



INTERNATIONAL DIGITAL INTEGRATION PROCESSES IN THE ERA OF THE INDUSTRIAL REVOLUTION

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Received: 11 th June 2022	The quick shift to a digital economy has been made possible by a slew of breakthroughs. The introduction of optical fiber and contemporary wireless communication technologies brought a new level of telecommunications, while the growth of local networks led to the development of the Internet. International commercial ties have begun to be created on the foundation of integrated systems for digitalization. This article examines international economic interactions throughout the Industrial Revolution.
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For the past several decades, the civilization has been swiftly advancing toward a new sort of economy, with digital technology serving as the primary tool for its construction. In today's world, information technologies and digital transformation are the primary drivers of technological change and the prerequisite for ensuring economic viability at the level of individual enterprises as well as countries and supranational organizations, resulting in a revamp of all economic and production processes, a drastic improvement in performance, higher efficiency, and reduce premiums for goods and services. The global economy's digitization has reached a tipping point. The concepts of the "Third Industrial Revolution," "Industry 4.0," and other improvements at the state and corporate levels were quickly incorporated into government initiatives and commercial systems.

The world economy is a collection of national economies that interact mutually via the formation of international economic ties based on the principles of international division of labor, resulting in a synergistic impact for the whole world economy. International economic relations (IEA) encompass international commerce in products and services, global technical interchange, capital and labor migration, the operation of the international monetary and financial system, and regional integration organizations [1].

The first three industrial revolutions were followed by a fast expansion of international economic links. The climax of the IEO is often seen as economic globalization, which has evolved swiftly, relying on late XXI and early XXI century information and digital technology [2]. However, the global financial crisis of 2008 created the conditions for the emergence of some processes of "encapsulation of economies": focusing on priority solutions to national problems, achieving self-sufficiency and development sustainability, and reorienting the political agenda to national priorities. The international economic strategy of D. Trump, Brexit, and the ongoing trade war between the United States and China in 2018-2019 are all noteworthy examples of encapsulation tendencies. In this regard, let us suppose that the next stage of digitization will undoubtedly boost information exchange activities but will have little influence on the development of international commerce in commodities. Furthermore, digitization has the potential to lessen international capital movement.

Businesses, research groups, universities, and government agencies all work together to achieve shared innovation goals through innovation networks. Many governments have recognized the value of these networks in terms of increasing innovation potential, international competitiveness, and wealth generation [3]. The network economy is made up of three components: network technology, communications and interactions, and network organizations. The utilization of Internet technology has become an unmistakable truth in the network economy. The network economy has gained broad opportunities as a result of the formation of the information and economic space, allowing individual companies to divide the innovation process both within and outside the state, while ensuring the unity of the science of production and business through modern telecommunications networks. The information and communication technology (ICT) sector is at the heart of the information industry and continues to be the primary driver of innovation, accounting for the largest share of enterprise R&D spending among OECD member countries and more than one-third of all patent applications worldwide. That is why it is critical to examine the evolution of information and communication technologies as the foundation for the construction and operation of the digital economy.

The digital economy is a technical framework enabling a faster shift to an innovative development model, representing the move from the third to the fourth industrial revolution, known as Industry 4.0. According to most

observers, the digital economy is an industrial revolution that has no precedent in human history and has the potential to drastically alter humanity's socioeconomic environment. Klaus Schwab emphasized the critical need of a coordinated knowledge of the influence of technology on the change of society's economic, social, cultural, and humanitarian environments in his book *The Fourth Industrial Revolution* [4]. The digital economy is a technological foundation that enables a speedier shift to an innovative development model, symbolizing the transition from the third to fourth industrial revolution, also known as Industry 4.0. According to most observers, the digital economy is an industrial revolution without parallel in human history that has the potential to drastically alter humanity's socioeconomic environment. In his book *The Fourth Industrial Revolution*, Klaus Schwab emphasized the critical need for integrated understanding about the influence of technology on transforming society's economic, social, cultural, and humanitarian environments.

The creation of COVID-Tech, i.e., digital technologies intended at combatting the pandemic, including the application of artificial intelligence technologies, should be a distinct direction of the world economy's digital transformation. COVID-Tech development involves illness diagnosis and screening, therapeutic research, the construction of data platforms and knowledge bases, apps and services that monitor morbidity spread and compliance with restriction measures.

However, current disparities in the achieved degree of digitalization and the pace with which the latest digital technologies are introduced and developed pose a substantial obstacle and, in some circumstances, a threat to the future transformation of particular nations' economy down the digital road. Despite this, it is clear that many of the technologies that were pushed to emerge during the epidemic will continue to exist in the future.

The process of forming and operating network forms of connection between diverse economic and territorial entities has a unique role in the development of the digital economy. Any economy is, at its foundation, a network that is founded on the parts of the network and the interactions between its players. In the case of creative networks, however, the decisive force in their creation is the cooperative interest, which contrasts with the market players' personal interests [5]. In national economic systems, the search for optimal forms of interaction between the state, academic, and business sectors is becoming increasingly important [6]. This is because the outcomes of intellectual effort and the inventions based on them emerge in both the commercial and public sectors. Indeed, innovation networks connect the state, civil society, and commercial entities; networks, in other words, constitute the management structure of the region's innovation domain.

Network types of interaction between territorial units hold a specific position, as supported by the Innovative Regions in Europe Network (IRE), which represents the affiliation of regions executing initiatives within the scope of innovative development strategies. However, the nomenclature of territorial units for statistics remains related to the EU members defined administrative-territorial division. The World Alliance of International Financial Centers (WAIFC), in contrast to the existing system, supports international collaboration, sustainable investment, and the prevention of the impact of protectionism during a global emergency in the domains of health and business.

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