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# International Comparison and Competitive Prospects of Digital Economy between China and Russia<sup>1</sup>

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Digital economy represents the future development direction of the world, and the advent of the digital era is largely related to the development of this field. China and Russia have strengthened their in-depth cooperation in digital economy in the context of advancing their comprehensive strategic partnership. In this paper the author analyzes the level of development and international competitiveness of digital economies of China and Russia based on the comparison of relevant indicators. The study underlines five aspects for comparing the development indicators: the size of digital economy, the construction of digital infrastructure, digital global governance, global competitiveness of digital economy enterprises, and information and communication technologies. Considerable attention is paid to the deep integration of digital economies with real industries of the two countries that has given a new impetus to the intensive China-Russia practical cooperation. It is concluded that China and Russia should explore the possibility of establishing a digital free trade zone, creating cross-border “smart city clusters”, innovative cooperation in digital technology, which will boost innovative interaction in digital economy and open the digital era of cross-border interconnectivity between China and Russia.

**Keywords:** China and Russia, digital economy, digital trade, industrial convergence.

## Международное сравнение и конкурентные перспективы цифровой экономики Китая и России.

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Цифровая экономика представляет собой будущее направление развития мира, и наступление цифровой эпохи во многом связано

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с развитием этой сферы. Сейчас на фоне углубления всестороннего стратегического партнёрства Китай и Россия усилили сотрудничество в этой области. В данной статье автор анализирует уровень развития цифровых экономик Китая и России, их международную конкурентоспособность на основе сопоставления соответствующих показателей. Для сравнения показателей развития в исследовании выбраны пять аспектов: размер цифровой экономики, строительство цифровой инфраструктуры, цифровое глобальное управление, глобальная конкурентоспособность предприятий цифровой экономики, информационно-коммуникационные технологии. Значительное внимание уделяется глубокой интеграции цифровых экономик двух стран с реальными отраслями промышленности, позволившей придать новый импульс углублению китайско-российского практического сотрудничества. Делается вывод о том, что Китай и Россия должны изучить возможность создания цифровой зоны свободной торговли, создания трансграничных «умных городских агломераций», инновационного взаимодействия в области цифровых технологий, что позволит придать импульс инновационному сотрудничеству в сфере цифровой экономики, совместно открыть цифровую эпоху трансграничной взаимосвязанности между двумя странами.

**Ключевые слова:** Китай и Россия, цифровая экономика, цифровая торговля, промышленная интеграция.

## INTRODUCTION

In recent years, the trend of digital development in the global economy has become more obvious. Traditional industries are accelerating their transformation and upgrading into digital, networked and intelligent industries, and the scale of the digital economy continues to expand. The sudden outbreak of COVID-19 in 2020 hit the global economy hard. According to the latest statistics of the World Bank, the global GDP decreased by 3.6 percentage points year-on-year in 2020. In addition, according to the *Global Digital Economy White Paper (2021)*, the proportion of the digital economy in the global GDP was 43.7% in 2020, which was 2.5 percentage points higher than last year, and the added value scale reached 32.6 trillion dollars [18]. Against the backdrop of a deep global recession and negative economic growth in major countries around the world, the global digital economy has bucked the trend and become a key force to boost the global economy. China and Russia have seized the opportunities of the global digital economy and injected new impetus into bilateral economic development cooperation. Therefore, this paper compares

the relevant indicators and indexes of the development of digital economy between China and Russia, in order to summarize and analyze the competition and cooperation relationship and prospects of the development of digital economy between China and Russia.

## THE CONCEPTUAL FRAMEWORK

This paper is divided into three parts. Firstly, the development status of digital economy between China and Russia is reviewed and compared in detail from five aspects: the development scale of digital economy, digital infrastructure construction, digital global governance level, global competitiveness of digital enterprises, and ICT industry. Accelerating the construction of digital infrastructure is prerequisite for the development of the digital economy. Digital technology is beneficial to comprehensively promote the building of a “digital government” and improve public services. Integrating advanced digital technologies with the real economy can promote the digital transformation and upgrading of traditional industries. The digital economy development, represented by digital industrialization and industry digitalization will comprehensively promote the productivity and the change of the country’s economic infrastructure, but also become a new international competition in the main fields of politics, technological control and discourse power [19]. The ICT industry has become a pillar of the development of the digital economy. Cloud computing, 5G, the Internet of Things, big data, artificial intelligence, information networks and other ICT technologies are accelerating integrated innovation, and enabling digital transformation of industries better, faster and deeper. Meanwhile, internet security is also expanding to digital security, and promoting the healthy and rapid development of the digital economy.

Secondly, the paper explores the in-depth integration of the digital technology and key industries to boost the high-quality economic development of China and Russia. The deep integration of traditional service industry and digital technology has given rise to new forms of digital trade, which has boosted the scale of the global service industry. Vigorously integrating information technology with manufacturing develops advanced and intelligent manufacturing. The development of agriculture will be deeply integrated with digital technology, and the development of traditional agriculture will be transformed to digital agriculture. As one of the world’s largest agricultural countries, China is committed to the development of digital countryside construction. Digital technology has enabled

the tourism industry to accelerate its transformation and become an important driving force for its development. Finally, this paper deeply analyzes the prospects of international competition and cooperation of digital economy between China and Russia from three aspects: exploring the construction of digital free trade zone, planning the construction of smart urban agglomeration, and innovating digital technology cooperation, so as to promote the high-quality development of digital trade cooperation between the two sides.

## INTERNATIONAL COMPARISON OF CHINA-RUSSIA DIGITAL ECONOMY

### I. Scale of Digital Economy

#### *1. Development Status of China's Digital Economy Scale*

China's digital economy continues to flourish. In the past decade, China has successively issued the “*Broadband China*” Strategy and Implementation Plan, Made in China 2025, Guiding Opinions of the State Council on Actively Promoting the “Internet+” Action, Informatization and Industrialization Integration Development Plan (2016—2020), National Informatization Development Strategy Outline and other strategic plans conducive to the development of China's digital economy.

According to the *White Paper on the Development of China's Digital Economy (2022)*, the overall scale of China's digital economy has grown from 2.6 trillion yuan in 2005 to 45.5 trillion yuan in 2021. The proportion of the total scale of digital economy in GDP also increased from 14.2% in 2005 to 39.8% in 2021. The average annual growth rate in 2021 reach 13.8%, significantly higher than the average growth rate of GDP (11.3%) in the same period. Digital economy has become the key driving force for the sustained and stable growth of China's national economy, and further highlights its important position in the national economy [21] (table 1).

Table 1

**Overall scale and GDP ratio of China's digital economy  
in 2005—2021 [20; 21; 22] (unit: trillion yuan RMB)**

Index	2005	2008	2011	2014	2015	2016	2017	2018	2019	2020	2021
GDP	18.7	31.9	48.8	64.3	68.9	74.6	83.2	91.9	98.7	101.4	114.3
Digital economy	2.6	4.8	9.5	16.2	18.6	22.6	27.2	31.3	35.8	39.2	45.5
GDP ratio, %	14.2	15.2	20.3	26.1	27.5	30.3	32.9	34.8	36.2	38.6	39.8

## 2. Development Status of Russia's Digital Economy Scale

Russia has gained a new breakthrough in economic growth from the digital economy. Russia is highly focused on the development strategy of digital economy. In the past five years, Russia has successively launched *The Development Strategy of the Information Society of the Russian Federation 2017—2030*, *The Digital Economy Plan of the Russian Federation*, *The National Artificial Intelligence Development Strategy of Russia before 2030*, *The Decree on the National Development Goals of the Russian Federation before 2030*, *The Draft Agreement on Information Exchange for the Development of the Digital Society of the CIS Member States* and *The July Directive* and other strategic plans for the development of Russia's digital economy.

It can be seen that Russia is striving to promote the development of digital economy and digital transformation by strengthening infrastructure construction, focusing on the development of core and key technologies, strengthening and expanding the integrated application in the real economy, and establishing and improving the legal and policy system, so as to achieve the transformation and upgrading of economic structure and win strategic opportunities [23]. In recent years, both the overall scale and the proportion of Russia's digital economy in GDP have increased. In 2012, the digital economy accounted for about 1% of Russia's GDP. In 2019, it accounted for 18.2%. Although the total GDP of Russia and the scale of digital economy showed a slight decline in 2020 due to the impact of COVID-19, the proportion of digital economy in GDP increased slightly year-on-year (table 2). Russia has great room for development and broad prospects in promoting the digital transformation and upgrading of traditional industries.

Table 2

**Overall scale and GDP ratio of Russia's digital economy  
in 2016—2020 [24; 25] (unit: billion dollars)**

Index	2016	2018	2019	2020
GDP	12 768	16 573	16 874	14 835
Digital economy	2 205	2 942	3 076	2 756
GDP ratio, %	17.3	17.8	18.2	18.6

## II. Digital Infrastructure Development Status

The opening of a new era of digital globalization has encouraged countries around the world to accelerate the pace of digital infrastructure construction. As the global leading country in the development of digital economy (table 3), China's network infrastructure construction is moving into a stage of high-quality development. Russia is actively seizing the opportunities of digital globalization and expanding the coverage of digital infrastructure. According to the state of Internet development in Russia released by the World Bank, from 2010 to 2020, the proportion of Internet users in China increased from 34% to 70%, and that in Russia from 49% to 85% [9]. China and Russia are growing rapidly in terms of increasing the penetration rate of wired Internet and expanding the coverage of fixed broadband and mobile networks (table 4, table 5, table 6).

Table 3

**The scale of digital economy in the world's leading countries in 2016—2021 (unit: billion dollars)**

Country	2016	2017	2018	2019	2020	2021
USA	108 381	114 778	123 408	130 652	135 997	153 181
China	34 009	40 200	47 290	51 954	53 565	70 576
Japan	22 935	23 000	22 901	23 949	24 769	25 691
Germany	20 561	22 407	23 994	24 380	25 398	28 767
UK	15 358	16 800	17 287	17 606	17 884	21 679
France	9 620	10 400	11 550	11 698	11 870	13 637
Republic of Korea	6 122	6 915	7 637	7 995	8 478	9 631
Russia	2 205	2 755	2 942	3 076	2 756	3 348

Source: CAICT.

Table 4

**Internet users, mobile Internet users and Internet penetration rate in China in 2015—2021 (unit: ten thousand)**

Indicator	2015	2016	2017	2018	2019	2020	2021
Internet users	68 826	73 125	77 198	82 851	90 359	98 899	103 195
Mobile Internet users	61 981	69 531	75 265	81 698	89 690	98 576	102 874
Internet penetration rate, %	50.3	53.2	55.8	59.6	64.5	70.4	73.0

Source: CNNIC China Internet Development Statistics Survey.

Table 5

**Internet users with fixed broadband,  
Internet users with high-speed broadband (100M and above)  
and the proportion in China in 2016—2021 (unit: hundred million)**

Indicator	2016	2017	2018	2019	2020	2021
Internet users with fixed broadband	2.97	3.49	4.07	4.49	4.84	5.36
Internet users with high-speed broadband	0.49	1.35	2.86	3.84	4.35	4.98
The proportion of Internet users with high-speed broadband	16.50	38.90	70.30	85.40	89.90	93.00

Source: China's Ministry of Industry and Information Technology.

Table 6

**Comparison of digital infrastructure popularization indicators  
between China and Russia in 2015—2020 [5; 6; 12; 13] (unit: person)**

Year	Mobile cellular subscriptions (per 100 people)		Fixed broadband subscriptions (per 100 people)	
	China	Russia	China	Russia
2015	92	157	19.69	18.54
2016	97	158	22.81	18.95
2017	103	156	27.74	21.37
2018	116	157	28.54	22.00
2019	122	164	31.34	22.52
2020	119	164	33.60	23.23

### III. Digital Governance

At present, the global digital economy is in a stage of rapid development, and the construction of digital infrastructure and related system supply are the cornerstone of digital global governance. Countries and international organizations around the world have accelerated the construction of digital rules and good order, especially in promoting global governance in areas such as digital platform services under multilateral cross-border arrangements. According to the E-Government Development Index (EGDI) and E-Participation Index (EPI) shown in the *United Nations E-Government Survey Report*, China and Russia are comprehensively promoting the construction of a new government operation mode—“digital government”, and actively improving and building the willingness and ability of information exchange technology to provide public services, and narrowing the digital divide between countries with better digital economy

development (table 7). In addition, according to the report on the Status of Local Online Services (LOSI) survey of global cities, Moscow and Shanghai ranked 1 and 13 in 2018 (40 cities), 6 and 9 in 2020 (100 cities) and 6 and 10 in 2022 (193 cities), respectively, with LOSI values higher than the world average [14; 15; 16].

Table 7

**Comparison of global rankings of EGDI and EPI between China and Russia in 2012—2022 (193 countries) [1; 2]**

Country	2012		2014		2016		2018		2020		2022	
	EGDI	EPI	EGDI	EPI	EGDI	EPI	EGDI	EPI	EGDI	EPI	EGDI	EPI
China	78	66	70	33	63	22	65	29	45	9	43	13
Russia	27	19	27	30	35	32	32	23	36	27	42	57

#### IV. International Comparison of Global Competitiveness of Digital Economy Enterprises

The development of digital economy has become a key force in restructuring global factor resources, reshaping the global economic structure and changing the global competition pattern. According to the global digital competitiveness rankings released by IMD, China has a significant momentum of improvement in digital technology absorption and transformation capacity, while Russia has a relatively slow development process in this field (table 8). In addition, by referring to the subdivision dimension of digital competitiveness in *Big Data Blue Book: China Big Data Development Report No. 4*, the differences in digital competitiveness between China and Russia among G20 countries are striking in four aspects of digital innovation, digital governance, digital economy, digital services, digital security and other fields [26] (table 9). The overall level of China's digital competitiveness among G20 countries is among the best, especially in the two fields of digital economy and digital innovation, which rank first and second respectively. However, the three indicators of digital governance, digital security and digital service are all lower than those of Russia, and there is a relative lag.

Table 8

**Comparison of global digital competitiveness index ranking between China and Russia in 2015—2022 (64 countries) [17]**

Country	2015	2016	2017	2018	2019	2020	2021	2022
China	33	35	31	30	22	16	15	17
Russia	45	44	46	45	45	50	42	—



Table 9

**Comparison of digital competitiveness index ranking  
in the five dimensions between China and Russia in 2020**

Economy	Score	Rank	Innovation	Rank	Governance	Rank	Economy	Rank	Security	Rank	Service	Rank
China	83.51	2	81.49	6	73.18	9	90.19	1	80.19	10	90.30	8
Russia	75.02	11	59.20	14	88.53	3	48.69	19	88.69	7	93.67	3

**V. International Comparison of Information  
and Communication Technology (ICT) Industry**

The ICT industry has become a persistent driving force for the rapid development of digital economy in various countries around the world. Cloud computing, 5G, the Internet of Things, big data, artificial intelligence, information networks and other ICT technologies in China and Russia are developing rapidly. Meanwhile, both countries attach great importance to cybersecurity which is also expanding to digital security, so as to promote the healthy and rapid development of the digital economy. According to Huawei's 2020 Global Connectivity Index (GCI), China's ICT core technology indicators are all higher than the global average level, while Russia's relatively low scores in cloud computing, artificial intelligence and the Internet of Things (table 10). With the high-quality development of the ICT industry, countries around the world are striving to improve the level of digital security and strengthen the construction of Internet security infrastructure. According to the global network security index released by the International Telecommunication Union (ITU), Russia's network security index has been rising year by year and has been ahead of China. It can be seen that Russia attaches increasing importance to national information security, and information network security has been included in the national security strategy (table 11).

Table 10

**Comparison of performance results of ICT core technical indicators  
between China and Russia in 2020 (79 countries) [8]**

Economy	Broadband	Cloud computing	AI	The Internet of Things
China	84	66	48	42
Russia	72	36	27	33
Average score	62	42	30	40

Table 11

**Comparison of global network security index ranking between China and Russia in 2014—2020 (193 countries) [7]**

Economy	2014	2017	2018	2020
China	14	32	27	33
Russia	12	10	26	5

## CONTRIBUTIONS OF DEEP INTEGRATION OF DIGITAL ECONOMY AND INDUSTRIES TO HIGH-QUALITY CHINA-RUSSIA ECONOMIC DEVELOPMENT

### I. Digital Restructure of Service Industry

The deep integration of traditional service industry and digital technology has given rise to new forms of digital trade, which has boosted the scale of the global service industry. From 2011 to 2020, global trade in digital services grew from US \$2.14 trillion to US \$3.17 trillion, and the share of digital services trade in service trade rose from 47.89 percent to 63.55 percent. Although global trade in services declined by 19.96% year on year in 2020 due to the impact of the global COVID-19 pandemic, trade in digital services only declined by 1.78%. The proportion of global trade in digital services in service trade jumped by 11.76 percentage points compared with 2019, which was the fastest increase since 2011 [28]. Taking the e-commerce sales of online retail between enterprises and consumers (B2C) as an example, in 2019, both China and Russia ranked top 15 in the world in terms of B2C e-commerce sales. China's e-commerce sales are nearly 50 times higher than Russia's, and the share of online shoppers is much higher (table 12). In the first half of 2022, China's online retail sales reached 6.3 trillion yuan (\$913.5 billion), up 3.1 percent year on year, which accounted for 25.9 percent of total retail sales, up 2.2 percentage points from the same period last year, according to the National Bureau of Statistics. Online sales in Russia reached 2.3 trillion rubles (\$37.94 billion) in the first half of the year, up 50 percent year on year, accounting for 11.2 percent of total retail sales from 8.8 percent, according to the Russian Association of Internet Traders, the Gazette reported on August 11. In addition, according to the statistics of online retail sales from 2018 to 2020 by UNCTAD, China's online retail sales and its share have increased year by year, and the electronic online sales platforms have increased the demand for online physical goods due to the COVID-19 epidemic (table 13).

Through the above data analysis, it can be concluded that both China and Russia are in the global leading position in the development of e-commerce, and the development momentum of the digital service trade platform of the two countries is strong, and the advantages of the digital service platform are obvious.

Table 12

**Comparison of B2C e-commerce sales between China and Russia in 2018—2019 [3; 4]**

Year	Economy	Rank	B2C e-commerce sales (\$ billion)	Share of B2C e-commerce sales in GDP (%)	Online shoppers (million)	Online shoppers (% of internet users)
2018	China	1	1,361	10.0	610	73
	Russia	17	20	1.2	30	34
2019	China	1	1,539	10.7	639	75
	Russia	13	31	1.9	34	35

Table 13

**China's online retail sales in 2018—2020 [4]**

Indicator	2018	2019	2020
Online retail sales (\$ billions)	1060.4	1233.6	1414.3
Retail sales (\$ billions)	5755	5975	5681
Online share (% of retail sales)	18.4	20.7	24.7

## II. Digital Upgrading of Manufacturing Industry

Manufacturing is the backbone of the real economy and the key to promoting high-quality economic development. China's manufacturing industry is the core industry that promotes the rapid development of China's economy. China has been the country with the largest manufacturing value added in the world for more than ten years [27]. In order to realize the deep integration of the new generation of information technology and the manufacturing industry, and accelerate the digital transformation of the manufacturing industry, China and Russia have made a number of important achievements in the overall planning of top-level design, digital infrastructure, industrial Internet platform construction and other aspects. China's manufacturing added value has steadily increased year by year, accounting for nearly 30% of GDP. Russia's manufacturing industry is relatively weak,

but its share of GDP has slightly increased year by year, and its added value hit a peak in recent years in 2021 (table 14). These increases are closely related to the deep involvement of digitalization in manufacturing. With cloud computing, the Internet of Things, big data, artificial intelligence, virtual reality, blockchain, such as the rise of new technology, more and more countries put the development of digital manufacturing industry as an important way to promote the transformation and upgrade of traditional industries, vigorously promote a new generation of information technology and manufacturing depth fusion, vigorously develop the advanced manufacturing and intelligent manufacturing.

Table 14

**China-Russia manufacturing value added and its share in GDP  
in 2015—2021 [10; 11]**

Years	China		Russia	
	Value added (\$ trillion)	GDP ratio, %	Value added (\$ billion)	GDP ratio, %
2015	3.20	28.95	168.84	12.38
2016	3.15	28.07	149.39	11.70
2017	3.46	28.11	193.83	12.31
2018	3.87	27.84	212.47	12.82
2019	3.82	26.77	219.58	12.97
2020	3.86	26.29	199.92	13.42
2021	4.87	27.44	256.96	14.45

In order to realize the deep integration of the new generation of information technology and the manufacturing industry, and accelerate the digital transformation of the manufacturing industry, China and Russia have made a number of important achievements in the overall planning of top-level design, digital infrastructure, industrial Internet platform construction and other aspects. China has issued relevant strategic planning *Guideline on Deepening “Internet + Advanced Manufacturing” to Develop Industrial Internet, The 512 Project Promotion of “5G + Internet Industry”, Guidelines on Promoting the Deeper Integration of Advanced Manufacturing and Modern Service Industries, Digital Transformation Plan for Intelligent Manufacturing in Building Materials Industry (2021—2023), Guidelines on Deepening the Integrated Development of the New Information Technology and Manufacturing, The 14<sup>th</sup> Five-Year Plan for Intelligent Manufacturing Development, The 14<sup>th</sup> Five-Year Plan for Deep*

*Integration of Informatization and Industrialization*, which provides a strong rule and system guarantee for the digital transformation of manufacturing industry.

Take 5G as an example. By November 2021, China had built 1.396 million 5G base stations, making it the country with the most extensive 5G network coverage in the world. China has built the world's largest and most advanced 5G independent network. By integrating 5G and other new generation information technologies with the research and development, production and management systems in the original manufacturing production, profound changes in the production process can be promoted. There are more than 80 influential industrial Internet platforms in China, and more than 350,000 industrial apps of various types. In 2021, the industrial Internet enabling index reached 61.93, providing strong support for improving industrial quality, reducing cost and increasing efficiency. In June 2020, Russia issued the *Comprehensive Strategy for the Development of the Manufacturing Industry in the Russian Federation Before 2024 and 2035*, aiming to improve the competitiveness of products by accelerating the development of high and new technologies and further introducing digital technologies into production, with a focus on the overall development of the manufacturing industry. The Russian government estimates that by 2024 and 2035, the output value of the manufacturing industry will increase by 116.8% and 192.5% over 2019, respectively. It can be seen that China and Russia are accelerating the digital transformation of the manufacturing industry, improving the quality of manufacturing development, and narrowing the economic gap with developed countries by virtue of manufacturing digitalization.

#### PROSPECTS OF INTERNATIONAL COMPETITION AND COOPERATION OF CHINA-RUSSIA DIGITAL ECONOMY

The upgrading of China-Russia comprehensive strategic partnership in the new era has helped the two countries deepen all-round cooperation. The successive approval of China's free trade zone has also brought new impetus to the development of economic and trade cooperation between China and Russia. In addition, the sweeping wave of global digitalization provides an important starting point for accelerating the optimization of the Sino-Russian trade structure. China and Russia should accelerate the cultivation of new forms and formats of economic and trade cooperation.

## **I. Exploration of the Construction of Digital Free Trade Zones**

The development of the digital economy has given birth to a variety of new models and formats of trade development. The establishment of the free trade zone has realized the liberalization and facilitation of cross-border trade. It is vital to establish a digital free trade zone to deepen the integration of digital technology and the real economy and upgrade the digital transformation of government supervision and service models. Intelligent regulation of customs clearance and trade can be achieved through the integration of advanced digital technology and government regulation, which is specifically manifested in digital ports and international trade single window digital platforms.

China-Russia border ports should explore the construction of digital free trade zones, especially in the establishment of China-Russia border port cities that have been approved by the state. In the first 11 months of 2021, the volume of cross-border e-commerce trade between China and Russia increased by 187%. In 2021, the import and export trade volume of cross-border e-commerce in Hunchun City, Jilin Province exceeded 2 billion yuan. In 2020, the online sales of cross-border e-commerce in Suifenhe City, Heilongjiang Province reached 1.5 billion yuan. In August 2021, the physical platform of Heilongjiang International Trade “Single Window” and cross-border e-commerce public service platform completed the test work, and realized the embedded operation of local characteristic functions of cross-border e-commerce, which can query customs clearance, customs declaration, manifest and transportation in real time, and can also upload standardized information and various certificates simultaneously. Therefore, China and Russia will join hands to open the digital era of cross-border connectivity between China and Russia, explore digital trade rules and standards, focus on the entire industry chain of digital trade, realize mutual recognition and sharing of data and information, and promote the high-quality development of digital trade cooperation between the two sides.

## **II. Construction of Smart City Clusters**

Taking Heilongjiang Province, as an important window for China's opening to the north and the central hub of cooperation in Northeast Asia, as an example, with its geographical advantage on the border

between China and Russia, it aims to jointly plan the construction of smart city clusters with the Russian Far East to promote the all-round barrier-free flow of economic factors such as people, logistics, information and capital. In September 2014, Heihe, a border city between China and Russia in Heilongjiang Province, and Blagoveshchensk, Russia, planned to exchange and cooperate on jointly building a smart-city citizen public service system connecting the twin cities of China and Russia. In 2020, Heihe city had promoted the construction of new smart city projects. With the construction of smart city, information such as the number of enterprises and the progress of enterprise projects in each park of Heihe can be grasped in real time, which will provide more data support for future investment promotion, make decision-making more scientific, public services more efficient, and smart industries more high-end. With the help of new formats of digital economy development, China-Russia border cities will build cross-border “smart city clusters”, give full play to the unique advantages of both sides, boost the internationalization of border cities, and enhance their status and functions in national economic development and opening up.

### III. Innovation of Digital Technology Collaboration

China and Russia can complement each other in digital science and technology innovation cooperation, and achieve mutual benefit and win-win results. Compared with China, whose basic research field is relatively weak, Russia has obvious advantages in basic research and talent reserve, but its investment in scientific and technological innovation is insufficient, and there are deficiencies in applied research and market promotion. China provides financial guarantee and scientific research and creation environment for scientific and technological innovation. China’s huge and diversified market demand and relatively complete industrial promotion provide a broad space for the development of digital technology innovation. A large number of future industries with digital intelligence as the main feature have the basic conditions for outbreak in China [28]. At the same time, 2020—2021 is also the “China-Russia Year of Science and Technology Innovation”, launching the “China-Russia Digital Economy Demonstration Project” and holding the China-Russia Digital Economy Summit Forum and a series of related activities, so as to actively build a high-end platform for academic, technological and industrial exchanges and cooperation in the field of digital economy between China and Russia, promote extensive and in-depth

exchanges between the two countries in the field of digital economy, promote digital technology innovation and industrial development between the two countries, innovate digital synergy and cooperation, and add impetus to the innovation cooperation between the two countries in the field of digital economy.

## CONCLUSION

At present, based on the data service capability, the digital era of everything perception, everything Internet, everything intelligence is accelerating. Countries all over the world have identified the development of digital economy as a strategic priority and actively strive for economic transformation opportunities. As China and Russia push forward their comprehensive strategic partnership of coordination into a new era, the rapid development of the digital economy between the two countries is an important driving force for high-quality China-Russia cooperation. China and Russia should regard the development of digital economy as a national development strategy and make long-term deployment to upgrade their industrial structure with the help of digital transformation.

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