ПОЛІТИЧНИЙ ТА СОЦІАЛЬНО-ЕКОНОМІЧНИЙ РОЗВИТОК КИТАЮ

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CHINA'S DIGITAL TRADE DEVELOPMENT IN THE NEW ERA

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The article examines the dynamic development of China's digital trade, emphasizing its role as a global leader in cross-border e-commerce and digital services. Understanding China's achievements and challenges in this field is crucial for shaping future approaches to international trade. Through a combination of qualitative and quantitative research methods, including a literature review, statistical analysis, and expert survey involving Ukrainian sinologists and economists, the study analyses the evolution of governmental policies concerning trade digitalization while conducting a comprehensive assessment of China's current digital trade development and its developmental potential. The study highlights China's accomplishments in building a robust digital infrastructure, supported by government policies, significant investments in R&D, and innovations in logistics. Using a comprehensive methodological approach, including literature review, statistical analysis, and expert surveys, the research explores China's digital trade development, cross-border e-commerce, and digitally deliverable services. It presents a statistical analysis of cross-border e-commerce and digital services from 2018 to 2023, demonstrating high growth rates in exports and imports. Key trends are identified, including the dominance of telecommunications, computer, and information services in exports and the diversification of imported digital services. The UN Trade Digitalization Index and other global indicators are used to contextualize China's position in international trade. A comprehensive SWOT analysis, complemented by a TOWS matrix, was conducted based on expert survey data to assess the strengths, weaknesses, opportunities, and threats in China's digital trade sector, thereby providing a strategic assessment of its development prospects. China's progress in digital trade underscores the importance of integrating technology, policy, and market development. Despite challenges such as reliance on foreign technologies, uneven access to digital resources, and cybersecurity risks, the country has significant opportunities in artificial intelligence, financial technologies, and global partnerships. Strategic efforts in fostering innovation, addressing inequalities, and expanding international integration can strengthen China's position as a leader in digital trade and contribute to building a resilient, inclusive, and sustainable digital economy.

Key words: China, cross-border e-commerce, digital economy, digitalization of trade, Xi's new era.

РОЗВИТОК ЦИФРОВОЇ ТОРГІВЛІ КИТАЮ В НОВУ ЕПОХУ

О. Дроботюк, В. Осадчук

У статті представлено аналіз розвитку цифрової торгівлі Китаю, акцентовано увагу на його ролі як світового лідера у сфері транскордонної електронної комерції та цифрових послуг. Розуміння досягнень і викликів Китаю у цій сфері є важливим для формування майбутніх підходів до міжнародної торгівлі. На основі поєднання якісних і кількісних методів дослідження, зокрема огляду літератури, статистичного аналізу й експертного опитування українських китаєзнавців та економістів, у дослідженні проаналізовано еволюцію державної політики щодо цифровізації торгівлі та надано комплексну оцінку поточного розвитку цифрової торгівлі в Китаї та потенціалу її розвитку. Висвітлено досягнення Китаю у створенні розвиненої цифрової інфраструктури, що підтримується державними політиками, значними інвестиціями в дослідження й розробки та інноваціями у сфері логістики. Представлено статистичний аналіз транскордонної електронної комерції та цифрових послуг у 2018–2023 роках, який демонструє високі темпи зростання експорту й імпорту. Виокремлено основні тенденції, зокрема домінування телекомунікаційних, комп'ютерних та інформаційних послуг в експорті та диверсифікацію імпорту цифрових послуг. Використано індекс цифровізації торгівлі ООН та інші глобальні показники для контекстуалізації позиції Китаю в міжнародній торгівлі. Комплексний SWOT-аналіз, доповнений матрицею TOWS, був проведений на основі даних експертного опитування для оцінки сильних і слабких сторін, можливостей і загроз у секторі цифрової торгівлі Китаю, що уможливило надання стратегічної оцінки перспектив розвитку. Досягнення Китаю в секторі цифрової торгівлі підкреслюють важливість інтеграції технологій, політики та розвитку ринку. Попри такі виклики, як залежність від іноземних технологій, нерівномірний доступ до цифрових ресурсів і ризики кібербезпеки, країна має значні можливості в галузі штучного інтелекту, фінансових технологій і глобальних партнерств. Стратегічні зусилля в інноваціях, подоланні нерівності та розширенні міжнародної інтеграції можуть зміцнити позиції Китаю як лідера цифрової торгівлі та сприяти створенню стійкої, інклюзивної і сталої цифрової економіки.

Ключові слова: Китай, транскордонна електронна комерція, цифрова економіка, диджиталізація торгівлі, нова епоха Сі.

Introduction. Digitalization in China has become one of the key drivers of the country's economic growth in the 21st century. In 2023, the share of the digital economy in China's GDP was 42.7% or 53.9 trillion yuan, up 1.3 percentage points (pp.) from 2022. In nominal terms, China's digital economy grew by 7.4% year-on-year [中国信息通信研究院2024]. This remarkable digital economic development can be attributed to a confluence of technological, governmental, and socio-economic factors. Modern technologies are actively being integrated into all aspects of trade, transforming traditional business methods and opening new opportunities for enterprises of various sizes. The exponential growth of China's e-commerce sector is underpinned by advanced mobile technology, extensive internet connectivity, and proactive governmental policies. The Chinese government has strategically invested in digital infrastructure and entrepreneurial ecosystems, facilitating widespread internet access and digital payment solutions such as Alipay and WeChat Pay.

Digital trade in China has experienced significant growth in recent years, becoming key factors in the global economy. China has emerged as a global leader in e-commerce, establishing the world's largest online retail market with annual sales

exceeding US$ 3 trillion, which represents over half of global online sales [E-Commerce in China as Part … 2024]. The IPC Cross-Border E-commerce Shopper Survey 2023 revealed China as the most popular online shopping destination, with 37% of respondents indicating recent purchases from Chinese e-commerce platforms; Germany followed in second place with 13%, and the United States secured third position with 10% [International Post Corporation 2023]. In 2024 China dominates the e-commerce global market with a revenue of US$ 1.47 trillion, followed by the United States at US$ 1.22 trillion, while India occupies the third position with nearly US$ 59 billion [Statista Research Department 2024].

The aim of the research is to critically evaluate China's digital trade development in the new era, exploring its evolution, current state, and future potential through a comprehensive analysis of government policy, strategy and data. The objectives include reviewing existing literature on the digitalization of international trade, the digital trade development both in the global context and in China in particular; outlining the stages of evolution in China's government policies related to digital trade; analyzing statistical data on China's cross-border e-commerce and digitally deliverable services imports and exports; conducting SWOT (Strengths, Weaknesses, Opportunities, Threats) and TOWS (Threat-Opportunity-Weakness-Strength) analyses to identify strategies for China's digital trade development. To achieve the aim, the following research methods were used: qualitative (literature review, historical method for policy analysis, expert survey for SWOT analysis), quantitative (descriptive statistical analysis of time series). SWOT and TOWS analyses are informed by an expert survey involving 10 Ukrainian sinologists and economists, who rank and prioritize key indicators to determine their relative importance: the findings provide a nuanced understanding of the strengths, weaknesses, opportunities, and threats faced by China's digital trade. The source base of the study is China's regulatory and strategic documents, reports of international organizations (UN, UNESCAP, OECD, ADB), consulting companies (KPMG, ECDB) and corporations (International Post Corporation), statistical databases of the General Administration of Customs of the PRC and UNCTAD, scientific articles and media publications.

Literature review. Technological advancements and globalization drive the evolution of digital trade. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) conducted research on how digital technologies are shaping the future of global trade and investment, underscoring the critical role of digitalization in today's economy. The study highlights e-commerce as a pivotal component of digital technologies adopted by global exporters and importers, encompassing online transactions for goods and services. This facet represents a significant element of the broader framework known as "digital trade" [UNESCAP 2016].

The United Nations Conference on Trade and Development emphasizes the vast opportunities digital trade presents for developing countries. Digital platforms can enhance market access, reduce transaction costs, and foster inclusive growth. However, challenges such as inadequate infrastructure, digital skills gaps, and regulatory barriers need to be addressed to fully leverage these opportunities [UNCTAD 2022].

González and Jouanjean discuss the OECD's perspective on digital trade, highlighting its potential to enhance global trade by reducing transaction costs and improving market access. Digitalization is changing trade, with online platforms

and new technologies enabling physical trade. The authors identify key digital trade enablers, such as robust digital infrastructure and supportive regulatory frameworks [González and Jouanjean 2017].

González, Sorescu, and Kaynak quantify the impact of digitalization on trade, finding that digital trade positively influences both the volume and quality of international trade. Their research highlighted the critical role of digital infrastructure and policy frameworks in facilitating these outcomes [González, Sorescu, and Kaynak 2023]. According to the UN Trade Digitalization Index, digitalization significantly enhances the efficiency of trade processes, reducing costs and improving transparency and risk management through technologies such as big data analytics, AI, and blockchain. In China, integrating digital technologies in trade procedures has shown substantial improvements in border control and trade administration, driving down costs and bolstering supply chain resilience [United Nations 2023; UN Global Survey on Digital … 2024].

Duval, Prince and Utoktham highlight the transformative potential of digital trade procedures, advocating for the digitization of trade processes to enhance efficiency and reduce costs [Duval, Prince and Utoktham 2023]. González and Ferencz argue that digital trade promotes market openness and competitiveness, especially when complemented by policies supporting digital innovation and reducing trade barriers [González and Ferencz 2018]. Similarly, Ruta and Jakubik stress the importance of keeping digital trade open to foster global economic growth. Barriers to digital trade, such as restrictive data policies, can hinder innovation and economic development [Ruta and Jakubik 2023].

Kovtonyuk and Molchanova explore how digitalization has reshaped the global retail sector in the last decade. The widespread adoption of the Internet has significantly lowered the costs associated with online transactions, benefiting consumers worldwide [Ковтонюк, Молчанова 2021]. The COVID-19 pandemic has profoundly reshaped global trade dynamics, creating a dichotomy between traditional (offline) and digital (online) channels. During the pandemic, digital platforms surged in popularity as alternatives to crowded physical stores, resulting in a marked increase in online retail sales. Information and communication technologies (ICT) are revolutionizing conventional approaches to international trade, transforming economic relationships. The accessibility of ICT and the impact of the COVID-19 pandemic are accelerating the digital transformation of global trade, influencing countries' positions in the international marketplace. Similarly, F. Hu et al. investigate how the pandemic has influenced China's digital trade, noting an increase in digital transactions and a shift towards more resilient and flexible trade practices [F. Hu et al. 2022].

Ezell and Koester (2023) explore the influence of emerging technologies on the global economy and international trade. The authors stress that digital technologies not only improve the effectiveness of international trade but also address pressing global challenges such as enhancing living standards worldwide, promoting sustainable development, conserving resources, and tackling climate change. They underscore that in the context of the Fourth Industrial Revolution, technologies like artificial intelligence (AI), fifth-generation mobile networks (5G), quantum computing, additive manufacturing (3D printing), the Internet of Things (IoT), and blockchain have the potential to significantly enhance productivity, efficiency, and transparency in trade [Ezell and Koester 2023].

The KPMG's report "Investment in technology innovation" discusses technologies identified by respondents in a 2019 survey as having significant potential to revolutionize business and create lasting value. The study also analyzes current corporate investments in these technologies and forecasts for the next three years. Respondents consistently listed the same top ten technologies across all surveys. Leading the list was the Internet of Things, while artificial intelligence consistently ranked no lower than third place. Robotic process automation, robotics (including autonomous vehicles), and blockchain rounded out the top five. These findings illustrate that technology firms are actively investing in technologies they view as transformative. The report provides executives with five key recommendations: prioritize funding based on value rather than individual projects, adopt lean financing to maintain a relevant technology portfolio, support the decentralization of IT operations, swiftly identify unsuccessful initiatives, and ensure transparency and value in technology investments. These strategies aim to enhance management of technology investments and enable companies to capitalize promptly on market opportunities [KPMG 2019].

Shkolenko et al. examine the interplay between international trade and sustainable development. The authors underscore that trade plays a crucial role in advancing sustainable development goals by fostering economic growth through efficient resource utilization, increased production, higher incomes, and enhanced investments. Consequently, this promotes higher employment rates and improves human capabilities. The study emphasizes that achieving sustainable development necessitates a holistic approach that encompasses both microeconomic and macroeconomic considerations. Trade stimulates the economic growth of nations and expands access to a diverse range of goods and services for the population [Школенко, Терещенко, Стояненко 2023].

Helble and Shepherd investigate the role of international trade in advancing the Sustainable Development Goals (SDGs) set to guide global development until 2030. While none of the 17 SDGs specifically focus on trade, its significance to achieve these goals is substantial. The authors aim to demonstrate to the international community, including policymakers in developing nations, how international trade can facilitate the realization of the SDGs. Economists have long observed that trade fosters income growth, which in turn supports sustainable development. Moreover, trade directly influences the prices and accessibility of essential goods and services such as healthcare and education. The study introduces the concept of a "triple win," illustrating that well-designed trade policies can stimulate international trade, promote outcomes conducive to development, and contribute effectively to achieving the SDGs. The authors elucidate these interconnected relationships, showcasing how strategic trade policies can generate mutually beneficial outcomes for trade, development, and sustainable development [Helble and Shepherd 2017].

Luo et al. explore the relationship between digitalization and sustainable development, focusing on China's experience. Their findings suggest that while digital trade can drive economic growth, it must be managed carefully to ensure environmental sustainability and inclusive development [Luo et al. 2022].

Yatsenko and Tananaiko examine how digitalization affects the economic advancement of nations, with a focus on disparities in technology and infrastructure within global trade. The authors highlight a digital gap between developed countries, where 86.6% of the population has internet access, and the least developed

countries (LDCs), where only 19.1% do. This gap constrains LDCs from fully engaging in e-commerce and cross-border trade involving digital goods [Yatsenko and Tananaiko 2023].

China's approach to digital trade offers valuable insights into the integration of digitalization and economic policy. Qu investigates cross-border e-commerce, emphasizing its role in facilitating international trade by reducing barriers and enabling direct consumer access to foreign markets [Qu 2020]. Yin and Choi analyse the effects of China's cross-border e-commerce on its exports, showing significant positive impacts on both goods and services trade. Their comparative analysis highlights the role of supportive government policies and robust digital infrastructure [Yin and Choi 2021]. Guo, Xu, and Zhu measure digitalization effects in China from a global value chain perspective, highlighting how digital advancements are reshaping China’s economic interactions [Guo, Xu, and Zhu 2023].

Li and Zhang discuss the development path of China's digital trade in the context of the digital economy. They argue that China's success is largely due to its comprehensive digital strategy, which includes significant investments in technology, regulatory reforms, and international cooperation [Li and Zhang 2022].

Thus, the analyzed literature highlights the transformative role of digitalization in global trade and its profound implications for China's economic development. Digital trade, driven by technological advancements and globalization, has emerged as a pivotal element in modern commerce, with e-commerce playing a central role in facilitating transactions and reducing trade barriers. Studies emphasize the potential of digital platforms to enhance market access, reduce costs, and foster inclusive growth, particularly for developing countries, while also addressing critical challenges such as digital infrastructure gaps, regulatory barriers, and disparities in technological access.

China’s experience exemplifies the integration of digitalization and trade policy to create a resilient and dynamic digital trade ecosystem. The country’s advancements in cross-border e-commerce, supported by robust government policies and strategic investments in digital infrastructure, have significantly bolstered its exports and international competitiveness. Notably, technologies such as artificial intelligence, blockchain, and big data analytics have enhanced the efficiency and transparency of trade processes, reinforcing supply chain resilience and cost-effectiveness.

Overview of China's e-commerce and digitalization of trade policy evolution. Since the reforms of 1978, education, science, and technology have become key drivers of economic shifts in the People's Republic of China. Each of the fourteen five-year plans for socio-economic development has included measures aimed at stimulating innovative activities. The Chinese government's digital trade strategy has evolved through three distinct stages. Early 1990s to mid-2000s, the focus was on establishing digital infrastructure and developing foundational policies. The second phase (mid-2000s to mid-2010s) centered on fostering innovation and facilitating the transformation of digital trade. The third stage (late 2010s to present) is based on leveraging data as a strategic asset and pursuing international expansion of digital trade initiatives [Zhang 2024].

During this ***initial period***, China concentrated on creating a robust digital infrastructure and establishing foundational policies. The primary focus was stimulating

domestic economic growth while actively seeking international integration, particularly through World Trade Organization membership. Key achievements included launching "Three-Golden Projects" (Golden Bridge, Golden Card, Golden Gateway), developing critical internet infrastructure projects like CHINANET, CERNET, CSTNET, CHINAGBN, implementing comprehensive informatization strategies, and nurturing technological talent through initiatives such as Project 211 [Zhang 2024].

The second phase marked a strategic pivot towards technological innovation and digital trade expansion. China began supporting domestic enterprises more aggressively, emphasizing regional cooperation and stability. The rapid development of ICT, the Internet (particularly mobile), and the onset of the Fourth Industrial Revolution have created an urgent need for the digitalization of economic sectors. In 2008, the Chinese government towards digital transformation was the establishment of the Ministry of Industry and Information Technology, tasked with developing China's information system and ensuring information security. The strategic plans for the digital transformation of China's economy are outlined in government strategies such as "Internet+," "Made in China 2025" (both covering the period 2015–2025), and the Next Generation Artificial Intelligence Development Plan (2017–2030). The "Made in China 2025" strategy focuses on the development of high-tech manufacturing, technological innovation, and small and medium-sized enterprises through financial instruments. The "Internet+" strategy aims to stimulate socio-economic transformations using digital technologies, connect all industrial sectors through the Internet, and develop the digital economy. According to the government concept, the "Internet+" strategy is designed to integrate mobile Internet, cloud computing, big data, and the Internet of Things with modern manufacturing, promote the development of e-commerce, industrial networks, and Internet banking, and help internet companies expand their international presence.

As part of the "Internet+" strategy, the "Three-Year Guidance for Internet + Artificial Intelligence" was introduced in 2016, and in 2017, the Next Generation Artificial Intelligence Development Plan was adopted. The medium-term goal of this plan is for China to become a global innovation center for artificial intelligence by 2030, and to build the country on the principles of an intelligent economy [Дроботюк 2020].

In third phase, China has positioned itself as a global digital trade leader. The approach centers on data-driven economic growth, technological innovation, and addressing systemic economic challenges. Politically, the country prioritizes cybersecurity, sophisticated data governance, and supporting digital trade frameworks, especially for developing nations. In the late 2010s, China shifted to a data-driven economic model, aiming for high-quality growth through innovation in digital trade. Despite economic challenges and the COVID-19 pandemic, the government emphasized emerging industries, digital technology, and industrial digitization to spur growth. The concept of digital trade evolved, now defined as using data as a production factor and emphasizing digital services and delivery [Zhang 2024].

As part of the One Belt One Road initiative, the Chinese government established the Informational (or Digital) Silk Road to foster international connectivity through the construction of cross-border optical cables and other communication trunk line networks in 2015 [Xinhua 2015]. In 2016, China launched the Silk-Road

E-commerce as a major initiative in leveraging China's e-commerce technology, innovative models, and market scale, serving to actively promote international e-commerce cooperation. The Silk-Road E-commerce included in China's Outline of the 14th Five-Year Plan (2021–2025) for National Economic and Social Development and Vision 2035. According to the Department of E-Commerce and Information Technologies of the Ministry of Commerce of the PRC, 33 countries established bilateral mechanisms for accelerating e-commerce cooperation with China as of September 2024 (Figure 1) [商务部电子商务和信息化司 2024]. In 2022, China's cross-border e-commerce trade with 30 “Silk Road” e-commerce partner countries constituted 31.5% of the nation's total cross-border e-commerce volume. The range of products traded through cross-border e-commerce includes clothing, footwear, food, consumer electronics, and other commodities [Qi 2023]. The Silk Road E-commerce and Digital Silk Road facilitated global market expansion for Chinese enterprises while enhancing their competitiveness and securing political support to shape international digital trade standards.

Fig. 1. Silk-Road E-commerce partner countries in 2024

Source: developed by authors based on [商务部电子商务和信息化司2024]

Adjustments in Regulatory Policy are instrumental in advancing the digitalization of trade. China is actively formulating new regulations to both support and oversee digital trade, with a particular focus on data security and consumer rights protection. These initiatives are designed to foster a secure and trustworthy environment for both businesses and consumers.

In November 2016, the Cybersecurity Law was officially enacted by China's Twelfth National People's Congress Standing Committee during its 24th Session and was implemented in June 2017 [Cybersecurity Law… 2016]. The legislation has advanced China's long-standing campaign for sovereignty over internet content and data management. It has imposed security measures, such as mandatory testing, certification, and technical safeguards, while requiring network operators to provide authorities with data access and support during investigations, as well critical sectors store data domestically, and transferring certain data abroad requires permission.

In 2020 China has proposed the Global Initiative on Data Security for balanced technological progress and data security amid rapid digital transformation. It has

emphasized data sovereignty, secure ICT supply chains, and cooperation among states and ICT companies. The initiative has called for global collaboration through agreements to ensure a secure, open, and cooperative cyberspace that benefits all [Xinhua 2020].

China gave its assent to the 14th Five-Year Plan on Digital Economy Development in 2022, which established ambitious targets for digital sector growth. The plan aims to increase the output of core digital industries to 10% of national GDP by 2025, a significant expansion from 7.8% in 2020. Key focus areas include advancing technological capabilities in strategic domains such as quantum information, integrated circuits, blockchain, and emerging communication technologies like 6G. Simultaneously, the plan emphasizes infrastructure development, targeting 45% industrial internet platform connectivity and 60 million households with high-speed broadband by 2025 ["十四五"数字经济发展规划 2022].

Complementing the 14th FYP on Digital Economy Development, China has implemented a multi-pronged policy approach to digital economy governance. Important initiatives include the Fintech Development Plan (2022–2025), the "Eastern Data, Western Computing" initiative to balance regional computing capacities, and comprehensive regulatory measures addressing data security and cross-border data transfers. Regulatory efforts have been particularly prominent, with China introducing robust legal frameworks to manage digital economy growth. The Data Security Law, Personal Information Protection Law, and updated anti-monopoly guidelines demonstrate a nuanced approach balancing innovation with market fairness and data protection. These regulations aim to curb potential monopolistic behaviours while maintaining the sector's dynamism [Wu 2022].

In 2024 China has implemented new regulations governing the cross-border flow of data, which experts see as a positive development for the business sector. These regulations aim to facilitate the high-quality growth of the digital economy and enhance the country's openness. Issued by the Cyberspace Administration of China, the 14-article regulations standardize assessments for exporting data while requiring security reviews for critical infrastructure operators sharing sensitive data overseas. The rules define "important data" as information that, if compromised, could harm national security or social stability but exempt six categories, including data generated in international trade and transnational activities, from security reviews. Those rules promote lawful and orderly global data exchanges while countering claims of data localization. They align with China's long-term goal to establish a safe, lawful cross-border data flow system, boost international cooperation, and enhance global confidence in China's digital economy [Ye 2024].

Integration with global markets represents a significant trend, as China actively collaborates with other countries to establish favourable conditions for digital trade, thereby expanding trade ties and fostering economic development. To strengthen the governance framework for digital trade, China seeks to engage actively in the formulation of international digital trade regulations, contributing to the creation of an open, equitable, just, and non-discriminatory environment for digital advancement. Notably, China initiated formal negotiations to join the Digital Economy Partnership Agreement (DEPA) in August 2022. Since then, five ministerial meetings and numerous technical consultations have addressed critical issues, including trade facilitation, cybersecurity, and emerging technologies. Additionally,

China is collaborating with individual DEPA members on specific initiatives, such as electronic invoicing and electronic bills of lading [Xinhua 2024]. These efforts underscored China's goal of bridging economic divides and gaining influence in shaping digital trade rules.

In Xi's new era digital trade is a key component of the digital economy, aiming to foster innovation, enhance international trade competitiveness, and support economic growth [新华社 2024]. According to the guidelines issued by the General Offices of the Communist Party of China Central Committee and the State Council of the PRC from August 2024, the objectives for digital trade development are as follows: by 2029, digitally deliverable services will account for over 45% of China's total trade in services, supported by enhanced infrastructure, established institutional mechanisms, increased digital openness, and strengthened alignment with international trade rules; by 2035, this share will exceed 50%, underpinned by a secure, efficient governance system and significantly improved systematic openness (table 1) [新华社 2024].

Statistical analysis of China's digital trade: cross-border e-commerce and digitally deliverable services imports and exports. The expansion of e-commerce is one of the main trends in digitalization. China's cross-border e-commerce imports and exports are expected to exceed 2.37 trillion yuan (US$ 337.6 billion) in 2023, growing 15.3% from 2022, according to statistics from China Customs (Figure 2) [中华人民共和国海关总署2024]. This represented an increase of 0.8 pp. to 5.7% of the China's overall goods trade value during the same time. Of these, exports made up 7.7% of China's overall exports over the same time, amounting to roughly 1.84 trillion yuan, a rise of 20.2%. Around 533.52 billion yuan, or 1.1% more, were imported during the same period, making up 3% of all imports into the nation.

An analysis of China's cross-border e-commerce trade reveals a concentrated geographic distribution of export and import destinations. In the export sector, five primary markets dominate, with the United States comprising the largest share at 37.4%, followed by United Kingdom at 8.7%, Germany at 4.7%, Russia at 4.6%, and France at 3.7%. Collectively, these five countries account for approximately 59.1% of total Chinese cross-border e-commerce. Emerging markets such as Thailand (2.5%), Vietnam (2.4%), Malaysia (2.4%) and Australia (2.1%) are also significant. Regarding import dynamics, the primary destinations exhibit a distinct pattern. The United States leads with a 15.6% share, followed by Japan at 13.5% and Australia at 11.2%, collectively representing 40.3% of China's cross-border e-commerce imports. Exports are mainly from Guangdong, Zhejiang, Fujian and Jiangsu, while imports are mainly consumed in Guangdong, Jiangsu, Zhejiang, Shanghai and Beijing. Cross-border e-commerce is dominated by consumer goods, accounting for 97.3% of exports, such as clothing, digital products and home appliances, and 97% of imports, including cosmetics, fresh food and medical products [中华人民共和国海关总署 2024].

According to UNCTAD data, the average annual growth rate of the volume of Chinese foreign trade in digitally deliverable services in the period from 2018 to 2022 was 9%, in particular, exports grew by 11%, imports increased by 7%. In 2023, the export volume of digitally deliverable services amounted to US$ 216.27 billion,

Table 1

Key measures to reform and innovative development of China's digital trade until 2035

Measures	Components	Features and mechanisms
Supporting Digital Trade Development	Digital Products Trade	Encouraging innovation in applications, enhance digital content, and expand cross-border delivery channels
	Digital Services Trade	Promoting areas like digital finance, online education, and telemedicine while encouraging new outsourcing models
	Digital Technology Trade	Advancing technologies such as AI, blockchain, and satellite navigation in international trade
	Digital Subscriptions	Strengthening e-commerce platforms and foster cross-border e-commerce
	Business Development	Nurturing innovative and globally competitive enterprises, fostering synergy among small, medium, and large firms
Institutional and Market Reforms	Market Access	Expanding openness in sectors like telecommunications and internet services while simplifying foreign investment processes
	Cross-Border Data Flows	Developing secure and efficient mechanisms for data flow while safeguarding sensitive data and personal information
	Trade Platforms	Building high-standard export platforms, integrate with international trade rules, and use key trade events for collaboration
Governance and International Cooperation	International Rules	Actively participating in global rule-making (e.g., WTO, DEPA, CPTPP), focusing on fair digital trade standards and tax systems
	Global Partnerships:	Strengthening digital trade collaborations, particularly with ASEAN, BRICS, and other regional partners.
	Trust Systems	Developing certification systems, promote technologies like digital signatures, and support global recognition of digital trust services
	Security	Enhancing safety in digital trade supply chains, ensure stable governance, and diversify international dispute resolution mechanisms
Organizational Support	Leadership	Strengthening government oversight and inter-agency coordination to implement reforms effectively
	Legal Framework	Accelerating digital trade-related legislation and standardization efforts
	Statistics and Reporting	Developing a robust statistical system to monitor digital trade progress and publish relevant data
	Investment and R&D	Promoting private and public investments in digital trade, with an emphasis on intellectual property and innovation
	Talent Development	Training specialized personnel, encourage educational institutions to offer digital trade programs, and foster collaboration between academia and industry

Source: compiled by the authors on the basis of [新华社 2024].

and the import volume was US$ 171.32 billion (Figure 3) [UNCTAD 2024]. Chinese exports of digitally deliverable services are dominated by telecommunications, computer, and information services, which account for a 41.8% share in 2023.

In contrast, Chinese imports of digitally deliverable services are more diversified. According to UNCTAD statistics, in 2023, the largest shares are as follows: charges for the use of intellectual property at 30.8%; telecommunications, computer, and information services at 22.6%; professional and management consulting services at 16.9%; insurance and pension services at 10.1%; research and development at 6.6%; architectural, engineering, scientific, and other technical services at 5.7% [UNCTAD 2024].

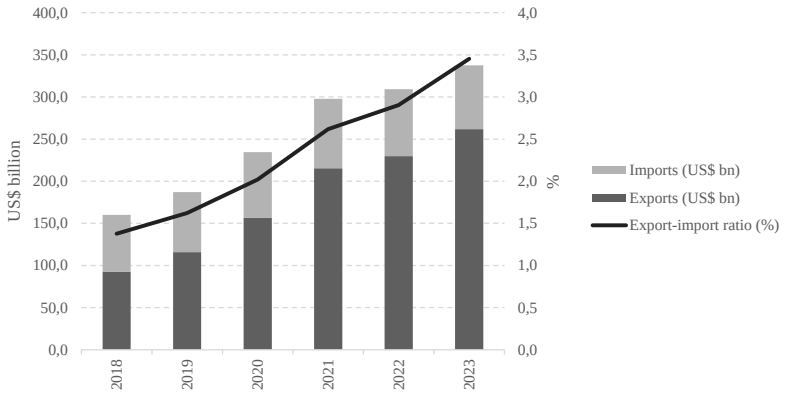

Fig. 2. Cross-Border E-Commerce Import and Export Statistics from 2018 to 2023 (in billion US Dollars)

*Source: [*中华人民共和国海关总署*2024].*

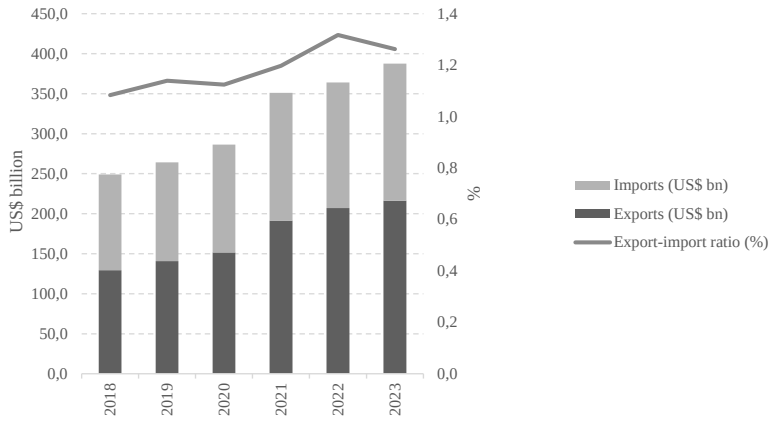

Fig. 3. China's foreign trade in digitally-deliverable services from 2018 to 2023 (in billion US Dollars)

Source: [UNCTAD 2024].

The rapid growth of China's digital trade has been driven by a series of supportive government policies aimed at enhancing both import and export activities. Key strategies include preferential tax measures, streamlined administrative processes, timely regulatory adjustments, international trade cooperation under the Belt and Road Initiative, and the establishment of integrated pilot zones.

Moreover, the volume of cross-border e-commerce in China has increased due to the growing number of internet users and the improvement of logistical infrastructure. It is worth noting that in 2023, there was a significant disparity in internet access between rural and urban areas, with penetration rates of 85.1% and 60.5%, respectively. Although the digital divide had been steadily narrowing since 2018, a reversal occurred in 2023, with the gap widening to 24.6% from 21.1% in 2022

[UNDP 2024]. E-commerce platforms like Alibaba and JD.com have become important channels for international trade, allowing Chinese companies to enter global markets. These platforms have fundamentally transformed consumer behaviour by providing unprecedented access to domestic and international products, enabling comprehensive price comparisons, and creating an integrated financial ecosystem. By the end of 2022, the number of Chinese digital service firms with a market value over US$ 1 billion exceeded 200 [Xinhua 2023]. As reported by ECDB, Shein emerged as the leading cross-border enterprise in China by market value in 2023, boasting an impressive market capitalization of US$ 66 billion. Ranked second was Airwallex, a global e-commerce payment service provider, with a market value of US$ 6 billion. The third, fourth, and fifth positions were occupied by Xingyun Group, KK Group, and Patpat.com, respectively, each with a market valuation ranging from US$ 3 to 4 billion [Cross-Border eCommerce… 2024]. According to the IPC Cross-Border E-commerce Shopper Survey 2023, which encompassed 41 countries, approximately 24% of respondents indicated that their most recent international online purchase was conducted through Amazon's platform (down by 3 pp. compared to 2022). The study further revealed that Alibaba (AliExpress) emerged as the second most prevalent cross-border e-commerce platform, with 16% of participants reporting their latest international transaction through this marketplace (down 1 pp. compared to 2022). A remarkable development was Temu with 7% of respondents reported using this platform in 2023 after it had no presence in the previous year [International Post Corporation 2023].

In addition, the adoption of paperless processes has a significant impact on the development of cross-border e-commerce. However, China's ranking in the UN Trade Digitalization Index (86.67%, including 57.78% for paperless trade and 28.89% for cross-border paperless trade) declined by five places to 14th in 2023 compared to 2021 [United Nations 2023]. According to the UN Global Survey on Digital and Sustainable Trade Facilitation 2023, China's overall trade facilitation score of 91.4% underscores its robust efforts in streamlining and digitalizing trade processes. The country excels in transparency (100%) and paperless trade (96.3%), having fully implemented measures such as online publication of trade regulations, electronic customs systems, and automated processing. However, areas like institutional arrangements (88.89%) and cross-border paperless trade (72.22%) reveal scope for improvement, particularly in establishing a fully functional National Trade Facilitation Committee and enhancing electronic exchanges of key documents across borders. While measures supporting formalities (95.83%), including risk management and expedited shipments, are comprehensive, the partial implementation of release time reporting and electronic customs refunds suggests room for enhanced procedural efficiency. Furthermore, trade finance facilitation and readiness for trade in times of crisis remain partially developed, limiting comprehensive support during emergencies and for financial accessibility. Especially, efforts to incorporate women in trade facilitation and foster cross-border e-commerce are nascent, indicating a need for targeted policies to promote inclusivity and adapt to emerging trade dynamics (Figure 4) [UN Global Survey on Digital … 2024].

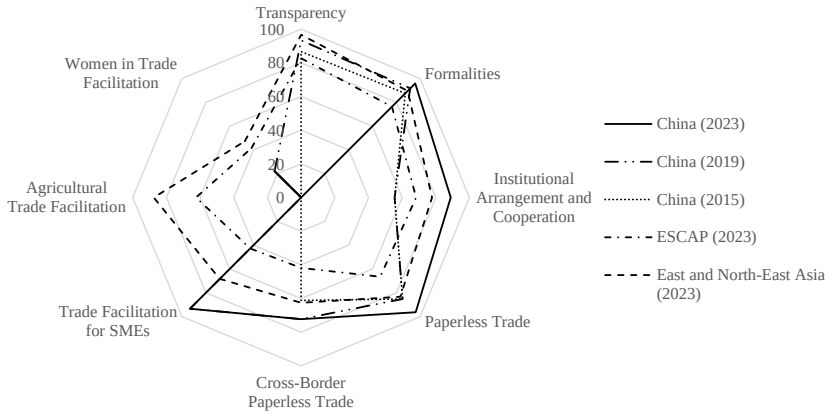

Fig. 4. Evaluation of Digital and Sustainable Trade Facilitation in China (score)

Source: [UN Global Survey on Digital … 2024].

SWOT and TOWS analyses for China's digital trade development. China's digital trade development represents a dynamic intersection of innovation, economic potential, and complex challenges. As the country emerges as a global leader in e-commerce and technological infrastructure, it faces significant obstacles, including uneven access to digital resources and reliance on foreign technologies. Through SWOT and TOWS analyses, this study examines the key factors influencing China's digital trade.

The SWOT analysis highlights China's robust technological leadership, extensive e-commerce market, and highly skilled workforce as major strengths. These factors, supported by significant investments in research and development and government backing, have fostered a thriving digital infrastructure. However, weaknesses such as uneven access to digital technologies, market monopolization, and dependency on foreign technologies pose significant barriers. Opportunities abound in artificial intelligence, financial technologies, and global partnerships, yet these are counterbalanced by threats such as cyberattacks, international competition, and regulatory instability.

The TOWS analysis emphasizes strategic approaches to maximizing opportunities and minimizing threats by aligning strengths and addressing weaknesses. The SWOT and TOWS analyses of China's digital trade development underscore the country's potential and challenges in this sector. By leveraging strengths such as technological expertise and infrastructure, and capitalizing on opportunities in artificial intelligence and global partnerships, China can solidify its global leadership in digital trade. Addressing weaknesses like uneven digital access and dependence on foreign technology, while countering threats such as cybersecurity risks and international competition, will be pivotal. Through strategic policy interventions and sustainable innovations, China has the capacity to transform its digital trade ecosystem into a resilient, inclusive, and globally competitive framework.

Table 2

SWOT analysis: China's Digital Trade Development (Ranking based on the expert survey)

Strengths	Weaknesses
1 Technological leadership in the world 2 High level of e-commerce. One of the largest e-commerce markets in the world 3 Highly skilled workforce 4 Large investments in R&D 5 Highly developed infrastructure for internet and mobile communication 6 Government support for digitalization 7 Active integration into global markets through digital platforms 8 Export of digital technologies 9 Modern cybersecurity standards 10 Innovative spirits of Chinese companies 11 Rapid development of logistics 12 Vast domestic market 13 Support for small and medium-sized enterprises 14 Flexibility and adaptability of Chinese companies 15 Development of mobile payments (WeChat Pay and Alipay)	1 Uneven access to digital technologies 2 Market monopolization 3 Dependence on foreign technologies 4 High cost of implementing digital technologies 5 Lack of sufficient digital literacy 6 Constant changes in legislation and regulatory environment 7 Social inequality 8 The increase in digital transactions raises the risk of cyberattacks 9 Risk of privacy loss 10 Dependence on technical infrastructure 11 Issues with system integration 12 Trust issues with digital platforms 13 Challenges in managing large volumes of data 14 Reduction of jobs in traditional sectors 15 Rapid changes in technology
Opportunities	**Threats**
1 Development of artificial intelligence 2 Attracting foreign investments 3 Development of financial technologies (FinTech) 4 Partnership with international technology giants 5 Growth of e-commerce 6 Export of digital solutions 7 Development of logistics 8 Integration with global supply chains 9 Innovative business models 10 Global expansion/ns 11 Improving customer service quality 12 Expansion of the labor market 13 Enhancing business transparency 14 Development of smart cities 15 Support for sustainable development	1 Cyber threats and hacker attacks 2 Technological sanctions 3 Dependence on foreign technologies 4 Intensification of international competition 5 Regulatory issues 6 Loss of control over data 7 Increase in social inequality 8 Impact on privacy 9 Rapid obsolescence of technology 10 Displacement of traditional businesses 11 Threat to economic security 12 Cultural barriers 13 Labor market uncertainty 14 Environmental consequences 15 Consumer uncertainty

Source: developed by the authors.

Table 3

TOWS Analysis for China's Digital Trade Development

	Strengths	Weaknesses
Opportunities	Technological leadership and high R&D investment can position China to accelerate innovations in artificial intelligence and financial technology sectors, potentially establishing the nation as a global leader in digital trade. China's large e-commerce market and highly qualified human capital can facilitate the international proliferation of digital solutions and global expansion. Government support and modern infrastructure for digitalization enable effective integration with global supply chains and development of smart cities. Innovative spirits of companies and vast domestic market support innovative business models and enhance business transparency	Uneven access to digital technologies can be mitigated by the development of smart cities and sustainable models. Dependence on foreign technologies can be reduced through partnerships with international technology giants and expansion of FinTech. Lack of digital literacy and trust issues with platforms can be improved through customer service quality enhancements and business transparency
Threats	The export of digital technologies and global market integration reduce risks from technological sanctions and international competition. Modern cybersecurity standards and government support can counter cyber threats and mitigate data loss risks. Rapid logistics development can help confront the displacement of traditional businesses through improving efficiency and value delivery	Solving system integration issues and technical infrastructure dependence to reduce vulnerabilities to technological obsolescence and economic security threats. Enhancing efforts to combat social inequality and manage labor market uncertainties through targeted policies and support for small and medium-sized enterprises. Settling regulatory challenges and privacy risks to maintain global competitiveness against cultural barriers and intensified competition

Source: developed by the authors.

Conclusion. China's remarkable progress in digital trade underscores its strategic integration of technology, policy, and market development. Integration of digital technologies has created a robust digital infrastructure, positioning it as a leader in cross-border e-commerce and digitally deliverable services. Despite significant progress, challenges such as reliance on foreign technology, uneven digital access, and cybersecurity risks persist. Strategic opportunities in artificial intelligence, financial technologies, and global partnerships provide pathways for addressing these challenges. The SWOT and TOWS analyses reveal that by aligning strengths with emerging opportunities and mitigating potential threats, China can enhance its digital trade ecosystem. This study concludes that China's emphasis on innovation, international collaboration, and inclusive digital transformation will be crucial in sustaining its competitive edge and fostering a resilient and equitable digital economy in the coming decades.

CONTRIBUTION OF THE AUTHORS

Drobotiuk O. – contribution includes a portion of the literature review, summarising the stages of evolution of state policy in the field of trade digitalisation, collecting and analysing statistical data, organising the survey for the SWOT analysis, and building and analysing the TOWS matrix (1.2 author's sheets).

Osadchuk V. – contribution includes a portion of the literature review, analysis of regulatory policy on cybersecurity, collection of data on modern technologies, systematisation and generalisation of factors for the SWOT analysis, co-analysing the TOWS matrix, and writing annotations in Ukrainian and English (0.4 author's sheet).

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