integral characteristic that determines the country's position in the ranking and averages the factors that affect resilience. In particular, the GRI combines 12 key sustainability factors classified as related to economic factors, risk quality factors, and supply chain factors. The fourth parameter, the country rating, describes the overall situation in the context of sustainability. Figure 2.8 shows how the scores differ depending on the factors considered.

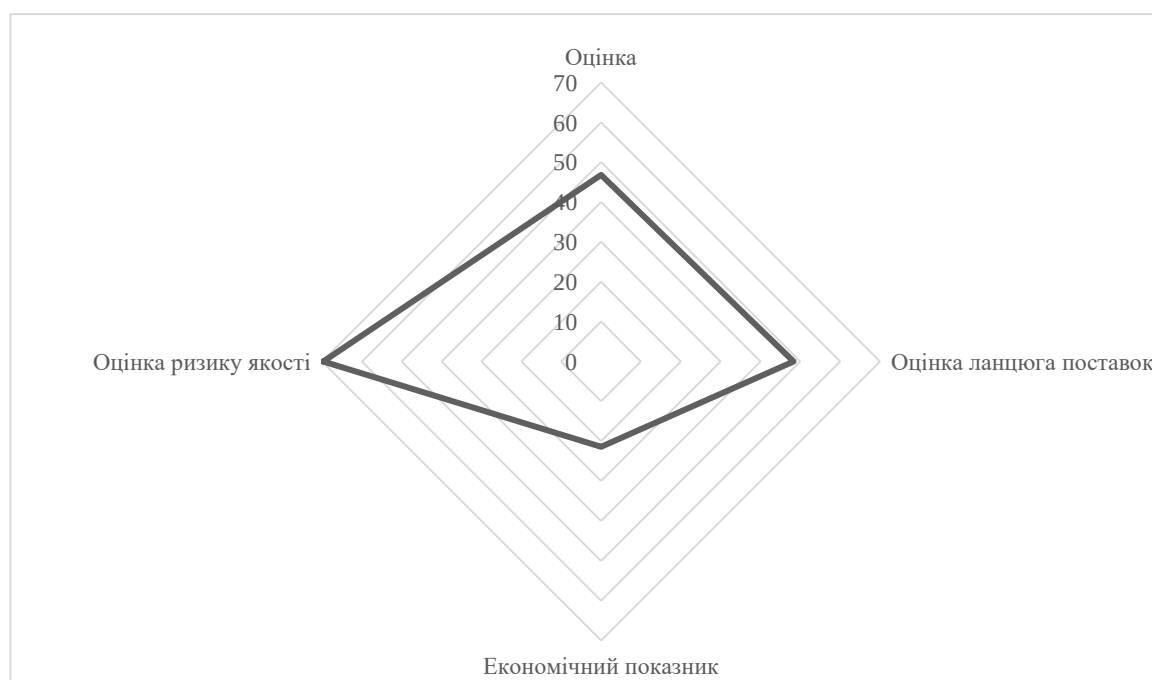


Figure 2.8 – Ukraine's Resilience Index in 2023

Source: compiled by the author based on [33]

Therefore, the state of Ukraine's economic system can be characterized as weak due to the low value of the economic indicator - only 21.4 out of 100, while the two main stability factors (risk quality and supply chain) received 69.7 and 48.3, respectively. The low economic indicator was obtained due to low productivity, political risk, high energy intensity of the economy, and high level of urbanization. In 2023, these characteristics are unsatisfactory due to the crisis and military actions against Ukraine.

Thus, the analysis showed high motivation of the macro environment and readiness of the population for digital transformation, which even in conditions of an

unsatisfactory state of the economy and digital infrastructure positively affects the economic growth of Ukraine.

The modern economy is characterized by trends and technologies that both cause positive shifts in the components of economic growth due to digital transformation of society and create constraints for further growth. This thesis is based on three factors:

Firstly, competitive digital economy entities are growing in modern production and are efficient in the real sector. However, the practice shows that economic uplift does not always continue. Indeed, there are signs that there are limitations to growth in society, such as negative demographic trends, which reduce the positive effects of skilled labor growth. However, Ukraine is taking many steps to address this issue, including developing digital education.

Secondly, the country stands on the brink of the Fourth Industrial Revolution, during which new technologies will fundamentally change the labor market and the economy as a whole. These revolutionary changes will stimulate production growth and contribute to the emergence of new professions, such as big data scientists, robotics engineers, and developers of new technologies, among others. Today, digitalization of the economy promotes the emergence of new professions, new business models, and new market segments, but this process also creates serious challenges. Digitalization is the basis for increasing productivity in the economy, but it can also have a negative impact on the labor market, as it requires digital skills and the formation of a lifelong learning support system.

Thirdly, new ecosystems are forming as a result of the transformation of the national economic system under the influence of digitalization. This stimulates the development of new digital strategies and toolkits for future digital transformation. As digitalization increasingly disrupts traditional society, concerns about its impact on social factors such as job loss, changes in wage structures, inequality, use of health-saving technologies, resource efficiency, personal safety, and community security are growing. In this regard, economists conduct a detailed quantitative and qualitative analysis of socio-economic indicators, calculate forecasts of the potential benefits of digitalization for industries, and determine that digitalization is a catalyst for employment growth in

many sectors. Thus, the impact of digitalization becomes increasingly significant, and the consequences of digital transformation go beyond the labor market.

The military situation in which Ukraine's digital economy operates complicates the work of the IT sector. Indeed, conditions complicate the execution of export contracts (90% of which are retained), the search for new orders, hinder investment in development. Instead, this sector continues to develop dynamically, unlike other sectors of the economy, and directs the revenue received (revenue from exports for the first half of 2023 amounted to \$3.74 billion, which is 23% higher than the previous year) to the country's budget, to support the army and humanitarian aid. Currently, the share of Ukrainian IT services accounts for 37% of the total volume of exports of all services, and the export of computer services from Ukraine continues to grow annually. This is a sector that is practically working at pre-crisis levels, and most importantly, over 90% of companies have retained their clients.

Currently, Russia is trying to attack not only with missiles but also with cyber attacks, trying to obstruct access to digital services and interfere with government institutions, energy, logistics, and healthcare. To strengthen protection, some institutions have moved central databases abroad (including Prozorro) and have audited information systems for vulnerabilities (including the Ministry of Digital Transformation).

The development of digitalization for the creation of a digital state and the restoration of economic growth during the war has slowed due to cyber attacks on information systems of institutions, enterprises, organizations, power outages, and damage to Internet networks as a result of enemy actions, as well as the reduction of IT specialists due to migration and military service. The content of digitalization itself has changed during the war, shifting focus from service provision to defense capability formation.

However, even in military conditions, Ukraine continues to shape a secure digital future with the EU, including such steps by our government:

- activation of digital visa-free travel with the participation of the EU and Ukraine in competitions of the European Union program "Digital Europe" until 2027;
- creating conditions for joining the European roaming area;

- public-private partnership to accelerate the recovery of objects destroyed by war and the construction of new objects related to post-war restructuring of Ukraine's economy;

- increasing motivation to invest in domestic Internet infrastructure and telecommunications companies (IT center of Europe);

- involvement of countries and international institutions in the restoration of damaged infrastructure and critical projects;

- implementation of marketing of economic recovery in Ukraine based on the creation of the Made with Bravery marketplace platform;

- digital lease programs.

Their details are presented in the National Program of Informatization for 2022-2024, approved by the resolution of the Verkhovna Rada of Ukraine dated 08.07.2022 No. 2360-IX, and in the Plan for the Recovery of Ukraine.

The results of the scientific analysis show that the positive impact of digitalization on the economy is possible only when the economic environment is ready for such transformation (this can be assessed by the stability index and its components). In turn, it is important to have readiness of business and population for the implementation of innovative digital technologies. Therefore, to develop an effective digitalization strategy for the country, it is necessary to consider three aspects: the pace of economic growth, the situation, and the stability of the environment.

2.3 Problems and prospects for further networking of the global economy

In networked societies, trust is the fundamental basis for utilizing mass media, communication tools, and relevant digital information systems. As innovations driving networked societies became more widespread, the reliability of the technologies underlying this new era was perceived as given. However, as the ways in which we receive information, communicate, use services, and work with technologies change, problems arise for everyone, especially for those lacking digital experience or trust in technology. Therefore, the perception of "givenness" has shifted to an increase in

skepticism toward the Internet and digital technologies not only among those who lack digital connectivity but also among the general public, intellectuals, business elites, politicians, and even computer specialists and engineers.

The last decade has revealed the problem of erosion of trust in digital technologies, exemplified by concerns over social media and, more recently, the rapid advancement of Artificial Intelligence (AI), particularly Generative AI models. Clearly, there's an element of collective skepticism. However, various factors fuel predominant negative scenarios, from concerns about fake news on social media to the undermining of privacy during data collection generated by life in the digital age. There's a growing concern about how and by whom data is collected, stored, exchanged, and processed for various purposes.

New approaches to Artificial Intelligence based on machine learning and Large Language Models (LLMs) further complicate this issue. AI promises significant benefits for the efficiency and ease of internet search and virtual reading. However, it also raises concerns about the ability of malicious actors to generate fake news, images, and voices, thereby undermining trust. The potential of Artificial Intelligence is vast, but providing the opportunity for malicious actors to create content that blurs the lines between reality and fiction may further erode trust in online content.

Concerns about new technologies are growing, including questions about appropriate forms of digital governance and regulation, as well as concerns about the growing power of monopolies held by major technology companies. There is worry about government intervention, disinformation campaigns, and progress in surveillance technologies. Recently, there's been increasing concern about the rapid growth of AI and Large Language Models (LLMs), such as ChatGPT. All of this fuels a crisis of trust in the networked society of the modern digital era.

As more and more countries increasingly rely on technology and the internet, it becomes increasingly important to ensure a certain level of trust exists among digital mechanisms of networked society. Any factor that can hinder society from fully leveraging digital technologies for the public good requires critical examination. NRI seeks to identify and analyze key trends, identify driving forces in the development of

media, information, and communication technologies and their societal consequences, and provide effective policy and practice recommendations. NRI's goal is to assist policymakers, industry, and academia in creating measures that enhance the positive impact of technologies on society and the economy, while fostering positive relationships between people and digital technologies.

Among the promising directions for the development of the digital economy, analysts highlight 5G security, virtual reality gaming and virtualization software, digital education, healthcare digitization, e-commerce logistics, alternative energy, FinTech, and others (Fig. 2.9).

The development of the digital economy is closely linked to information and communication technologies, particularly with the deployment of cellular communication. Fifth-generation (5G) communication offers enhanced network capacity and, at the same time, creates numerous threats to businesses, governments, and average citizens. Consequently, there is a growing need for reliable data transmission channels and the protection of confidential information. It is forecasted that the market for security systems in cyberspace (cybersecurity) will grow by 35% annually, reaching \$25.9 billion by 2030. The world of the digital economy undoubtedly becomes a new platform for innovation, discoveries, and development.

Analysts note significant growth in the adoption of virtualization technologies in business processes. It is forecasted that the market for business virtualization software will reach \$189.4 billion by 2027. Leading technological companies such as Amazon, Google, Microsoft, Oracle, and Huawei Technologies are already implementing virtualization software, which is in high demand in the United States, China, Japan, Canada, Germany, Australia, India, and other countries.

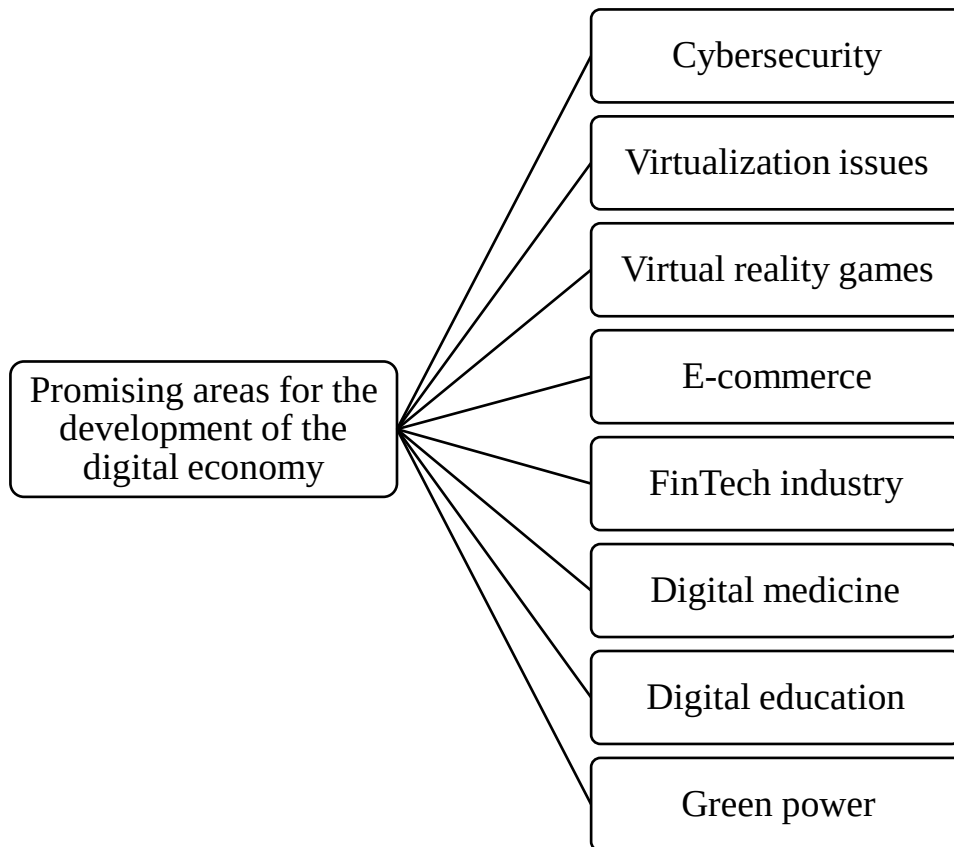


Figure 2.9 – Promising areas for the development of the global digital economy

Source: compiled by the author based on [34]

Despite forecasts of a shift in digital "focus" towards "productivity" and "embedded technologies," the virtual reality gaming market will continue to grow rapidly. Technological advancements in this field will ensure an average annual growth rate of 28%, allowing the market to reach \$100.23 billion by 2027. The Global Virtual Reality Gaming Market Report and Forecast 2022–2027 indicates that the most intensive growth will be observed in developing countries such as Brazil, India, and Mexico. This trend is attributed to rising consumer incomes and the availability of virtual games supported by virtual reality.

The implementation of digital technologies has also significantly impacted education, leading to changes in its methods and tools. The use of smart boards, tablets, projectors, personal computers, the Internet, online classes, and mass courses, as well as interactive educational platforms, has significantly simplified access to educational materials. At the same time, the further development of artificial intelligence

technologies, particularly the use of such technologies as ChatGPT at early stages of education, can have serious negative consequences.

The development of digital healthcare will be active in the coming years. Predictive analytics for clinical research and the management of medical operations is increasingly used in educational institutions. Electronic health systems, electronic prescriptions, and the promotion of healthy lifestyles are just a fraction of the digital solutions in healthcare. The volume of healthcare services that can be provided remotely using the latest communication technologies will grow. These transformational changes will enhance the healthcare system's capabilities, improve its quality, and bring it closer to advanced healthcare standards. In the future, all medical institutions will transition to electronic document management and effectively use modern technologies to optimize work and improve methods of providing quality medical care to the population. Artificial intelligence systems in medicine, medical robotics, the Internet of Medical Things, and smart sensors are just a few of the digital technologies that contribute to the improvement of healthcare standards.

E-commerce and related industries will increase their share of global GDP. Trading platforms are becoming more complex ecosystems aimed at maximizing benefits for buyers and businesses. E-commerce offers a variety of goods with individual personalization. Innovative technologies, such as artificial intelligence, machine learning, and big data analysis, allow the creation of the most attractive offers for customers, expand analytical capabilities for understanding consumer behavior, improve loyalty systems, and optimize business processes. Today, e-commerce is a complex ecosystem and a key segment of global business.

Sustainable development strategies and the transition to Industry 5.0 emphasize the importance of companies specializing in developing solutions in alternative energy and energy-saving technologies. The pace of innovation development in these areas significantly exceeds most companies' ability to implement them effectively. Therefore, companies must quickly adapt to changes in the external environment and maximize the benefits of digitizing individual processes. The most anticipated technologies in this

segment are the implementation of green energy, the development of smart cities, and the application of circular economy principles.

FinTech, as a promising and extensive segment of the digital economy, represents a group of technologies aimed at transforming, improving, and automating financial services. This sector opens up new opportunities for consumers, providing them with remote access not only to traditional financial services such as payments and transfers but also to advanced functions such as budgeting, financial planning, investing, and more. FinTech promotes integration between the financial system and advanced technologies, actively transforming the financial services market.

Thus, the digital transformation of the economy is a major strategic direction for the country's development, and the implementation of technologies contributes to productivity and competitiveness growth. Digital solutions are used to increase efficiency in all sectors of the economy, society management, and the public sector. However, there are challenges and risks associated with digital transformation, such as cybersecurity, changes in organizational culture, and the need for constant technological updates and innovations. The process of implementing digital assets and solutions will gain momentum in the next decade, and the development of promising sectors will enhance the country's competitiveness and sustainable development.

2.4 Ways of further network transformation of the global economy

New network technologies open up vast prospects, new paths, and opportunities for future development and prosperity. However, they also create new problems. Additionally, digital technologies have not yet fully delivered the expected dividends in the form of higher productivity growth. In fact, in many countries, total output growth has slowed over the past two decades, resulting in slower economic growth.

At the same time, income inequality and related disparities have intensified, especially in developed countries, fueling social unrest and political constraints. There is uneven participation in the new opportunities created by digital transformation across different countries. One important reason for these outcomes is that policies and

institutions have been slow to adapt to unfolding transformations. To realize the potential of modern smart digital technologies, policies must also be smarter. It is necessary to respond more sensitively to changes to fully realize potential gains in productivity and economic growth and address the problem of growing inequality.

As technologies change markets and alter the dynamics of growth and distribution, policy must ensure that markets remain inclusive and support broad access to new opportunities for various firms and workers. The digital economy needs to be expanded to disseminate new technologies and opportunities among small firms and broader segments of the workforce.

Building policies and institutions in line with the digital economy requires new thinking and adaptation. Areas needing attention include competition policy and regulatory regimes, the innovation ecosystem, digital infrastructure, workforce development, social protection systems, and tax policy.

Competition policy must be updated to meet the demands of the digital age. Antitrust laws and their enforcement need to be strengthened. Additionally, new frameworks for international cooperation in areas such as cross-border data flow regulation and cross-border digital business taxation are required.

The innovation ecosystem needs to be improved. Outdated patent systems must be updated to reflect the new innovative dynamics of the digital economy, achieving a better balance of existing interests and broader promotion and dissemination of technologies. Public research and development programs should be intensified to foster technological progress serving broader economic and social goals rather than the interests of narrow investor groups. Policymakers should address biases in tax systems that favor capital over labor, creating incentives for "excessive automation" that destroys jobs without increasing productivity.

The foundation of digital infrastructure must be strengthened to expand access to new opportunities. This requires increased public investment and mechanisms to encourage more private investment to improve access to digital technologies for underserved groups and regions. Strengthening digital infrastructure and literacy will be

crucial for developing economies as technological changes drive shifts away from low-skilled, low-wage production growth models.

Investment in education and training programs must be increased and reoriented to focus on skills that complement new technologies. This will require innovation in the content, delivery, and financing of these programs, including new models of public-private partnerships. Given the rapidly changing demand for professional skills and the growing need for upskilling, reskilling, and lifelong learning, the availability and quality of continuous education must be significantly expanded. Technological solutions, such as online learning tools, must be leveraged. Persistent inequalities in access to education and (re)training must be addressed. While the gap in basic skills between income groups has narrowed, the gap in higher-level skills, which will foster success in the digital economy, is widening.

Labor market policies and social protection systems must align with the changing economy and nature of work. Policy needs to shift to a more forward-looking focus on improving workers' ability to transition to new and better jobs rather than attempting to protect existing jobs that are becoming obsolete due to technology. Unemployment insurance schemes should better support workers in adapting to changes, retraining, and transitioning to new jobs. Employee benefits systems, covering benefits such as pensions and healthcare traditionally based on formal long-term employer-employee relationships, will need to adapt to a labor market with more frequent job changes and more diverse working conditions (including the growing gig economy). The way social contracts provide opportunities, risk distribution, and security needs to be rethought in the digital age.

Ensuring broader participation of firms in the innovation economy, expanding the dissemination of new technologies, and creating additional opportunities for the workforce can secure stronger and more inclusive economic growth in the global economy. Reforms in these areas can reduce inequality and economic insecurity more effectively than mere fiscal redistribution.

The strategic vision of network development for the global economy by the United Nations Development Programme (UNDP) is to "help create a world where digital technologies are a driving force for people and the planet". [35]

The programmatic goals for the network development of the global economy aim to provide digital support for UNDP programs through the integration of digital technologies into all initiatives. This objective involves experimenting with new approaches and tools, scaling proven solutions, clearly identifying risks and challenges associated with digital technologies, and forecasting to prepare for potential future scenarios.

UNDP will fully integrate digital technologies into the programs of each thematic area in a way that guides the organization's practical work, allows for innovation to thrive, and ensures overall consistency in the digitalization of programs. The implementation of digital technologies in UNDP programs will be supported by the approach of "digital by default," where digital outcomes become a standard aspect of program design and implementation.

Additionally, UNDP plans to expand the capabilities of digital ecosystems. This means supporting countries in their digital transformation at the societal level and creating a network of structures and systems that ensure the protection of human rights and adherence to the principle of "leaving no one behind" in this digital environment. UNDP encourages countries not only to utilize the obvious opportunities presented by digital technologies but also to continuously monitor the risks and take measures to mitigate them.

By advocating for an approach that addresses the needs of all members of society, UNDP can support partners in implementing a comprehensive and inclusive approach to planning and developing digital public policies. Engaging this broader range of stakeholders in digital innovation aligns with an inclusive model that can provide vulnerable populations with access to digital services, help mitigate risks associated with digital platforms, and establish accountability.

CONCLUSIONS

The rise of internet technologies and digital platforms is driving a fundamental network transformation of the global economic system. The network economy is based on collaboration, information sharing, and the ability to flexibly form connections between economic actors across borders.

Key characteristics include decentralized execution, horizontal structures with minimal hierarchies, and the importance of trust and competence over rigid ranks. Digital tools like e-commerce, blockchain, IoT and data analytics enable and connect these economic networks globally.

Leveraging network effects and optimizing value chains has become critical for enhancing efficiency and competitiveness. Understanding the principles and implications of the network economy paradigm is vital for individuals, businesses and nations going forward.

The global transformation of the world economy is a complex process driven by technological advancements, trade liberalization, and the rise of transnational corporations. This transformation has led to increasing interdependence and integration of national economies into a unified global system.

While providing opportunities for economic growth, access to new markets and technologies, the global transformation has also exacerbated inequalities, environmental degradation, and social disruptions that need to be carefully managed. Key challenges include the growing inequality between and within countries, threats to cultural identities, instability of the global financial system, and the depletion of natural resources.

Adapting to this new reality requires a balanced approach that promotes sustainable and inclusive economic development. Investments in education, science, and innovation are crucial for enhancing competitiveness and human capital. Social protection systems and fair distribution policies can reduce inequalities.

The widespread adoption of information and communication technologies (ICT) is enabling enterprises to rapidly adapt, optimize processes, and leverage innovations

like cloud computing, big data and AI. Networking is facilitating new collaborative models such as strategic alliances, joint ventures and digital platforms for sharing information and resources more efficiently.

The rise of e-commerce and growth of global digital marketplaces is expanding markets and reducing barriers to international trade. Emerging technologies like blockchain are enhancing security, enabling smart contracts and reducing transaction costs. Additionally, networking is giving rise to new flexible employment models such as remote work and freelancing.

Networking is reshaping domains like marketing, logistics, education and workforce training to keep pace with evolving demands.

The characterization of the scale of networkization of the global economy has shown that this process does not occur simultaneously in all countries, leading to a gap in the level of digitalization of national economies. This results in digital inequality and increases the dependency of some countries on developed nations. Policies, legislation, traditions, culture, economic development, education, technological base, and other factors play significant roles in the process of the network transformation of the global economy. The digital transformation of the global economic architecture leads to the emergence of new contours of the digital economy, characterized by exponential data growth. Thus, the digital market essentially serves as a modern mechanism that ensures a rapid transition from national markets, limited by state borders, to a single global market. This situation requires an examination of the economic aspects of networkization in the context of the sustainable development of the global economy.

An analysis of Ukraine's involvement in the network transformation of the global economy has led to the conclusion that the state of Ukraine's economic system can be characterized as weak due to a low economic indicator of only 21.4 out of 100, while the two main resilience factors (risk quality and supply chain) scored 69.7 and 48.3, respectively. The low economic indicator results from low productivity, political risk, high energy intensity of the economy, and a high level of urbanization. In 2023, these characteristics are unsatisfactory due to the ongoing crisis and military actions against Ukraine. However, the analysis revealed high motivation in the macro environment and

a readiness of the population for digital transformation, which positively influences Ukraine's economic growth even under unsatisfactory economic and digital infrastructure conditions.

Problems and prospects of further networkization of the global economy have been identified. Among the promising directions for the development of the digital economy, analysts highlight 5G security, virtual reality gaming and software, digital education, digitalization of healthcare, e-commerce logistics, alternative energy, FinTech, and more. Digital transformation of the economy is the main strategic direction of the country's development, and the implementation of technologies contributes to productivity growth and competitiveness. Digital solutions are used to improve efficiency in all sectors of the economy, governance, and the public sector. However, there are challenges and risks associated with digital transformation, such as cybersecurity, changes in organizational culture, and the need for continuous technological updates and innovations. The process of implementing digital assets and solutions will gain momentum in the next decade, so the development of promising industries will contribute to the country's competitiveness and sustainable development.

Based on the conducted research, ways to further networkize the global economy were substantiated. Competition policy must be updated to meet the demands of the digital age. Antitrust laws and their enforcement need to be strengthened. Additionally, new frameworks for international cooperation in areas such as cross-border data flow regulation and cross-border digital business taxation are necessary. Ensuring broader participation of firms in the innovation economy, expanding the dissemination of new technologies, and creating additional opportunities for the workforce can provide both stronger and more inclusive economic growth for the global economy. Reforms in these areas can reduce inequality and economic insecurity more effectively than mere fiscal redistribution.

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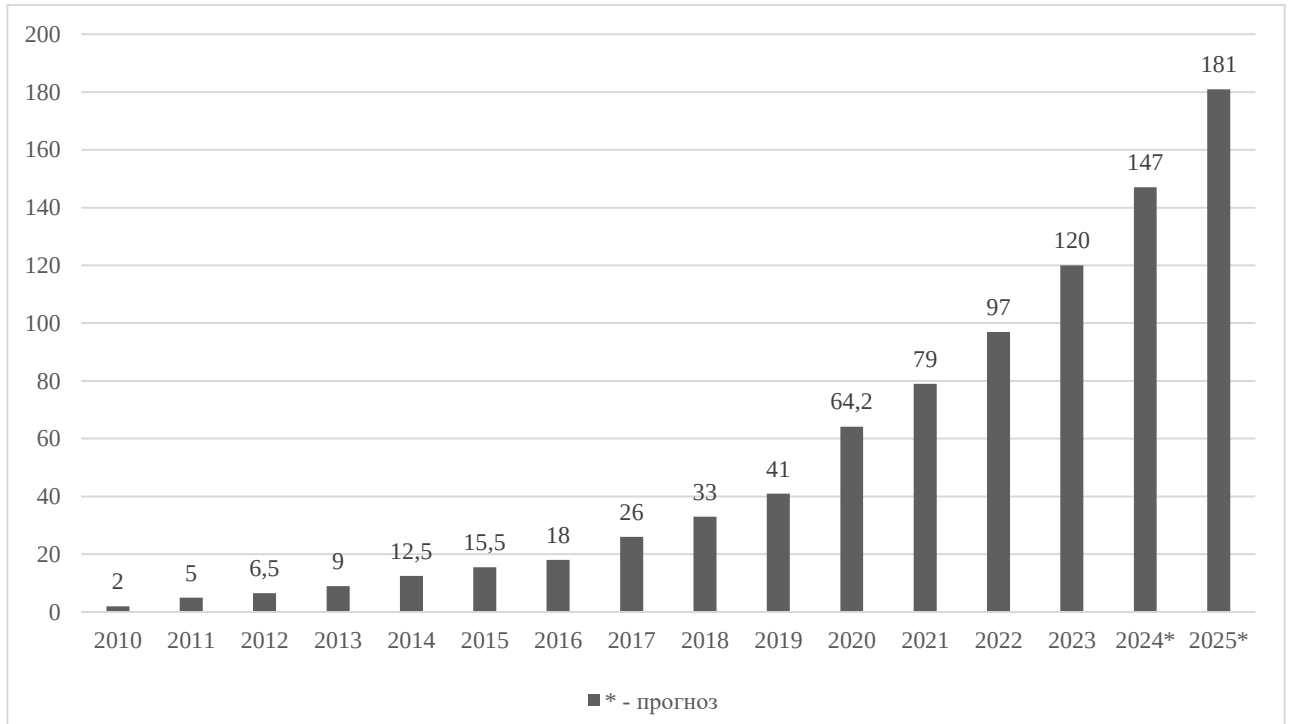
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APPENDICES

Appendix A

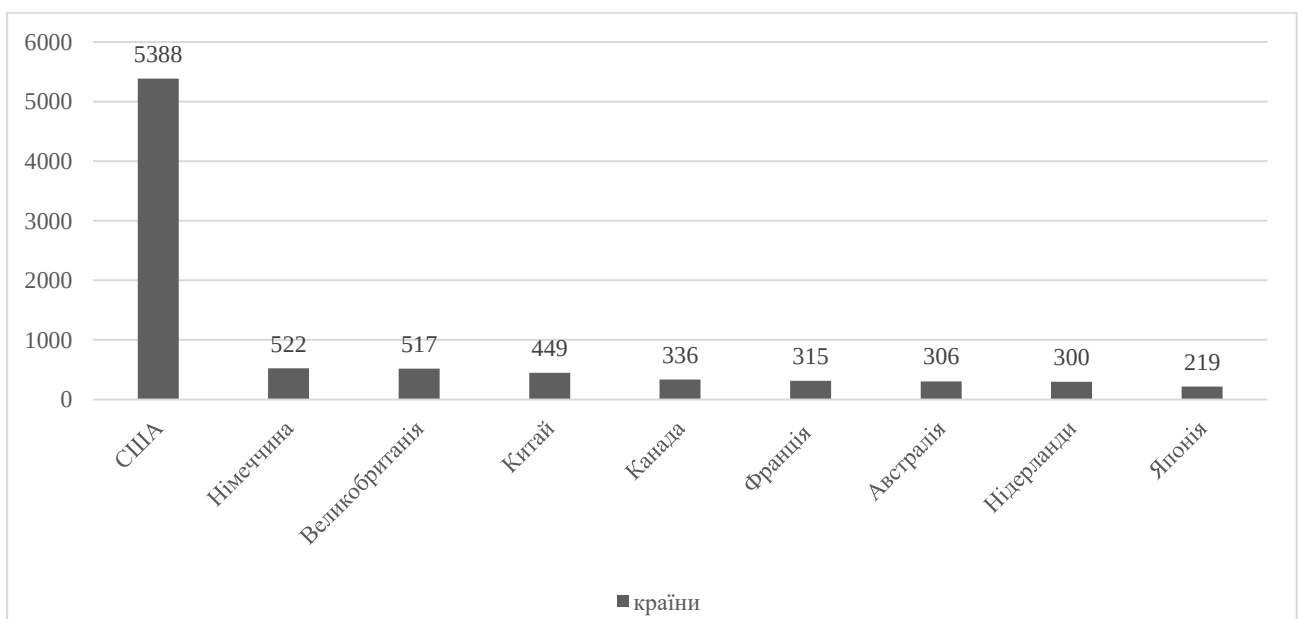
Figure A.1 – Total global data volume, ZB



Source: compiled by author, based on [29]

Appendix B

Figure B.1 - Number of data centers



Source: compiled by author, based on [29]

Ім'я користувача:
Міжнародної економіки Москалюк Наталія

ID перевірки:
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Назва документа: КБР_Бабійчук З.С_Network transformation of the global economy

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13.8% Схожість

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13.3% Джерела з Інтернету

604

Сторінка 56

3.44% Джерела з Бібліотеки

187

Сторінка 65

0% Цитат

Вилучення цитат вимкнене

Вилучення списку бібліографічних посилань вимкнене

0% Вилучень

Немає вилучених джерел