

DIGITAL ECONOMY: CONTEMPORARY TRENDS, DEVELOPMENT DYNAMICS, CHALLENGES

Ishankhodjaev Murodkhodja Akbarovich
Chief Specialist, TBS Bank
Ishankhodjayeva Muharram Hakimjon kizi
Master's degree holder

Annotation: This study explores the contemporary trends, development dynamics, and key challenges of the digital economy in the context of rapid technological transformation. The research analyzes the role of digital technologies such as artificial intelligence, cloud computing, big data, and blockchain in reshaping economic systems, business models, and public services. Particular attention is given to the drivers of digital transformation, including innovation ecosystems, digital infrastructure, and human capital development. The paper also examines the impact of digitalization on productivity, competitiveness, and inclusive growth at both national and global levels. Furthermore, it identifies major challenges such as digital inequality, cybersecurity risks, regulatory gaps, and the need for institutional adaptation. Based on a systematic and analytical approach, the study proposes strategic directions for enhancing the effectiveness of digital economy development, with an emphasis on sustainable growth and policy integration.

Keywords: Digital economy, digital transformation, innovation, artificial intelligence, big data, cloud computing, blockchain, economic development, digital infrastructure, cybersecurity, digital inequality, sustainable development, policy regulation.

From the concept of the "New Economy" to the "Digital Economy." The concept of the "New Economy" emerged in the 1980s and 1990s as a response to new developments in the global economy brought about by technological advances. Significant changes occurred in consumption patterns, production methods, the structure of competition, and economic policy. The concept of the "New Economy" shaped an approach to the economy as a new social and economic order, where information is the primary resource.

The development of digital technologies such as cloud services, mobile services and artificial intelligence have significantly enhanced the digitalization of the economy.

According to the report of the United Nations Conference on Trade and Development (UNCTAD), the digital economy is considered in three dimensions: 1) the basic one, represented by the ICT sector; 2) in a narrow sense, represented by the digital economy and the economy of digital platforms; 3) in a broad sense, represented by the “digitalized” economy (Fig. 2) [5].

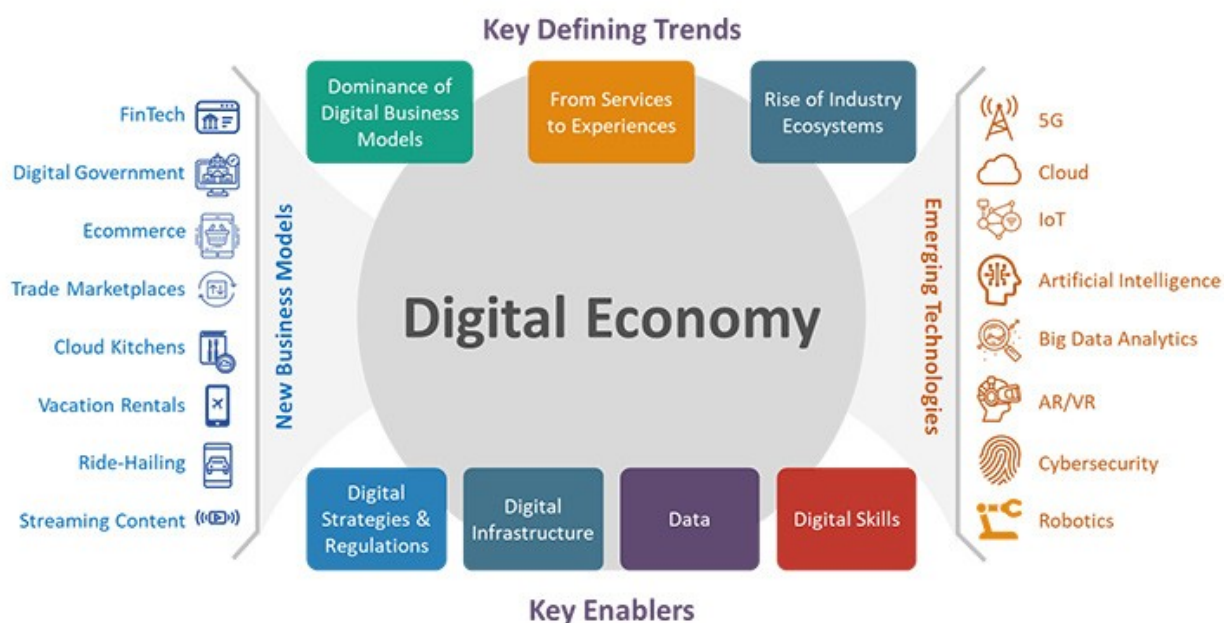


Fig. 2. The concept of “digital economy” [9]

The Organisation for Economic Co-operation and Development (OECD) defines the digital economy as a digital infrastructure consisting of technological equipment and organizational mechanisms, including computers and software, telecommunications equipment and services, the Internet of Things (IoT), computer networks, as well as data centers, semiconductor manufacturing, fiber optic cable installation, switches, repeaters, digital consulting services, and equipment repair services [6]. Among the sectors of the modern economy where digital technologies are being most actively implemented are: energy, the service sector, telecommunications, healthcare, education, banking and financial services, and others (Table 1).

Main part. Determining the dynamics and underlying trends of digitalization in the global economy requires analyzing quantitative indicators characterizing its development both at the macro level and across key sectors and current trends, as well as a number of key components: e-commerce, digital platforms, FinTech.

Indicators of the modern digital economy. According to UNCTAD, the size of the global digital economy in 2023 was 4.5% of GDP (for the digital platform economy) and 15.5% of GDP (for the economy of sectors subject to digitalization; see Figure 2). The US digital economy, meanwhile, accounts for 6.9% of GDP (for the digital platform economy) and 21.6% of GDP (for the economy of sectors subject to digitalization). The size of the digital economy in the PRC is 6.0% of GDP (for the digital platform economy) and 30.0% of GDP (for the economy of sectors subject to digitalization). By share of GDP, this sector is the largest in Taiwan Province of China, Ireland, and Malaysia [5, 7].

Table 1. Main sectors of digitalization and directions of change [10]

Economic sector	Ways to use information and information technology to create new products and services
Energy sector	Using data such as weather forecasts, energy providers can offer their customers new services to help them control their energy consumption through appropriate software and sensors/controllers/meters.
Telecommunications sector	Competing mobile service providers may offer a variety of mobile commerce services to large companies looking to improve their understanding of loyalty program marketing effectiveness.
Healthcare	Use of information about human health, provision of relevant (paid) services, online consultations, reminders about medical procedures, monitoring and early diagnosis, prevention of the development of serious diseases
Internet	Cloud storage (where all files can be stored in the cloud, accessible anytime and anywhere – from any mobile or desktop device, browser, or a variety of popular social networks). Available to both individuals and organizations (both paid and free).
Tourism	Posting information about tourism services on specialized websites, choosing vacation destinations based on individual preferences, and using blockchain technology to mitigate the negative impact of competing organizations on hotel, restaurant, and other ratings.
Financial Services Sector (FinTech)	Collecting information about customer transactions for subsequent sale to interested companies to form a complete electronic picture of potential consumers of goods or services
Crowdfunding	An independent, alternative to the systemic tool for accumulating financial resources in the interests of both individuals and companies

Gambling	Formation of a new sector of online casinos, as well as provision of digital tools for monitoring and regulating this activity by territorial regulatory authorities
Automotive services	Collecting data on auto repair shops and driving habits using telematics makes this information available to insurers and consumers and can help lower insurance rates. The creation of "smart cars" (automatic monitoring of vehicle inspection times, maps and routes via satellite, etc.)
Logistics and delivery	Real-time vehicle tracking, providing requested qualitative and quantitative indicators. Informing consumers about the progress of delivered goods throughout the entire supply chain.
Industry 4.0	Minimizing human involvement in the production process, creating ecosystems in which machines, robots, and machine tools communicate with each other within technological processes to minimize costs and increase productivity
Light industry	Creation of "smart clothing" (warms or cools based on weather conditions, contains information about the manufacturer and seller), "smart shoes" (with built-in GPS)
Construction	The construction of "smart roads" warns drivers of dangerous situations, monitors traffic conditions and responds to emerging problems, and can charge electric vehicles while driving. The construction of "smart homes"—including security and fire alarms, appliances, lighting, and heating—is based not only on the weather but also on a number of other factors, such as wind speed, weather forecasts, and time of day.
Education	Access to paid and free online educational courses and resources allows you to obtain an education in the short term in accordance with an individual educational program, and increases the accessibility of self-education

When assessing the digital economy in terms of the total value created through digital goods, services and the digitalisation of traditional industries, it should be noted that in the European Union, ICT companies are growing annually by 14%, telecommunications companies by 3%, while other transnational corporations are growing by only 0.2% on average [8].

Global employment in the ICT sector increased from 34 million in 2020 to 39 million in 2024, with the largest share of employment in the computer services sector (38%). The ICT sector's share of total employment increased over the same period from 1.8% to 2% [5].

In 2024, digitally delivered services exports amounted to \$2.9 trillion, or 50% of global services exports.

As of 2024, the five most valuable brands are digital technology companies: Apple, Google, Microsoft, Facebook, and Amazon. The most valuable startups in the global economy are presented in Table 2.

Table 2: The most valuable technology startups from 2014 to 2018[1]

Company	Company valuation (USD billion)	Date of assessment	Description
Ant Financial	150	May 2024	Formerly known as Alipay, Ant Financial is a subsidiary of China's Alibaba Group and the world's most valuable fintech company.
Uber	68	June 2022	A network transportation company providing peer-to-peer services: taxi, food delivery
Didi Chuxing	50	April 2023	A major Chinese company specializing in transportation services, artificial intelligence, and innovative developments.
Xiaomi	46	December 2020	A Chinese electronics company that produces smartphones, mobile apps, laptops, and more.
Airbnb	31	March 2023	An online platform and hotel service for short-term stays in cottages, apartments, family or hotel rooms.
Palantir		January 2024	Cloud services company
Alibaba Cloud	30	October 2021	An American software company specializing in Big Data analysis
WeWork	20	July 2023	An American company providing workspace, communities focused on creating new technologies, and services for entrepreneurs, freelancers, startups, small businesses, and large enterprises.

Thus, it is worth noting the rapid growth of the digital share of the global economy, both overall and at the level of leading countries, driven by the more intensive growth of ICT companies and their significant capitalization.

The rapid development of digital technologies opens a window of opportunity for our country to systemically integrate into the global digital economy, taking into account the national interests of the Republic of Belarus. Our country's significant human resource potential and developed digital infrastructure, supported by government support, create a solid foundation for effectively addressing this challenge.

References

- 1 Keyun Ruan. Digital Asset Valuation and Cyber Risk Management. Principles of Cybernomics, 2022, pp. 29–48.
- 2 Urquhart Lachlan, McAuley Derek. Avoiding the internet of insecure industrial things. Computer law & security review, 2020, no 34, pp. 450–466.
- 3 International Monetary Fund (IMF), Measuring the Digital Economy, IMF, Washington, 2022. Available at:
<https://www.imf.org/media/Files/Publications/PP/2018/022818MeasuringDigitalEconomy.ashx> (accessed 12.01.2020).
- 4 A new paradox of the digital economy – Structural sources of the limitation of GDP statistics: own development on the base of Ed. C. Watanabe, Y. Tou, P. Neittaanmäki, Technology in Society, 2023, p. 2.
- 5 UNCTAD. Digital Economy Report. Value Creation and Capture: Implications for Developing Countries. United Nations Publications, 2024. 173 p.
- 6 OECD. Measuring ICT Usage And Electronic Commerce In Enterprises: Proposal For A Model Questionnaire. Paris, OECD Publ., 2020, pp. 1–16.