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CONCEPTUAL APPROACHES TO RESEARCHING THE IMPACT OF DIGITAL TRANSFORMATION PROCESSES ON THE GLOBAL BUSINESS ENVIRONMENT

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КОНЦЕПТУАЛЬНІ ПІДХОДИ ДО ДОСЛІДЖЕННЯ ВПЛИВУ ПРОЦЕСІВ ЦИФРОВОЇ ТРАНСФОРМАЦІЇ НА ГЛОБАЛЬНЕ БІЗНЕС-СЕРЕДОВИЩЕ

The purpose of the article is to conceptually analyze the processes of digital transformation, which will allow us to characterize the spillover effects of digitalization at the macro and meso levels of economic interaction. This involves identifying and categorizing the spillover effects of the digital economy that have an impact on various aspects of social development. The rapid development of digital technologies and their integration into all spheres of social life are identified as triggers for the formation of a new economic paradigm — the "digital economy", the key characteristics of which are: the central role of data as a strategic resource; the blurring of boundaries between physical and digital processes; network effects and economies of scale; the growing role of platform business models; fundamental changes in the organization of production, consumption and exchange. It is noted that traditional strategic models of competitiveness, the resource-oriented approach or the concept of dynamic advantages are based on assumptions that are losing relevance in modern digital conditions. Key features (reprogrammability, data homogenization, self-referentiality) that distinguish digital technologies from previous technologies have been identified.

It is argued that traditional approaches to value creation, based on a linear value chain, are becoming irrelevant due to the blurring of product and industry boundaries. An approach is considered according to which the digital economy is characterized as a multi-level system that includes: the core of the digital economy; digital platforms, platform economy and sharing economy; digitized and digitized economy in a broad sense, covering all sectors where digital technologies are used to transform economic processes (e-commerce, Industry 4.0, precision agriculture, algorithmic economy). Spillover effects of digital transformation are defined as the processes of transmission and dissemination of the impact of technological, organizational and business innovations associated with the digitalization of economic entities to other economic entities, occurring through interconnections in supply chains, industry networks or other forms of inter-organizational interaction. Types of spillover effects are identified (technological, social, economic, global and cross-border, institutional), their subtypes are presented and their thorough characteristics are provided. Spillover effects of digital transformation are characterized as the process of transferring the impact of digital transformation from small and medium-sized enterprises located at different levels of the supply chain to innovative activities.

The "customer contagion effect" is considered. It is noted that the intensity of spillover effects depends on the degree of digital collaboration between enterprises and their ability to effectively integrate and use digital technologies in their activities. The article notes that digital transformation changes the very nature of products, value creation processes, and the competitive environment. It is argued that companies need to rethink the sources of competitive advantage and adopt a network-centric approach. Successful strategies in the digital economy should: (1) consider inter-organizational networks as the main source of competitive advantage, actively form digital ecosystems; (2) promote co-creation of value through digital platforms; (3) balance different network mechanisms to achieve optimal results.

Мета статті полягає у концептуальному аналізі процесів цифрової трансформації, що дозволить охарактеризувати спіловер-ефекти диджиталізації на макро— і мезорівнях економічної взаємодії. Це передбачає виявлення та категоризацію спілловер-ефектів цифрової економіки, що мають вплив на різні аспекти суспільного розвитку. Стрімкий розвиток цифрових технологій та їх інтеграція в усі сфери суспільного життя визначено тригерами формування нової економічної парадигми — "цифрової економіки", ключовими характеристиками якої виступають: центральна роль даних як стратегічного ресурсу; розмивання кордонів між фізичними та цифровими процесами; мережеві ефекти та економія на масштабі; зростаюча роль платформних бізнес-моделей; фундаментальні зміни в організації виробництва, споживання та обміну. Відзначено, що традиційні стратегічні моделі конкурентоспроможності, ресурсно-орієнтований підхід чи концепція динамічних переваг базуються на припущеннях, які втрачають актуальність у сучасних цифрових умовах. Визначено ключові ознаки (перепрограмованість, гомогенізація даних, самореферентність), за якими цифрові технології відрізняються від попередніх технологій. Стверджується, що традиційні підходи до створення вартості, засновані на лінійному ланцюжку вартості, стають неактуальними у зв'язку із розмиванням меж продукту та галузей. Розглянуто підхід, згідно з яким цифрова економіка характеризується як багаторівнева система, що включає: ядро цифрової економіки; цифрові платформи, платформну економіку та економіку спільного споживання; оцифровану та цифровізовану економіку у широкому розумінні, що охоплює всі сектори, де цифрові технології використовуються для трансформації економічних процесів (е-комерція, Індустрія 4.0, прецизійне сільське господарство, алгоритмічна економіка). Спілловер-ефекти цифрової трансформації визначено як процеси передачі й поширення впливу технологічних, організаційних та бізнес-інновацій, пов'язаних із диджиталізацією суб'єктів господарювання, на інші економічні суб'єкти, що відбуваються через взаємозв'язки в ланцюгах постачання, галузеві мережі чи інші форми міжорганізаційної взаємодії. Виокремлено типи спіловер-ефектів (технологічні, соціальні, економічні, глобальні і транскордонні, інституційні), наведено їхні підвиди і надано їхню грунтовну характеристику. Спілловер-ефекти цифрової трансформації охарактеризовано як процес передачі впливу цифрової трансформації від малих і середніх підприємств, що знаходяться на різних рівнях ланцюга постачання, на інноваційну діяльність. Розглянуто "ефект зараження клієнтів".

Key words: transformation, digital economy, digitalization, technology transfer, e-commerce, automation, global supply chains, global value chains, business model, strategic management, strategy, competition, technology, innovation, welfare, inequality, production, consumption, labor market, spillover effects, inclusion, ecosystem, AI, IT.

Ключові слова: трансформація, цифрова економіка, диджиталізація, технологічний трансфер, е-комерція, автоматизація глобальні ланцюги постачань, глобальні ланцюги вартості, бізнес-модель, стратегічне управління, стратегія, конкуренція, технологія, інновація, добробут, нерівність, виробництво, споживання, ринок праці, спіловер-ефекти, інклюзія, екосистема, ШІ, ІТ.

INTRODUCTION

The rapid development of digital technologies and their integration into all spheres of public life have led to the formation of a new economic paradigm — the "digital economy", the key characteristics of which are: (1) the central role of data as a strategic resource; (2) the blurring of boundaries between physical and digital processes; (3) network effects and economies of scale; (3) the growing role of platform-based business models; (5) fundamental changes in the organization of production, consumption and exchange.

Digital transformation is radically changing the way businesses operate. Traditional strategic models of competitiveness according to M. Porter [26], the resource-based approach or the concept of dynamic advantages are based on assumptions that are no longer relevant in today's digital environment. A striking example of the new reality is the acquisition of Nokia's "HERE" digital mapping business by a consortium of automakers Audi, BMW and Daimler for 2.8 billion euros in 2015. This deal demonstrates how former competitors are joining forces to acquire strategic digital assets and form the platform necessary for the development of autonomous driving.

Digital technologies differ from previous technologies in three main characteristics: reprogrammability (digital devices can perform different functions due to the integration of a processor and memory); data homogenization (a single device can store, transmit, process, and display a variety of content types), self-referentiality (digital innovations depend on digital technologies, creating positive network effects). It is these characteristics that change the nature of products, turning them into objects with a complex four-tier architecture: (1) devices (hardware); (2) networks (data transmission); (3) services (programs for creating and consuming content); (4) content (data). It is noteworthy that these layers can be decoupled, allowing different companies to work on individual components independently of each other, which leads to a blurring of product and industry boundaries. Traditional approaches to value creation, based on a linear value chain, become irrelevant. Instead, the concept of co-creation of value through the generative power of digital technologies emerges.

THE REVIEW OF THE LITERATURE

The study by J. Wei, X. Zhang, T. Tamamine [29] argues that spillover effects of digital transformation are a side

effect of the process of digitalization of the economy, which goes beyond the boundaries of individual enterprises and affects the entire system of business-to-business relations. The authors provide valuable empirical evidence of the existence of the action of such effects in the context of supply chains and argue that understanding the mechanisms of the concept of spillover effects of digital transformation allows for a more comprehensive approach to the formation of digitalization strategies, taking into account not only direct, but also indirect effects arising from the interaction of various economic entities. These conclusions are partially confirmed by the works of S. Brennen and D. Kreiss [11], T. Elkjaer and J. Damgaard [14], A. Hanelt, E. Piccinini, R. W. Gregory, B. Hildebrandt and L.M. Kolbe [16]. Ukrainian author teams led by O. Bulatova [5], N. Reznikova [5; 22; 23; 24; 25], O. Prokopenko [21], A. Shlapak [28], A. Krysovaty [3], O. Desyatniuk [12], D. Rusak [6], O. Ptashchenko [4] noted technoglobalism and innovative rivalry as a trigger for systemic transformations and chaos in world economic relations and investigated the effects of digitalization for business models, production processes and strategic management, for global value and supply chains, for risk management, etc. Digital inequality in the systemic relationship with the problems of economic development and growth was in the research perspective of I. Ali and H. Son [7], R. Anand, M. Mishra and M. Peiris [8], R. Baro [9], Q. Dong [13], F. Ferreira, E. Galasso and M. Negre [15], C. Lakner, M. Negre and E. Prydz [19], A. Narayan, J. Saavedra-Chanduvi and S. Tiwari [20] and experts from the World Bank [30].

THE PURPOSE OF THE ARTICLE

The purpose of the article is to conceptually analyze the processes of digital transformation, which will allow us to characterize the spillover effects of digitalization at the macro and meso levels of economic interaction. This involves identifying and categorizing the spillover effects of the digital economy that have an impact on various aspects of social development.

THE MAIN MATERIAL OF THE ARTICLE

The digital economy is considered as a multi-level system that includes: (1) the core of the digital economy (the information and communication technology sector (hardware and software production, telecommunications, IT services)); (2) the digital economy in the narrow sense (the core of the digital economy plus digital platforms, platform economy and sharing economy); (3) the digitized and digitized economy in the broad sense (covering all sectors where digital technologies are used to transform economic processes (e-commerce, Industry 4.0, precision agriculture, algorithmic economy).

The digital economy, characterized by the widespread introduction of information and communication technologies, algorithmization of processes, development of platform business models and data as a key resource, significantly changes the structure of markets, labor market relations, consumption patterns and even the public administration system.

Spillover effects of digital transformation are the processes of transmission and dissemination of the impact of technological, organizational and business innovations associated with the digitalization of business entities to other economic entities, occurring through interconnections in supply chains, industry networks or other forms of inter-organizational interaction (Table 1). These effects are characterized by improving the efficiency and sustainability of the entire system of business relations through the optimization of information flows, reducing transaction costs and the formation of stable partnerships, which together create a favorable environment for innovative activity at all levels of the supply chain.

J. Wei, X. Zhang, T. Tamamine [29] consider the spillover effects of digital transformation as the process of transferring the impact of digital transformation from small and medium-sized enterprises located at different levels of the supply chain (the highest and lowest levels) to the innovative activities of enterprises located in the middle (midstream). The authors use the term "customer contagion effect" to describe the process when the innovative nature of digital transformation exerts pressure on the entire industrial value chain. Spillover effects in this context arise due to the interdependence of enterprises in supply chains, where the digital transformation of one enterprise affects other enterprises connected to it through business processes, data and information exchange, as well as through interaction at different levels. The spillover effects of digital transformation can manifest themselves at different levels — from operational (increasing the efficiency of production processes) to strategic (transformation of business models, formation of new markets and ecosystems), and their intensity depends on the degree of digital cooperation between enterprises and their ability to effectively integrate and use digital technologies in their activities.

The following key dimensions of the spillover effects of digital transformation can be distinguished:

(1) Technology and innovation transfer. Digital transformation of upstream and downstream enterprises stimulates the innovation activities of mid-tier enterprises through the transfer of technology, knowledge, and innovative practices. When upstream enterprises undergo the transformation of product digitalization, they can develop new digital technologies or integrate existing technologies into products to improve their functionality and performance. These technological innovations can be transferred directly or indirectly to mid-tier enterprises, motivating them to implement new technologies and product innovations [29, p.3].

(2). Impact on business models and organizational management. Digital transformation affects not only technological aspects, but also business models and organizational structures of enterprises. Digitalization of organizational management involves the integration of existing organizational structures and management models with digital technologies to restructure management methods and functions, improve communication, collaboration and decision-making efficiency [29, p.3].

(3). Improving the sustainability of the supply chain. The digital transformation of enterprises at different levels of the "smile curve" [17; 27] improves the sustainability of the supply chain by increasing its efficiency, optimizing the supply-demand balance, and stabilizing the relationship between suppliers and consumers. These mechanisms, in turn, contribute to the innovative activity of medium-level enterprises. The gradual smoothing of the traditional smile curve occurs for several reasons: (1) increasing the added

Table 1. Spillover effects of the digital economy

Type of spillover effect	Sub-type spillover effects	Characteristic
Technological spillovers	**Inter-industry diffusion technologies**	Digital technologies developed in one industry are adapted and implemented in other areas. AI technologies developed to automate industrial processes are used in medicine, education, agriculture, etc.
	Technological convergence	The combination of different digital technologies creates new synergistic effects (the convergence of the Internet of Things, cloud computing, big data analytics, and AI generates innovative solutions for smart cities, precision agriculture, and personalized medicine).
	Transfer of digital competencies	Skills and knowledge related to digital technologies are transferred between different sectors (regions with a high concentration of IT specialists are formed)
	Innovative ecosystems	The formation of innovation ecosystems around digital technologies promotes cross-sectoral innovation. Technology hubs create an environment for knowledge sharing and collaborative innovation that goes beyond the boundaries of individual firms and industries.
Social spillovers	**Transformation of social interactions**	Digital platforms and social media are changing the way we communicate, form social connections, and take collective action. Digital technologies are facilitating the formation of virtual communities, networks of mutual aid, and digital activism.
	Digital socialization	Changing processes of socialization and identity formation in the digital environment. Creating new opportunities and risks for the development of social competencies.
	Democratization of knowledge and culture	Expanding access to information, education, and cultural resources. Digital platforms for open education (Massive Open Online Courses, MOOCs) promote the accessibility of higher education for marginalized groups and regions with limited access to educational resources.
	Social innovation	Using digital technologies to solve social problems and improve public welfare (platforms for collective financing of public projects; mobile applications for supporting mental health).
	Changing consumption patterns	Formation of new consumer practices (sharing economy, ethical consumption).
Economic spillovers	**Transformation of value chains**	Digital technologies are changing the structure and organization of global supply chains, enabling disintermediation, re-intermediation, and the formation of new coordination models.
	Formation of new markets and business models	Digital technologies are enabling the creation of new markets and innovative business models, including the platform-based economy, the gig economy, and subscription-based models.
	Productivity and employment effects	The impact of digital technologies on labor, capital, and total factor productivity, as well as on job creation and transformation.
	Transformation of labor markets	Changing employment structures, skill requirements and work organization. Regions with higher levels of digitalization show greater labor market polarization, with a simultaneous increase in the share of high-paid cognitive occupations and low-paid service jobs, and a decrease in the share of medium-paid routine occupations.
	Spatial reorganization of economic activity	The impact of digital technologies on the geography of economic activity (digital international division of labor); decentralization through remote work and e-commerce; spatial effects of digitalization; concentration of innovation and high-paying jobs in technology hubs
Global and cross-border spillovers	**International diffusion of technologies**	Spread of digital technologies and innovations between countries. Global platforms help accelerate international technology transfer, narrowing the gap between technological leaders and followers.
	Reorganization of global trade	The impact of digital technologies on the structure and volume of international trade. A 10% increase in the digital intensity of the economy is associated with a 2.3% increase in services exports and a reduction in trade barriers for small and medium-sized enterprises.
	Digital tax challenges	The emergence of digital economy taxation challenges due to the geographical mobility of digital assets and activities. Digital economy taxation initiatives aim to address the problem of base erosion and profit shifting (BEPS) caused by the cross-border nature of digital business models.
	Geopolitical effects	The impact of digital technologies on international relations, global governance, and national security.
	Digital divide between countries	Despite progress in closing the basic digital divide (internet access), the gap in digital innovation and economic value from digitalization between developed and developing countries continues to grow.
Institutional spillovers	**Transformation of public administration**	The impact of digital technologies on the organization and functioning of the public sector. Digital transformation of public administration can increase the efficiency of public services, transparency and citizen participation in decision-making
	New approaches to regulation	The emergence of innovative regulatory approaches in response to the challenges of the digital economy: «regulatory sandboxes», experimental regulatory approaches and algorithmic regulation as a response to the rapid pace of technological change.
	Institutionalization of new norms and practices	Shaping new institutional norms on privacy, data, cybersecurity and digital rights. The General Data Protection Regulation (GDPR) has influenced global norms on personal data protection, creating the so-called "Brussels effect" in the global regulation of the digital economy.
	Changing models of corporate governance	The impact of digital technologies on corporate governance practices, including transparency, accountability, and stakeholder engagement. Companies with higher levels of digitalization demonstrate more progressive corporate governance practices, including employee participation in decision-making and social responsibility.
	Development of digital communes	The emergence of new forms of collective governance of digital resources, including open source software, open data, and digital commons. Commons-based peer production practices create alternatives to market and hierarchical models of economic organization.

Source: compiled by Oliynik K.D.

value of production (intelligent production increases the added value at the production stage through higher productivity, quality, and technological level); (2) integration of all links in the value chain (digital technologies provide a closer connection between different stages, blurring the boundaries between them); (3) personalization and customization (the possibility of mass production of individualized products increases the value of the production process); (4) reduction of intermediaries (direct communication between producers and consumers reduces the role of traditional distribution channels).

(4). Effects of collaboration and digital coordination. The importance of digital collaboration between enterprises at different levels of the supply chain is explained by the incentives for technological innovation in mid-level enterprises [29, p.9].

At least three main mechanisms are distinguished through which spillover effects of digital transformation affect the innovative activity of enterprises:

(1) improving supply chain efficiency (digital transformation of top-tier enterprises, using advanced data analysis, automated manufacturing and real-time supply chain monitoring technologies, not only optimizes their own production processes and improves product efficiency and quality, but also makes the supply chain more transparent and predictable);

(2) optimizing supply and demand (digital transformation helps optimize supply and demand through efficient information circulation and processing; the use of big data, cloud computing and artificial intelligence by top-tier enterprises ensures efficient information circulation, which reduces the problems of information asymmetry in traditional supply chains, helping to avoid the "bullwhip effect" [2] and the increase in demand fluctuations in the supply chain transmission process;

(3) stabilizing relationships between suppliers and consumers.

Digitalization promotes both types of innovation, leading to a comprehensive transformation of the entire value chain. The transformation of the smile curve occurs through two key factors: engineering innovation (technological improvements in the production process that increase quality, efficiency, and productivity) and business model innovation (new ways of creating, delivering, and capturing value that transform traditional business models).

CONCLUSIONS

In contrast to traditional approaches, the network-centric approach argues that: (1) the unit of analysis is the structure of the interorganizational network, not the industry or individual firm; (2) the environment consists of multiple interconnected dynamic ecosystems, not stable industries; (3) the logic of strategy is based on effectuation — the active shaping of the environment based on available resources and existing opportunities while recognizing the potential risks of losing tangible and intangible resources; (4) value creation occurs through the co-creation of value by a network of companies, rather than through a linear value chain.

Digital transformation is changing the very nature of products, value creation processes, and the competitive environment. Companies need to rethink the sources of competitive advantage and adopt a network-centric approach. Successful strategies in the digital economy must: (1) consider interorganizational networks as a primary source of competitive advantage, actively shape digital ecosystems; (2) facilitate co-creation of value through digital platforms; (3) balance different network mechanisms to achieve optimal results.

Understanding the spillover effects of digital transformation is important for shaping digitalization policies and strategies at different levels: (1) at the enterprise level (developing digital transformation strategies taking into account potential spillover effects for supply chain partners; creating mechanisms for effective knowledge and technology transfer between partners; developing digital collaboration with enterprises at different levels of the supply chain); (2) at the level of industries and the economy as a whole (forming policies aimed at optimizing the spillover effects of digital transformation; developing digital infrastructure that facilitates effective knowledge and technology transfer; supporting digital collaboration between enterprises, especially those belonging to the same industry).

Література:

1. Булатова О.В., Резнікова Н.В., Іващенко О.А. Цифровий розрив чи цифрова нерівність? Нові виміри глобальних асиметрій соціально-економічного розвитку в умовах техноглобалізму. Вісник Маріупольського державного університету. Серія: Економіка. 2023. № 13 (25). С. 45—57. https://doi.org/10.34079/2226-2822-2023-13-25-45-57

2. Васелевський М. Ефект "бичачого батога" в ланцюзі поставок. Вісник Національного університету "Львівська політехніка". Логістика. 2003. С. 12—21. Available at: https://ena.lpnu.ua:8443/server/api/core/bitstreams/6f43351e-6b01-4e9a-ae7d-0e46e-7b42c51/content

3. Крисоватий А., Десятнюк О., Птащенко О. Digital inclusion: financial and marketing aspects. Журнал стратегічних економічних досліджень. 2023. № 3 (14). С. 93—102. https://doi.org/10.30857/2786-5398.2023.3.10

4. Птащенко О. В. Ризик-орієнтована система фінансового забезпечення в умовах розвитку інформаційних технологій. Бізнес Інформ. 2021. № 11. С. 172—178. DOI: https://doi.org/10.32983/2222-4459-2021-11-172-178

5. Резнікова Н.В., Булатова О.В., Шлапак А.В., Іващенко О.А. Інновації як драйвер цифрової трансформації світової економіки в умовах техноглобалізму. Інвестиції: практика та досвід. 2023. № 12. С. 5—12. https://doi.org/10.32702/2306-6814.2023.12.5

6. Русак Д. М., Резнікова Н. В., Іващенко О. А. Ризик-менеджмент глобальних ланцюгів поставок: вразливість і стійкість у фокусі стратегічного управління в умовах глобальної невизначеності економічної кон'юнктури. Агросвіт. 2022. № 21.

7. Ali A., Son H. Measuring Inclusive Growth. Asian Development Review. 2007. Vol. 24, no. 1. P. 11—31.

8. Anand R., Mishra M., Peiris M. Inclusive Growth: Measurement and Determinants. IMF Working Paper. 2013. No. 13/135.

9. Barro R. Inequality and Growth in a Panel of Countries. Journal of Economic Growth. 2000. Vol. 5, no. 1. P. 5—32.

10. Bijker W. E., Hughes T. P., Pinch T. The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. Cambridge, MA: MIT Press, 1987. 470 p.

11. Brennen S., Kreiss D. Digitalization and digitization. 2014. Available at: http://culturedigitally.org/2014/09/digitalization-and-digitization/

12. Desyatnyuk O., Krysovatyy A., Ptashchenko O., Kyrylenko O., Kurtsev O. Innovative Digital Economy Strategies for Enhancing Financial Security in Logistics Optimisation. Journal of Information Systems Engineering and Management. 2025. Vol. 10 (2s). P. 397—407. DOI: https://doi.org/10.52783/jisem.v10i2s.328.11

13. Dong Q. Common Prosperity: Differences, Standards, and Focus. Economist (Jingjixuejia). 2001. No. 4. P. 13—18.

14. Elkjaer T., Damgaard J. How Digitalization and Globalization have Remapped the Global FDI Network. 2018. Available at: https://www.oecd.org/iaos2018/programme/IAOS-OECD2018_Elkjaer-Damgaard.pdf

15. Ferreira F., Galasso E., Negre M. Shared Prosperity: Concepts, Data, and Some Policy Examples. IZA Discussion Paper. 2018.

16. Hanelt A., Piccinini E., Gregory R. W., Hildebrandt B., Kolbe L. M. Digital Transformation of Primarily Physical Industries-Exploring the Impact of Digital Trends on Business Models of Automobile Manufacturers. 2015. Available at: https://www.researchgate.net/publication/277325717_Digital_-Transformation_of_Primarily_Physical_Industries_-_Exploring_the_Impact_of_Digital_Trends_on_-Business_Models_of_Automobile_Manufacturers

17. Johns J. L. Digital Technological Upgrading in Manufacturing Global Value Chains (GVCs): The Impact of Additive Manufacturing. Global Networks. Advance online publication. 2021. DOI: https://doi.org/10.1111/glob.12349

18. Koch T., Windsperger J. Seeing through the network: Competitive advantage in the digital economy. Journal of Organization Design. 2017. Vol. 6, no. 6. P. 1-30. DOI: https://doi.org/10.1186/s41469-017-0016-z

19. Lakner C., Negre M., Prydz E. Twinning the Goals: How Can Promoting Shared Prosperity Help to Reduce Global Poverty. World Bank Policy Research Working Paper. 2014.

20. Narayan A., Saavedra-Chanduvi J., Tiwari S. Shared Prosperity: Links to Growth, Inequality and Inequality of Opportunity. World Bank Policy Research Working Paper 6649. 2013. World Bank: Washington D.C.

21. Prokopenko O., Kichuk Ya., Ptashchenko O., Yurko I., Cherkashyna M. Logistics Concepts to Optimise Business Processes. Estudios de Economia Aplicada. 2021. Vol. 39 (3). Article 4712. DOI: http://dx.doi.org/10.25115/eea.v39i3.4712

22. Reznikova N., Bulatova O., Chugayev O., Ptashchenko O. Z-inequality in the conditions of the formation of a digital society: Peculiarities of intergenerational differences in reproduction of asymmetries of economic development. Actual problems of international relations. 2023. No. 1 (156). P. 46—58. DOI: https://doi.org/10.17721/apmv.2023.156.1.46-58

23. Reznikova N., Bulatova O., Ptashchenko O., Ivashchenko O., Panchenko V. Z-owning and Z-consumption in the conditions of movement from shareholder to stakeholder capitalism: values as the basis of self-identification. Інвестиції: практика та досвід. 2023. № 5. С. 28—36. DOI: https://doi.org/10.32702/2306-6814.2023.5.28

24. Reznikova N., Panchenko V., Karp V., Grod M., Stakhurska S. The relationship between the green and digital economy in the concept of sustainable development. Economic Affairs. 2024. Vol. 69 (Special Issue). P. 389—399. DOI: https://doi.org/10.46852/0424-2513.1.2024.41

25. Reznikova N., Ptashchenko O., Chugayev O., Ivashchenko O. Y-Reality as a shift from "Great Moderation" to "Global Chaos": Assessment of global macroeconomic and crisis processes through the prism of generational dialogue and development issues. Журнал стратегічних економічних досліджень. 2022. № 6 (11). P. 9—20. DOI: https://doi.org/10.30857/2786-5398.2022.6.6.14

26. Rip A. Introduction of New Technology: Making Use of Recent Insights from Sociology and Economics of Technology. Technology Analysis & Strategic Management. 1995. Vol. 7 (4). P. 417—431.

27. Shen J. H., Tang S., Deng K. Re-evaluating the 'Smile Curve' in relation to outsourcing industrialization. 2016. http://dx.doi.org/10.2139/ssrn.2878762

28. Shlapak A., Yatsenko O., Ivashchenko O., Zarytska N., Osadchuk V. Digital transformation of international trade in the context of global competition: technological innovations and investment priorities. Financial and Credit Activity: Problems of Theory and Practice. 2023. Vol. 6 (53). P. 334—347.

29. Wei J., Zhang X., Tamamine T. Digital transformation in supply chains: Assessing the spillover effects on midstream firm innovation. Journal of Innovation & Knowledge. 2024. Vol. 9. P. 100483. https://doi.org/10.1016/j.jik.2024.100483

30. World Bank. Poverty and Shared Prosperity 2022: Correcting Course. World Bank. 2022. Available at: http://hdl.handle.net/10986/37739

References:

1. Bulatova, O. V., Reznikova, N. V. and Ivashchenko, O. A. (2023), "Digital divide or digital inequality? New dimensions of global asymmetries of socio-economic development under technoglobalism", Visnyk Mariupolskoho derzhavnoho universytetu. Seriia: Ekonomika, vol. 13 (25), pp. 45—57, https://doi.org/10.34079/2226-2822-2023-13-25-45-57

2. Vaselevskyi, M. (2003), "The bullwhip effect in the supply chain", Visnyk Natsionalnoho universytetu "Lvivska politekhnika". Lohistyka, pp. 12-21, available at: https://ena.lpnu.ua:8443/server/api/core/bitstreams/6f43351e-6b01-4e9a-ae7d-0e46e7b42c51/content (Accessed 5 April 2025).

3. Krysovatyi, A., Desiatniuk, O. and Ptashchenko, O. (2023), "Digital inclusion: financial and marketing aspects", Zhurnal stratehichnykh ekonomichnykh doslidzhen, vol. 3 (14), pp. 93—102, https://doi.org/10.30857/2786-5398.2023.3.10

4. Ptashchenko, O. V. (2021), "Risk-oriented system of financial support in the conditions of information technologies development", Biznes Inform, vol. 11, pp. 172—178, https://doi.org/10.32983/2222-4459-2021-11-172-178

5. Reznikova, N. V., Bulatova, O. V., Shlapak, A. V. and Ivashchenko, O. A. (2023), "Innovations as a driver of the digital transformation of the world economy under technoglobalism", Investytsii: praktyka ta dosvid, vol. 12, pp. 5—12, https://doi.org/10.32702/2306-6814.-2023.12.5

6. Rusak, D. M., Reznikova, N. V. and Ivashchenko, O. A. (2022), "Risk management of global supply chains: vulnerability and resilience in the focus of strategic management under conditions of global economic uncertainty", Ahrosvit, vol. 21.

7. Ali, A. and Son, H. (2007), "Measuring Inclusive Growth", Asian Development Review, vol. 24 (1), pp. 11—31.

8. Anand, R., Mishra, M. and Peiris, M. (2013), "Inclusive Growth: Measurement and Determinants", IMF Working Paper, vol. 13/135.

9. Barro, R. (2000), "Inequality and Growth in a Panel of Countries", Journal of Economic Growth, vol. 5 (1), pp. 5—32.

10. Bijker, W. E., Hughes, T. P. and Pinch, T. (1987), The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology, MIT Press, Cambridge, USA

11. Brennen, S. and Kreiss, D. (2014), "Digitalization and digitization", available at: http://culturedigitally.org/2014/09/digitalization-and-digitization/ (Accessed 1 April 2025).

12. Desyatnyuk, O., Krysovatyy, A., Ptashchenko, O., Kyrylenko, O. and Kurtsev, O. (2025), "Innovative Digital Economy Strategies for Enhancing Financial Security in Logistics Optimisation", Journal of Information Systems Engineering and Management, vol. 10 (2s), pp. 397—407, https://doi.org/10.52783/jisem.v10i2s.328.11

13. Dong, Q. (2001), "Common Prosperity: Differences, Standards, and Focus", Economist (Jingjixuejia), vol. 4, pp. 13—18.

14. Elkjaer, T. and Damgaard, J. (2018), "How Digitalization and Globalization have Remapped the Global FDI Network", available at: https://www.oecd.org/iaos2018/programme/IAOS-OECD2018_Elkjaer-Damgaard.pdf (Accessed 1 April 2025).

15. Ferreira, F., Galasso, E. and Negre, M. (2018), "Shared Prosperity: Concepts, Data, and Some Policy Examples", IZA Discussion Paper.

16. Hanelt, A., Piccinini, E., Gregory, R. W., Hildebrandt, B. and Kolbe, L. M. (2015), "Digital Transformation of Primarily Physical Industries: Exploring the Impact of Digital Trends on Business Models of Automobile Manufacturers", available at: https://www.researchgate.net/publication/277325717 (Accessed 1 April 2025).

17. Johns, J. L. (2021), "Digital Technological Upgrading in Manufacturing Global Value Chains (GVCs): The Impact of Additive Manufacturing", Global Networks, advance online publication, https://doi.org/10.1111/glob.12349

18. Koch, T. and Windsperger, J. (2017), "Seeing through the network: Competitive advantage in the digital economy", Journal of Organization Design, vol. 6 (6), pp. 1—30, https://doi.org/10.1186/s41469-017-0016-z

19. Lakner, C., Negre, M. and Prydz, E. (2014), "Twinning the Goals: How Can Promoting Shared Prosperity Help to Reduce Global Poverty", World Bank Policy Research Working Paper.

20. Narayan, A., Saavedra-Chanduvi, J. and Tiwari, S. (2013), "Shared Prosperity: Links to Growth, Inequality and Inequality of Opportunity", World Bank Policy Research Working Paper, vol. 6649, World Bank, Washington D.C.

21. Prokopenko, O., Kichuk, Ya., Ptashchenko, O., Yurko, I. and Cherkashyna, M. (2021), "Logistics Concepts to Optimise Business Processes", Estudios de Economia Aplicada, vol. 39 (3), article 4712, http://dx.doi.org/10.25115/eea.v39i3.4712

22. Reznikova, N., Bulatova, O., Chugayev, O. and Ptashchenko, O. (2023), "Z-inequality in the conditions of the formation of a digital society: Peculiarities of intergenerational differences in reproduction of asymmetries of economic development", Actual Problems of International Relations, vol. 1 (156), pp. 46—58, https://doi.org/10.17721/apmv.2023.156.1.46-58

23. Reznikova, N., Bulatova, O., Ptashchenko, O., Ivashchenko, O. and Panchenko, V. (2023), "Z-owning and Z-consumption in the conditions of movement from shareholder to stakeholder capitalism: values as the basis of self-identification", Investytsii: praktyka ta dosvid, vol. 5, pp. 28—36, https://doi.org/10.32702/2306-6814.2023.5.28

24. Reznikova, N., Panchenko, V., Karp, V., Grod, M. and Stakhurska, S. (2024), "The relationship between the green and digital economy in the concept of sustainable development", Economic Affairs, vol. 69 (Special Issue), pp. 389—399, https://doi.org/10.46852/0424-2513.1.2024.41

25. Reznikova, N., Ptashchenko, O., Chugayev, O. and Ivashchenko, O. (2022), "Y-Reality as a shift from 'Great Moderation' to 'Global Chaos': Assessment of global macroeconomic and crisis processes through the prism of generational dialogue and development issues", Zhurnal stratehichnykh ekonomichnykh doslidzhen, vol. 6(11), pp. 9—20, https://doi.org/10.30857/2786-5398.2022.-6.6.14

26. Rip, A. (1995), "Introduction of New Technology: Making Use of Recent Insights from Sociology and Economics of Technology", Technology Analysis & Strategic Management, vol. 7 (4), pp. 417—431.

27. Shen, J. H., Tang, S. and Deng, K. (2016), "Re-evaluating the 'Smile Curve' in relation to outsourcing industrialization", http://dx.doi.org/10.2139/ssrn.2878762

28. Shlapak, A., Yatsenko, O., Ivashchenko, O., Zarytska, N. and Osadchuk, V. (2023), "Digital transformation of international trade in the context of global competition: technological innovations and investment priorities", Financial and Credit Activity: Problems of Theory and Practice, vol. 6 (53), pp. 334—347.

29. Wei, J., Zhang, X. and Tamamine, T. (2024), "Digital transformation in supply chains: Assessing the spillover effects on midstream firm innovation", Journal of Innovation & Knowledge, vol. 9, article 100483, https://doi.org/10.1016/j.jik.2024.100483

30. World Bank. (2022), "Poverty and Shared Prosperity 2022: Correcting Course", available at: http://hdl.handle.net/10986/37739 (Accessed 5 April 2025).

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