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V. Karp,  
PhD in Economics, Associate Professor,  
Associate Professor of the Department of International Business, Educational  
and Scientific Institute of International Relations, Taras Shevchenko National University of Kyiv  
ORCID ID: <https://orcid.org/0000-0002-2231-8517>

N. Reznikova,  
Doctor of Economic Sciences, Professor,  
Professor of the Department of World Economy and International Economic Relations,  
Educational and Scientific Institute of International Relations,  
Taras Shevchenko National University of Kyiv  
ORCID ID: <https://orcid.org/0000-0003-2570-869X>

L. Shvorak,  
PhD in Economics, Associate Professor,  
Associate Professor of the Department of World Economy and International Economic  
Relations, Educational and Scientific Institute of International Relations,  
Taras Shevchenko National University of Kyiv  
ORCID ID: <https://orcid.org/0000-0003-1728-601X>

D. Podolchuk,  
PhD in International Economic Relations, Assistant Lecturer of the Department of World  
Economy and International Economic Relations, Educational and Scientific Institute  
of International Relations, Taras Shevchenko National University of Kyiv  
ORCID ID: <https://orcid.org/0009-0007-5239-4987>

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## INDUSTRIES OF THE FUTURE AS A FACTOR IN THE TRANSFORMATION OF INTERNATIONAL BUSINESS AND GLOBAL VALUE CHAINS

В. С. Карп,  
к. е. н., доцент, доцент кафедри міжнародного бізнесу,  
Навчально-науковий інститут міжнародних відносин, Київський національний університет імені Тараса Шевченка  
Н. В. Резнікова,  
д. е. н., професор, професор кафедри світового господарства і міжнародних економічних відносин,  
НН інститут міжнародних відносин, Київський національний університет імені Тараса Шевченка  
Л. О. Шворак,  
к.е.н., доцент, доцент кафедри світового господарства і міжнародних економічних відносин,  
Навчально-науковий інститут міжнародних відносин, Київський національний університет імені Тараса Шевченка  
Д. В. Подольчук,  
доктор філософії зі спеціальності "Міжнародні економічні відносини", асистент кафедри світового господарства  
і міжнародних економічних відносин, Навчально-науковий інститут міжнародних відносин,  
Київський національний університет імені Тараса Шевченка

### ГАЛУЗИ МАЙБУТНЬОГО ЯК ФАКТОР ТРАНСФОРМАЦІЇ МІЖНАРОДНОГО БІЗНЕСУ І ГЛОБАЛЬНИХ ЛАНЦЮГІВ ВАРТОСТІ

The purpose of the article is to provide a theoretical justification of future industries as a key factor in the transformation of international business and global value chains under the conditions of technological restructuring of the global economy, with particular emphasis on the role of Asia as a space for the testing and scaling of new business models. The study demonstrates that future industries are reshaping the global economy by shifting the sources of competitive advantage from traditional production factors toward data, intellectual capital, and technological infrastructure. The development of artificial intelligence, semiconductors, robotics, biopharmaceuticals, electrification, and digital infrastructure is shown to transform not only sectoral dynamics but also the fundamental logic of economic organization.

It is argued that international business is evolving from linear models toward platform-based and ecosystem-driven structures that integrate production, analytics, and services. In this context, firms increasingly act as coordinators of economic activity,

controlling access to data, technologies, and markets. The ability to integrate technologies and manage information flows becomes a central determinant of competitiveness. The paper highlights the transformation of global value chains into complex, multi-layered systems characterized by the growing importance of intangible assets. Value creation increasingly shifts toward research and development, software, and data management, reinforcing structural asymmetries in the global economy and concentrating control in technologically advanced actors.

Sectoral analysis reveals that artificial intelligence enables algorithmic coordination and data-driven business models, while the semiconductor industry forms the technological backbone of the digital economy and becomes a focal point of geoeconomic competition. Robotics contributes to production reconfiguration and regionalization, biopharmaceuticals foster network-based innovation systems, electrification creates cross-sectoral value chains, and digital infrastructure defines the conditions for global economic integration.

Special attention is given to Asia as a leading region in the rapid experimentation and scaling of new business models. The combination of large domestic markets, advanced digitalization, and proactive industrial policies supports the emergence of innovation ecosystems that significantly influence global value chain transformation. The study concludes that future industries act as a systemic driver of changes in international business and global value chains, shaping a new architecture of the global economy in which data, digital platforms, and technological infrastructure play a decisive role.

Метою статті є теоретичне обґрунтування ролі галузей майбутнього як чинника трансформації міжнародного бізнесу та глобальних ланцюгів вартості в умовах технологічної перебудови світової економіки з урахуванням зростаючої ролі Азії як простору апробації нових бізнес-моделей. Обґрунтовано, що галузі майбутнього формують нову конфігурацію світового господарства, у межах якої відбувається зміщення джерел конкурентних переваг від традиційних факторів виробництва до інтелектуальних ресурсів, даних та інфраструктури їх обробки. Показано, що розвиток штучного інтелекту, напівпровідникової індустрії, робототехніки, біофармацевтики, електрифікації та цифрової інфраструктури зумовлює не лише появу нових ринків, але й зміну логіки організації економічної діяльності.

Доведено, що трансформація міжнародного бізнесу відбувається у напрямі переходу від лінійних до платформних та екосистемних бізнес-моделей, що забезпечують інтеграцію виробничих, аналітичних і сервісних функцій. У таких умовах компанії виконують роль координаторів економічної взаємодії, встановлюючи правила доступу до ринків, технологій і даних. Визначено, що ключовим джерелом конкурентоспроможності стає здатність до інтеграції технологій, управління інформаційними потоками та контролю над інфраструктурними ресурсами. У роботі показано, що глобальні ланцюги вартості зазнають якісної трансформації, набуваючи рис інтегрованих багаторівневих систем. Центр створення вартості переміщується у сфери досліджень, розробок, програмного забезпечення та управління даними, що супроводжується зростанням ролі нематеріальних активів. Обґрунтовано, що така трансформація поглиблює структурні асиметрії у світовій економіці, оскільки контроль над ключовими технологічними вузлами концентрується у обмеженого кола компаній і країн.

Розкрито галузеву специфіку трансформаційних процесів. У сфері штучного інтелекту формуються моделі, засновані на обробці великих масивів даних та алгоритмічній координації. Напівпровідникова індустрія визначає технологічну основу цифрової економіки і виступає об'єктом геоекономічного суперництва. Робототехніка змінює просторову логіку виробництва, сприяючи регіоналізації та автоматизації. Біофармацевтика формує мережеві моделі інноваційної діяльності, засновані на взаємодії дослідницьких структур. Електрифікація економіки створює міжгалузеві ланцюги вартості та нові ресурсні залежності. Цифрова інфраструктура визначає умови інтеграції учасників у глобальну економіку.

Особливу увагу приділено ролі Азії як регіону, у якому відбувається прискорена апробація та масштабування нових бізнес-моделей. Показано, що поєднання великих ринків, цифровізації та індустріальної політики забезпечує формування інноваційних екосистем, які впливають на трансформацію глобальних ланцюгів вартості. Обґрунтовано, що азійські економіки виступають не лише виробничими центрами, але й генераторами організаційних і технологічних інновацій. Зроблено висновок, що галузі майбутнього виступають системним чинником реорганізації міжнародного бізнесу і глобальних ланцюгів вартості, формуючи нову архітектуру світового господарства, у межах якої визначальними стають інтелектуальні ресурси, цифрові платформи та інфраструктура обробки даних.

*Key words: international markets, international business, international commerce, e-commerce, fragmentation, conjuncture, industries of the future, services, regulation, competition, marketing, business model, digital economy, digital technologies, infrastructure, value chains, ecosystem, AI, FDI, semiconductors, robotics, biomedical industry, biopharmaceuticals, BigPharma, robotics, R&D, Asia.*

*Ключові слова: міжнародні ринки, міжнародний бізнес, міжнародна комерція, електронна комерція, фрагментація, кон'юнктура, галузі майбутнього, послуги, регулювання, конкуренція, маркетинг, бізнес-модель, цифрова економіка, цифрові технології, інфраструктура, ланцюги вартості, екосистема, ШІ, ПІІ, напівпровідники, робототехніка, біомедична індустрія, біофармацевтика, біофарма, робототехніка, R&D, Азія.*

## PROBLEM STATEMENT

The industries of the future are a systemic factor in the reorganization of the world economy, within which not only the structures of production and trade are changing, but also the very principles of economic interaction. They determine the

formation of a new architecture of international business, in which technological ecosystems, digital platforms, and data processing infrastructure play a key role. The transformation of international business and global value chains under the influence of the industries of the future reflects the

transition to an economy in which the ability to integrate technologies, manage information flows, and control infrastructure resources is of crucial importance, which forms new conditions for development and a new configuration of the global economic system. Asia is becoming a key centre of transformation of the world economy [1]. The Asian region already accounts for about 60% of global economic growth, and its share of world exports has increased from 33% in 2010 to 55% in 2023. This means Asian companies are increasingly acting as laboratories for new business models. They are faster at integrating digital technologies, responding to changes in demand, and experimenting with new market-organizing formats. Therefore, many of the innovative business models spreading around the world today first appeared in Asia. This means that it is advisable to analyse the industries of the future considering their testing in the Asian economic space, where new technologies and business models are not only being formed, but also undergoing a stage of accelerated scaling. New business models arise in the context of the transition to the so-called industries of the future. Foreign direct investment flows are increasingly concentrated in sectors that will determine the structure of economic growth in the coming decades. These include artificial intelligence, semiconductors, robotics, biopharmaceuticals, electrification, and digital infrastructure.

The redistribution of investment flows towards these sectors reflects a deeper transformation of the global economy, in which the sources of competitive advantage are shifting from traditional factors of production to technological capabilities of data processing, the development of algorithmic systems, and the creation of intelligent infrastructure. In such conditions, the formation of new business models is not only the result of entrepreneurial innovation but also an institutional response by corporations to a change in the technological paradigm of the global economy.

### ANALYSIS OF RESEARCH AND PUBLICATIONS

Deglobalization and geopolitical fragmentation [3], as well as the impact of armed conflicts on integration and polarization trends [4], form the structural context in which companies are forced to rethink production strategies and seek new growth points.

The reorientation towards the industries of the future is based on the concept of smart specialization with strategies to avoid the traps of targeted and design choices [5]. The scale and unevenness of digital transformations, particularly

their risks for open economies, constitute a separate subject of research [6], while the digital economy as a tool of globalization and a driver of changes in the structure of international trade is considered in close connection [7]. Technological specialization as the basis for competitive advantage in the high-tech sector [8] and the transition of the global conjuncture from the "great softening" to the "global chaos" [9] shape the environment in which the industries of the future acquire strategic importance.

Industrial ecosystems and clusters as a factor of sustainable development in the context of global value chains [10], platformization of the digital economy and the transformative potential of digitized ecosystems for international business [11], the transition from industrial to digital ecosystems in international trade [12], as well as innovation as a driver of digital transformation in the context of technoglobalism [13] — all these dimensions are directly related to changes in the architecture of global value chains that are taking place under the influence of the industries of the future. This transformation involves moving from fragmented production chains to integrated value-creation systems, in which the ability to coordinate complex relationships among participants through digital tools plays a key role. As a result, competitiveness is determined not only by the efficiency of individual stages but also by the ability to integrate them into a single technologically coherent structure. The impact of digital transformations on the global business environment is conceptualized in [14], and the practical aspects of reengineering business operations in the digital economy are discussed in [15]. Despite the wide range of available research, a systematic analysis of the industries of the future as an integrated group of technological sectors and their impact on the transformation of international business remains underdeveloped.

### FORMULATION OF THE ARTICLE'S OBJECTIVES

The purpose of the article is to theoretically substantiate the role of industries of the future as a factor in transforming international business and global value chains in the context of technological restructuring of the world economy.

### THE PAPER'S MAIN BODY

The industries of the future are shaping a new configuration of international markets, in which the ability of companies to integrate various technological solutions into complex digital ecosystems is decisive. For example, the develop-

ment of artificial intelligence is associated not only with the creation of new algorithms, but also with the formation of data processing infrastructure, cloud computing systems, and machine learning platforms. As a result, companies working in AI are increasingly building business models based on a combination of software, analytical services, and platform solutions that enable the scaling of algorithmic products globally. At the same time, artificial intelligence is changing the very mechanism of value creation, as it transfers part of the management and analytical functions to the plane of algorithmic solutions. This means that competition is developing not only in sales markets but also for access to data, model quality, and computing power, creating a global concentration of intellectual infrastructure. Significantly, much of this is happening in Asian economies, where the combination of vast amounts of user data and rapid commercialization of digital services creates a favourable environment for scaling AI solutions. This allows companies to more quickly integrate algorithmic models into everyday business practices and shape new standards for digital services.

Similar processes are taking place in the semiconductor sector, which is becoming a critically important element of modern global value chains. The semiconductor industry determines the technological capabilities of the development of artificial intelligence, digital platforms, cloud services, and production automation systems. That is why, in this area, there is an increase in investment activity by transnational corporations and state institutions seeking to secure control over key technological resources. This is because the semiconductor industry creates critical "bottlenecks" in global value chains, and control over which is becoming an instrument of geoeconomic influence. As a result, individual segments of this market are gaining strategic importance for ensuring the technological autonomy of states. In this context, Asian countries occupy key positions in global semiconductor production and design, thereby strengthening their role in shaping the technological basis of the world economy. It is the concentration of production and scientific capacities in the region that provides it with the status of one of the decision-making centres in this area. The business models of companies in this sector are increasingly focused on integrating research centres, production facilities, and digital process management platforms.

Robotics and automation of production are also changing the structure of international business. The use of robotic systems and algorithms for controlling production processes enables a significant increase in productivity and a reduction in reliance on

traditional labour. As a result, a new production business model is emerging, in which access to intelligent production management systems becomes a key resource. This contributes to the formation of new global value chains, in which a significant portion of production operations is coordinated through digital platforms. This changes the spatial logic of production organization, reducing the importance of cheap labour as a key factor in location. As a result, the processes of regionalization and the return of production closer to consumer markets are intensifying, which transforms the geography of global value chains. Asia is one of the key regions for the introduction of robotic systems, since high production density and the need to increase efficiency stimulate automation. This contributes to the formation of new production models that combine scale and technological intensity.

The development of global value chains in robotics reflects a profound transformation of the principles of production organization, in which the relationships among location factors, the structure of value creation, and the logic of international cooperation are changing. Automation of production processes significantly reduces the importance of cheap labour as a key factor in offshoring, leading to a shift in the geography of production and a trend towards regionalization. In such conditions, companies are increasingly focusing on locating production facilities in geographically closer regions, where better quality control, faster coordination, and lower transaction costs are ensured. At the same time, value chains in robotics are acquiring a pronounced asymmetric structure, as the bulk of added value is generated in high-tech segments such as research, software development, engineering design, and system integration. This leads to the concentration of key functions in technologically advanced countries, while other segments, in particular the production of individual components or assembly, may remain geographically dispersed. This configuration enhances functional specialization and forms a new hierarchy of countries' participation in global production networks.

A significant feature is the growing role of the initial stages of production, where critical technological solutions are developed that determine the final product's competitiveness. It is in these segments that intellectual capital is concentrated, transforming value chains from material-oriented to knowledge-intensive. As a result, the emphasis shifts from physical production to the management of technologies, data, and innovation processes. Robotization, at the same time, generates contradictory effects for the global organization of production. On the one hand, it stimulates the return of production

processes to countries of origin or their relocation to nearby regions, since the reduction in labour costs offsets the advantages of remote production locations. On the other hand, increasing productivity and technological complexity of products can increase the demand for specialized components and intermediate goods, which supports the inter-country fragmentation of production. As a result, global value chains are not literally shrinking but are taking on a new configuration that combines regionalization and functional complexity.

Geopolitical factors are gaining significant influence, changing the logic of partner selection and production location. The focus on cooperation with countries that are institutionally and politically close promotes the formation of regional production blocks and reduces dependence on distant suppliers. This is combined with the desire to increase supply chain resilience amid growing global uncertainty. The level of infrastructure and institutional environment is also becoming an important factor, since the effective functioning of robotic value chains requires access to digital technologies, interoperability standards, computing resources, and data processing systems. This limits the participation of countries with insufficient technological potential and increases the concentration of production activity in the most developed economies.

The biopharmaceutical sector is demonstrating a distinct trajectory of business model transformation, driven by the combination of biotechnology research, digital analytics, and global clinical research networks. In this field, medical data processing platforms, artificial intelligence systems for analyzing genetic information, and global research networks that unite scientific institutions, pharmaceutical corporations, and medical organizations are increasingly important. As a result, the business models of biopharmaceutical companies are becoming platform-based, combining scientific research, digital analytical services and commercial pharmaceutical products. The high level of scientific uncertainty in this sector determines the spread of network forms of organizing innovation activities, within which value creation occurs through the interaction of numerous participants. This forms a model of distributed innovation, which differs from traditional vertical integration.

The biopharmaceutical sector demonstrates one of the most indicative trajectories of business model transformation within the industries of the future, as it combines knowledge-intensiveness, high level of uncertainty and critical dependence on intellectual resources. Unlike traditional industries, in which value creation was concentrated mainly at the production stages, in biopharmaceuticals key

positions are formed at the early stages of research and development, where the generation of scientific knowledge and the formation of innovative solutions take place. The centre of value creation is shifting to research, algorithms, and data processing. In this context, digitalization plays a system-forming role, as medical data processing platforms and artificial intelligence systems accelerate scientific research, increase diagnostic accuracy, and optimize drug development processes. Thus, biopharmaceuticals are integrated into broader digital ecosystems that combine scientific institutions, pharmaceutical corporations, technology companies, and medical organizations. This confirms the thesis of the transformation of business models toward platformization and ecosystemization, which runs through the entire logic of the study.

A characteristic feature of this industry is a high level of scientific and commercial uncertainty, which shapes a specific risk structure and stimulates the development of network forms of organizing innovative activity. As a result, a model of distributed innovation emerges, in which value is created through the interaction of numerous entities, each performing a separate function in the overall process. This distinguishes biopharmaceuticals from traditional vertically integrated models and, at the same time, reflects the general trend towards fragmentation and simultaneous integration of global value chains.

Analysis of the development of biopharmaceutical strategies in a global dimension shows that the biopharmaceutical sector is transforming into a key element of geoeconomic competition, within which innovation policy, industrial strategy and national security instruments are combined. The biomedical industry is characterized by high science intensity, significant investment costs and an increased level of risk, which necessitates the active role of the state in shaping the conditions for transforming scientific results into commercially successful products. The current stage of biopharmaceutical development is characterized by intensified global competition for technological leadership, encompassing not only research and development but also control over production capacities, intellectual property, supply chains, and access to markets. States consider biopharmaceuticals as a strategic sector along with artificial intelligence and quantum technologies, which is integrated into broader economic security policies. This is reflected in the growth of public investment, the formation of comprehensive industrial programs, and the focus on creating national innovation ecosystems. The key trend is the transition from isolated support policies to an ecosystem approach, within which scientific

research, financing, regulation, production, and commercialization are combined. The intensity of R&D spending is a fundamental factor in the creation of competitive advantage. At the same time, not only is the level of financing of decisive importance, but also its structural organization. Countries with high R&D intensity, in particular South Korea, the USA, and Japan, demonstrate the ability to integrate public and private investments into long-term technological programs closely aligned with industrial policy. The global centre of gravity of biopharmaceutical innovation is gradually shifting towards Asia-Pacific. The region's share of the global portfolio of innovative drugs is growing, and China accounts for about a quarter of the global pipeline of new drugs, indicating the emergence of new centres of technological power that combine large markets, access to data, rapid clinical trial timelines, and government support.

An important feature of the current stage of biopharmaceutical development is its deep integration into global research networks. In this process, Asian countries are increasingly active, serving not only as production sites but also as participants in clinical research, scientific development, and biotechnological innovation. In modern conditions, the spatial redistribution of research and development is of particular importance, and Asia is emerging as one of the key centres of global R&D activity. This is due to a combination of growing investments in scientific infrastructure, large domestic markets, and active government support for innovative sectors. As a result, the region is gradually moving from a production base to a generator of technological solutions, integrating into high-value segments of global value chains. This means that research and development are increasingly localized in growth markets, changing the geography of innovation and strengthening Asia's role in shaping new technological standards. The combination of large markets, access to large medical data sets, and increasing investments in scientific infrastructure creates conditions for strengthening the region's position in this industry's global value chains. As a result, the biopharmaceutical sector is becoming a model of how future industries are transforming international business through a combination of science, technology, and digital tools. It demonstrates that competitiveness in a modern economy is determined not only by production capabilities but also by the ability to integrate scientific knowledge, process data, and coordinate complex networks of interaction. It is these characteristics that make biopharmaceuticals a key element of the new architecture of global value chains.

Global value chains in the biopharmaceutical sector are multi-level and include basic research, preclinical and clinical trials, production, and distribution. At the same time, the largest share of added value is concentrated in scientific research and development, underscoring the importance of intellectual capital and scientific infrastructure. This configuration confirms the shift of the centre of value creation towards intangible assets. An important direction for the development of future industries is the electrification of the economy and the transition to new energy systems. The spread of electric vehicles, the development of energy storage systems, and the growth of smart energy networks are creating new markets where automotive companies, energy companies, and technology platforms interact. In these conditions, business models are increasingly focused on creating integrated energy ecosystems that combine energy production, digital network management systems, and end-user services. Electrification is also changing the structure of resource demand, increasing the importance of critical materials and creating new dependencies in the global economy. This leads to the emergence of new value chains in which suppliers of raw materials and operators of energy infrastructure play a key role. The Asian region plays a leading role in developing these processes, as it is here that significant production capacities for batteries, electric vehicles, and components for energy systems are concentrated. This allows the countries of the region to actively influence the formation of new value chains in electrification.

Digital infrastructure, including cloud computing, data centres, and telecommunications networks, is the foundation for the development of all the above sectors. It is this infrastructure that ensures the functioning of the global digital economy, creating an environment for data exchange, the operation of algorithmic systems, and the functioning of platform ecosystems. In such conditions, digital infrastructure becomes a strategic resource, the control over which determines the possibility of participating in global economic processes. It not only ensures the functioning of markets but also forms the rules of access to data and technologies. As a result, companies that control key elements of digital infrastructure gain strategic competitive advantages in international markets. Asia, in this context, is one of the most dynamic spaces for the development of digital infrastructure, where the rapid deployment of telecommunications networks and digital services lays the foundation for large-scale platform ecosystems. This strengthens the region's role as a testing ground for new formats of the digital economy.

The transition to the industries of the future is also accompanied by a change in international competition. If in the traditional industrial economy the basis of competition was the scale of production and access to natural resources, then in the digital economy, technological competencies, access to data, and the ability to create scalable digital platforms are of decisive importance. In such conditions, business models become a key tool for corporations' strategic adaptation to the new structure of the global economy. The formation of future industries significantly alters the structure of global value chains. If in the traditional industrial economy value chains were built around production operations and physical flows of goods, then in the modern technological economy, intellectual resources, data, research competencies, and digital infrastructure are becoming increasingly important. As a result, the centre of value creation is shifting from production stages to research, development, software, and data management. This is accompanied by an increasing role for intangible assets, which serve as the basis for the creation of added value on a global scale. At the same time, countries and companies specializing in the material stages of production face the risk of becoming entrenched in segments with a lower share of value, which deepens structural asymmetries in the global economy.

These processes are particularly noticeable in the artificial intelligence sector. The value chain in this industry is formed around several key elements: access to large data sets, the development of algorithmic models, computing infrastructure and platforms for distributing digital services. Companies that own data processing infrastructure and cloud platforms gain strategic advantages in global competition, since they control key nodes of value creation. This creates a new type of dependence, where access to data processing infrastructure and platforms becomes a prerequisite for participation in global value chains. The result is the platformization of economic interaction, in which a significant part of operations is coordinated through a limited number of digital ecosystems. In such a system, the production of software products or algorithms becomes only one element of a more complex ecosystem that includes data platforms, information processing centres, and artificial intelligence services. In the semiconductor industry, the transformation of value chains is associated with the deepening of technological specialization and geographical concentration of key production stages. The modern value chain in this industry includes fundamental research, chip design, wafer manufacturing, product testing, and chip integration into various technological systems. Each of these stages

requires an extremely high level of technological investment and specialized knowledge. That is why individual countries and corporations control critical segments of this chain, making the semiconductor industry a central element of modern geoeconomic competition. The fragmentation of this value chain simultaneously makes it vulnerable to external shocks, underscoring the importance of diversification and localization strategies. As a result, a tendency to duplicate critical production capacities across different regions of the world emerges.

In the field of robotics, global value chains are formed around the integration of mechanical systems, electronics, software, and control algorithms. Unlike traditional mechanical engineering, in robotics a significant part of the value is created at the stages of programming, sensor system development, and autonomous control algorithms. This means that the centre of competitive advantage is gradually shifting from the production of hardware components to the development of intelligent control systems for robotic complexes. As a result, companies specializing in software and control algorithms increasingly occupy key positions in this industry's global value chains. This means that added value is concentrated in those segments that provide intelligent control of production processes, while hardware components are gradually losing their dominant role in the revenue structure. In the biopharmaceutical sector, value chains are becoming even more complex and knowledge-intensive. They include basic biomedical research, development of new drugs, clinical trials, production of pharmaceutical products and global distribution systems. A significant part of the value in this industry is formed at the early stages of scientific research and development, which requires close interaction between universities, research centres and pharmaceutical corporations. In modern conditions, these processes are increasingly supported by digital platforms for processing medical data and artificial intelligence systems, which allow significantly accelerating the search for new therapeutic solutions. As a result, value chains in this industry are becoming not only global, but also networked in their structure, which involves the simultaneous participation of many entities at different stages of creating an innovative product. The electrification of the economy and the development of new energy systems also demonstrate a significant transformation of value chains. The production of electric vehicles, battery systems, and intelligent energy networks requires integrating the automotive, chemical, digital technology, and energy industries. In such conditions, value chains become cross-sectoral, uniting companies from different sectors of the economy into

complex technological ecosystems. This leads to the formation of cross-sectoral value chains, in which the boundaries between sectors blur, and value creation occurs at the intersection of different technological directions.

An important feature of the transformation of value chains in the industries of the future is also the growing role of digital infrastructure. Cloud computing, data centres, and global telecommunications networks are becoming the foundation for many modern technological sectors. It is these infrastructure elements that enable the processing of large amounts of information, coordination of international production networks, and integration of various participants within global technological ecosystems. Global value chains are transforming toward greater complexity, integration, and dependence on digital infrastructure. This forms a new logic of economic interaction, within which control over information flows and technological platforms becomes crucial.

### **CONCLUSIONS**

The industries of the future reflect not just the emergence of new high-tech sectors, but a deep structural restructuring of the mechanisms of value creation in the global economy. Their development is accompanied by a systemic shift in the sources of competitive advantages from material factors of production to intellectual resources, data, and infrastructure capabilities for their processing and use. In this context, international business is transforming from a system of cross-border movement of goods and capital into one of managing complex flows of information, technology, and knowledge integrated within digitally coordinated economic structures.

A key feature of this transformation is a change in the logic of business model formation. In the industries of the future, they acquire a platform—and ecosystem-like character, ensuring the simultaneous integration of production, analytical, and service functions. This allows companies to play the role not only of producers but also of coordinators of economic activity, thereby establishing the rules of interaction between market participants. As a result, control over key nodes of value creation is concentrated in those entities that own the technological infrastructure, data, and algorithmic management tools.

The transformation of global value chains is complex and is manifested in their intellectualization, platformization and cross-sectoral integration. The centre of value creation is consistently shifting to research, development, software,

and data management, while the material stages of production are gradually losing their dominant importance. This leads to the growth of the role of intangible assets and to a new distribution of added value, in which companies that can integrate intelligent components into scalable business systems benefit. At the same time, this transformation is accompanied by increasing asymmetries in the global economy. Countries and companies that control critical technologies, data processing infrastructure, and platform solutions can determine the terms of access to markets and resources. In contrast, participants in lower segments of value chains risk becoming entrenched in positions with limited potential for value accumulation. This means that global value chains increasingly reproduce not only economic, but also technological and institutional inequalities.

Digital infrastructure is gaining particular importance, becoming a fundamental element of the modern economy. Control over cloud computing, data centres, and telecommunications networks provides the opportunity not only to integrate economic processes but also to establish standards and rules of interaction. In this sense, infrastructure is not a neutral environment but an active instrument of economic influence that shapes the configuration of global markets. Intersectoral integration, characteristic of the industries of the future, leads to the formation of new value chains that combine elements from different sectors of the economy. This is especially evident in the interactions among energy, transport, information technology, and production, which create complex technological systems with high interdependence. In such conditions, the efficiency of economic activity is determined not by individual industries, but by the ability to integrate them into a single functional structure.

The changing nature of international competition is another systemic consequence of the development of future industries. Competition is increasingly focused on control over technological resources, infrastructure, and standards that determine the rules of the functioning of the global economy. This means that the struggle for markets is transformed into a struggle for the architecture of these markets, and economic dominance is associated with the ability to shape and impose technological and institutional parameters of development. Asia plays a special role in these processes as a space for accelerated testing of new business models and technological solutions. It is in this region that the combination of large-scale domestic markets, high rates of digitalization, and active industrial policy creates conditions for rapid

testing and scaling of innovations. Asian companies are not only adapting existing models but also developing new approaches to business organization by integrating platforms, financial technologies, logistics systems, and digital services into single ecosystems. As a result, Asia is not only a centre of production but also a source of institutional and technological innovations that are transforming global value chains. It is here that models are being developed that combine high-speed scaling with the flexibility to adapt to local conditions, which are subsequently spread to other regions. This means that the further evolution of international business will be largely determined by companies' ability to integrate into the economic forms being formed and tested in the Asian economic space.

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