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Research on Countermeasures for Enhancing the Competitiveness of China's Property Service Trade Empowered by Big Data

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Abstract

Against the backdrop of in-depth integration between the digital economy and the globalization of service trade, digital transformation has become a critical path for countries to boost the core competitiveness of service trade. As an important branch of modern producer services and people's-livelihood-oriented services, property services represent an emerging area for China's opening-up of service trade. In recent years, China's property service industry has kept expanding in scale, and leading enterprises have accelerated their international layout. Nevertheless, the overall property service trade still suffers from low digital penetration, inadequate service standardization, single cross-border business forms and weak risk prevention-and-control capacity. Compared with leading property-service-powered countries and regions such as Singapore, Europe and America, there remains considerable room for improvement in international market competitiveness. With its strengths including massive data collection, intelligent analytical modeling, precise demand matching and dynamic risk early-warning, big-data technology can effectively restructure cross-border operation modes for property services and optimize the allocation of service-trade resources. Based on theories of service-trade competitiveness and digitally-empowered industrial upgrading, this paper adopts industrial statistical data from 2020 to 2024. It uses data tables to intuitively illustrate the development status and digital-transformation shortcomings of China's property service trade, and analyzes the internal mechanisms and existing pain points of big-data-empowered property service trade. Optimization countermeasures are proposed from five dimensions: digital infrastructure, standard-system construction, business-form innovation, cross-border risk control and talent cultivation. It is expected that digital technologies can empower China's property service trade to achieve quality improvement and efficiency gains, and foster new strengths in international competition for service trade.

Keywords

Big Data; Property Services; Service Trade; International Competitiveness; Digital Empowerment.

1. Introduction

Currently, global service trade is accelerating toward digitalization and intelligence. Digital service trade accounts for over 65% of global service trade, and digital technology has turned into a core factor reshaping service-trade competitive advantages across nations. Under such circumstances, China has continuously deepened the opening-up of its service trade.[1] According to statistics from the Ministry of Commerce, China's total import and export volume

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of service trade reached 6.9 trillion yuan in 2024, representing an 8.7% year-on-year growth. Digital service trade has become a core driving force for the high-quality development of the industry. With the continuous implementation of high-level opening-up policies for the service sector, traditional property management has broken through the boundaries of basic domestic community services and expanded to diverse scenarios such as overseas commercial buildings, industrial parks and foreign-related new towns. Property service trade is growing into an emerging growth segment of China's modern service trade.[2]

According to the *2024 White Paper on the Development of China's Property Service Industry*, the total operating revenue of China's property service industry exceeded 1.8 trillion yuan by the end of 2024, with more than 60 listed property enterprises. Leading enterprises have extended their overseas businesses to over 20 countries and regions including Southeast Asia, the Middle East and Africa, showing initial signs of internationalization.[3] In terms of development quality, however, China's property service trade still relies heavily on labor-intensive basic services such as cleaning, security and equipment operation-and-maintenance. The export proportion of digital and intelligent high-end services is less than 12%, far below the average level of 45% among international leading enterprises. Drawbacks including low efficiency of traditional manual management modes, insufficient adaptability of cross-border services and low utilization of data resources have restricted the internationalization and high-end development of the industry.[4]

From an academic-research perspective, domestic studies on service trade mostly focus on mainstream fields such as finance, logistics, cultural tourism, while special researches targeting the segmented track of property services are relatively scarce. There are few quantitative empirical analyses combined with big-data technologies. Based on the latest industrial statistical data and quantitative analysis, this paper integrates the theory of digitally-empowered industrial upgrading with the theory of service-trade competitiveness. It systematically sorts out the empowerment paths of big data for the efficiency, service quality, risk control and business-form innovation of property service trade. This enriches the research system at the intersection of digital service trade and property management, filling research gaps in this segmented industry. Meanwhile, this paper precisely quantifies the development shortcomings and digital-transformation pain points of China's property service trade using authentic industrial data, and puts forward practical big-data-empowered countermeasures. These countermeasures can help enterprises cut cross-border operation costs, innovate high-end service-trade forms, avoid cross-border trade risks, push the industry out of low-end homogeneous competition, improve the international market share and brand influence of China's property-service industry, and provide industrial support for the transformation and upgrading of modern service trade.

2. Development Status of China's Property Service Trade and Core Advantages of Big-data Empowerment

This paper mainly adopts literature research, data analysis and inductive summarization. Theoretical foundations are laid by reviewing literature on digital empowerment, service-trade competitiveness and smart property services. Public data from the Ministry of Commerce and property-industry associations for 2020-2024 are compiled to quantitatively analyze the development status and problems of the industry via statistical tables. Based on data results, the advantages and existing shortcomings of big-data empowerment are summarized, and targeted improvement countermeasures are finally proposed. Centering on the logic of "status quo data — empowerment mechanisms — quantitative analysis of problems — countermeasure optimization", this paper features a complete structure and sufficient arguments.[5]

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2.1. Quantitative Status of China's Property Service-trade Development

To intuitively reflect the development trends of China's property service trade and industrial digitalization in recent years, core industrial data from 2020 to 2024 are collated for analysis from four dimensions: total industrial operating revenue, industrial digital investment, total number of overseas projects and export proportion of digital high-end services. The specific data are shown in the table below， As shown in Table 1.

Table 1. Quantitative Status of China's Property Service Trade Development

Year	Total Industrial Operating Revenue (Trillion Yuan)	Industrial Digital Investment (100 Million Yuan)	Total Number of Enterprise Overseas Projects	Export Proportion of Digital High-end Services (%)
2020	1.21	89.6	326	7.3
2021	1.43	112.3	389	8.1
2022	1.57	138.5	442	9.2
2023	1.72	169.2	498	10.5
2024	1.86	203.8	563	11.8

Data Source: Annual Report on the Development of China's Property Service Industry (2020-2024), China Property Management Association, service-trade statistical data of the Ministry of Commerce.

As indicated by the above table, from 2020 to 2024, China's total operating revenue of the property service industry, digital investment and number of overseas projects all witnessed year-on-year growth, and the industry kept advancing its international layout and digital transformation. Nevertheless, prominent core drawbacks remain: the export proportion of digital high-end services stood at merely 11.8% in 2024. The overall property service trade still heavily depends on traditional basic services, with severe shortages in the supply of high-end digital services, low trade added-value and weak core competitiveness. Besides, despite the year-by-year growth rate of industrial digital investment, its overall scale is still relatively low compared with service sectors such as finance and logistics. The potential of data in empowering trade development has not been fully unlocked.

2.2. Core Advantages of Big-data Empowerment for Property Service Trade

First, cost reduction and efficiency improvement to optimize the allocation of cross-border service production factors. According to industrial estimates, labor costs account for more than 65% of traditional cross-border property services, accompanied by prominent problems such as high operation-and-maintenance error rates and delayed service responses. By integrating overseas equipment operation-and-maintenance data, personnel attendance data and customer demand data, big data can realize intelligent early-warning of equipment failures, dynamic manpower allocation and automatic optimization of service workflows. It can cut cross-border labor costs by 20%-30% and lift service response efficiency by over 40%, greatly enhancing the cost and efficiency advantages of property service trade.

Second, precise demand matching to improve the adaptability of international services. Property-industry standards, laws, regulations and consumption habits vary sharply across

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countries, and traditional modes can hardly adapt to overseas markets accurately. Big data can capture data on national industrial policies, market demands and user evaluations, build overseas market demand profiles, and provide customized service schemes for overseas projects of different regions and scenarios. This addresses the disconnect between domestic service modes and international markets.

Third, dynamic risk early-warning to enhance the operational stability of trade. Cross-border operations of property services face four major risks: geo-economy, policy changes, data compliance and service disputes. Big data can build a cross-border risk database to monitor real-time changes in national service-trade policies, data-security laws and regulations, and market competition patterns, so as to achieve early risk warning and targeted disposal. It effectively mitigates operational risks in cross-border trade and guarantees stable operation of overseas projects.

3. Quantitative Problems Existing in the Competitiveness of China's Property Service Trade from the Big-data Perspective

3.1. Severe Differentiation in Industrial Digital Penetration and Weak Empowerment Foundation for Small-and-medium-sized Enterprises

Digital development within China's property industry presents an obvious pattern of "concentration among leading enterprises and lagging performance among small-and-micro entities", with uneven distribution of digital resources and a weak overall foundation for trade digitalization. As reflected in the data table below, the polarization of industrial digital penetration was prominent in 2024， As shown in Table 2.

Table 2. Digital Penetration of Different Types of Property Service Enterprises

Enterprise Type	Digital System Coverage Rate (%)	Unified Data Management Rate of Overseas Projects (%)	Average Annual Digital Investment (10 000 Yuan)
Leading Listed Property Enterprises	92.6	87.3	500-2000
Medium-sized Property Enterprises	45.2	32.5	50-200
Small-sized Property Enterprises	11.8	4.6	Below 10

Data Source: 2024 Research Report on Digital Transformation of the Property Industry.

The digital-system coverage rate of small-sized property enterprises is only 11.8%, with almost no systematic data-management capacity. For most small-and-medium-sized property enterprises engaged in cross-border businesses, the unified data management rate of overseas projects is below 35%. Fragmented data, inconsistent standards and poor inter-operability prevent big data from effectively empowering cross-border services, resulting in a generally low level of industrial digital trade.

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3.2. Lack of Service-trade Standardization and Low Adaptability to International Markets

At present, China has not formulated unified digital standards for cross-border property services. Domestic service specifications differ greatly from international ISO property-service standards as well as industrial standards of overseas countries. According to industrial statistics, around 62% of China's exported property-service projects suffer from low customer satisfaction due to substandard service criteria, and 38% of overseas service disputes stem from non-standardized service workflows and inconsistent standards. Meanwhile, the industry lacks a mechanism for big-data standardization accumulation, and cannot optimize service standards iteratively through massive overseas-project data. Consequently, China's property services struggle to enter high-end markets in Europe and America, and the trade remains positioned at a low level for a long time.

3.3. Superficial Application of Big Data and Shortage of High-end Service-trade Forms

Big-data applications of domestic property enterprises are mostly confined to basic domestic community operation-and-maintenance, rather than being deeply integrated into the whole chain of cross-border trade. Statistics show that low-end services such as basic cleaning, security and maintenance account for as high as 88.2% of China's property service trade. The proportion of high-end services based on big data, including smart-park operation, cross-border consulting, digital trusteeship and asset-operation-and-maintenance analysis, remains extremely low. Enterprises lack the capacity to dig into demands in overseas niche markets via data and innovate service products, which leads to low service added-value and narrow profit margins. There exists a remarkable gap in core trade competitiveness compared with international leading enterprises such as CapitaLand and JLL.

3.4. Deficient Cross-border Data Risk-control System and Weak Anti-risk Capacity of Trade

More than 90% of domestic cross-border property enterprises have not built professional big-data risk-control platforms, and suffer from severe lags in monitoring overseas data-compliance policies and changes in trade policies. Among dispute incidents of Chinese property enterprises' overseas projects from 2022 to 2024, 43% were caused by non-compliant cross-border data transmission and misjudgment of policies, incurring economic losses of tens of millions of yuan for enterprises. Traditional manual risk-control modes feature low efficiency and poor accuracy, and cannot meet the risk-prevention-and-control requirements of cross-border service trade in the digital era, seriously restricting the stable development of industrial trade.

3.5. Huge Shortage of Compound Talents and Insufficient Driving Force for Digital-trade Development

According to industrial talent statistics, compound talents equipped with integrated capabilities in property management, big-data technology and international service trade make up less than 3% of employees in China's property industry. Traditional property practitioners lack knowledge of digitalization and international trade, while technical personnel are unfamiliar with property-industry scenarios. Structural talent shortages slow down the digital-transformation and international-layout progress of the industry, constituting a core human-resource bottleneck restricting big-data-empowered development of property service trade.

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4. Countermeasures for Enhancing the Competitiveness of China's Property Service Trade Empowered by Big Data

4.1. Gradually Improve Digital Infrastructure to Consolidate the Foundation of Data-empowered Trade

Targeting the polarization of industrial digitalization, a tiered digital-upgrading strategy should be implemented. First, led by the China Property Management Association, unified industrial standards for data collection, storage, interfaces and applications shall be formulated to resolve data fragmentation and incompatibility, and realize interconnection and data sharing among domestic and overseas projects. Second, leading enterprises shall continue to invest in the construction of data middle platforms and cross-border smart-service platforms to set benchmarks for digital trade. Small-and-medium-sized enterprises shall adopt lightweight SaaS digital tools to complete basic digital transformation at low cost and raise the data-management rate of overseas projects. Third, investment in cross-border computing power and intelligent operation-and-maintenance hardware shall be increased to provide hardware support for big-data analysis and cross-border service empowerment, and comprehensively lift the overall digital-trade level of the industry.

4.2. Iterate Standards Supported by Big Data and Build an International-oriented Service System

Big-data technologies shall be leveraged to address insufficient service standardization and poor international adaptability. Enterprises shall build an overseas-standard database, integrate property-industry codes of various countries, ISO international service standards, local laws and regulations, as well as customer-evaluation data. Big-data analysis shall be adopted to extract standardized service workflows adaptable to different regions. Meanwhile, a dynamic iteration mechanism shall be established to monitor updates to international standards and changes in market demands in real time and optimize service specifications accordingly. A closed-loop system of "data accumulation — analytical modeling — standard optimization — practical application" will be formed to improve the international recognition of China's property services.

4.3. Deepen Integrated Data Application and Innovate High-end Service-trade Forms

Efforts shall be made to break dependence on traditional low-end service trade and innovate service forms empowered by big data. On the one hand, user-profile technologies can be applied to precisely tap demands in overseas high-end markets, launch high-added-value products such as big-data operation-and-maintenance consulting, digital trusteeship of smart parks, asset-data analysis and cross-border value-added services, optimize the structure of service trade and increase the export proportion of high-end services. On the other hand, big-data analysis of global market competition patterns and regional market gaps enables targeted penetration into high-end markets in Europe, America, Japan and South Korea. The industry shall achieve transformation from "labor export" to "technology export, brand export and data-service export", and build differentiated competitive advantages.

4.4. Build Big-data Risk-control Platforms and Strengthen Risk Prevention and Control for Cross-border Trade

The industry shall cooperate with leading enterprises to jointly build cross-border big-data risk-control platforms. Data on global policies, data compliance, geopolitics and market competition shall be integrated to construct intelligent early-warning models, realizing real-time monitoring, graded early-warning and intelligent assessment of risks for overseas

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projects. Enterprises shall rely on such platforms to standardize whole-process management of cross-border data, strictly abide by data-security and trade-compliance requirements of various countries, reduce risks related to policies, compliance and service disputes, and improve the stability and anti-risk capacity of property service trade.

4.5. Build Cross-disciplinary Training Systems to Fill the Shortage of Compound Talents

Universities and colleges shall optimize curriculum systems by offering interdisciplinary courses covering property management, big-data analysis, international service trade, cross-border compliance and cross-cultural communication to cultivate targeted compound talents. Enterprises shall deepen university-enterprise cooperation, set up practical-training bases and carry out order-oriented talent training. In-service staff shall receive regular special training on digital technologies and international-trade rules. An industrial talent-exchange platform shall be established to introduce professionals specializing in digital trade and big-data technology, optimize talent structures, and deliver core support for the digital and international development of the industry.

5. Conclusions and Prospects

Based on industrial panel data from 2020 to 2024, this paper analyzes the development status and core problems of China's property service trade. Research shows that despite continuous expansion of overall industrial scale, the industry is confronted with problems including unbalanced digital infrastructure, inadequate cross-border standardization, shortage of high-end business forms, imperfect big-data risk-control systems and shortages of compound talents, which lead to weak international competitiveness. Big-data technologies can empower industrial transformation and upgrading through four dimensions: cost-and-efficiency improvement, precise demand matching, risk prevention-and-control and business-form innovation. Therefore, coordinated efforts should be made from five aspects: upgrading digital infrastructure, constructing international standard systems, innovating high-end business forms, developing cross-border risk control and fostering talents, so as to push property service trade toward a high-end mode empowered by digital technologies. In the future, with the iteration of digital technologies and further opening-up of the service industry, China's property sector shall keep advancing digital transformation and enhance its global market share and industrial discourse power.

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