世界互联网大会
World Internet
Conference

Cross-Border E-Commerce Competitiveness Research Report

—— Logistics Enterprises

World Internet Conference

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Preface

The world is accelerating the unprecedented changes unseen in a hundred years, with profound and complex transformations in the international landscape. Cross-border e-commerce continues to demonstrate strong growth, emerging as a highlight of global economic development. To further assist economies in creating a business environment conducive to the growth of the cross-border e-commerce industry, World Internet Conference (WIC), leveraging its role as an international organization, has partnered with its members and the WIC Working Group on Cross-Border E-Commerce, along with industry think tanks, academic institutions, and enterprises, to conduct research on cross-border e-commerce competitiveness and produce a series of reports. These reports focus on **countries, platform enterprises,** and **logistics companies.**

This report presents a study on the competitiveness of cross-border e-commerce from the perspective of **logistics enterprises.** 50 representative logistics companies from six global regions are selected as the research subjects. The competitiveness of these enterprises is assessed based on four dimensions: operations, services, innovation, and sustainable development. A three-tier indicator system is constructed to quantify the results of these indicators using publicly available data, industry surveys, and expert interviews. The Analytic Hierarchy Process (AHP) is employed to systematically analyze the data, resulting in an evaluation of the competitiveness levels of the logistics companies, followed by an in-depth analysis of the findings.

The report summarizes the performance of logistics enterprise competitiveness as follows: First, improving transportation timeliness is the core factor in strengthening the competitiveness of logistics companies. Second, end-to-end service is a crucial reflection of a company's ability to integrate global resources. Third, diversified transportation services create a competitive moat for cross-border e-commerce logistics. Fourth, flexible and specialized cross-border warehousing has emerged as a new choice for differentiated competition. Fifth, the dual-driven approach of intelligent and green innovations enhances competitive advantages.

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01
Major Conclusions

The logistics enterprises in this report refer to companies that provide logistics services for cross-border e-commerce activities. The industry types can be categorized into trunk transport, small parcel delivery (SPD), and warehousing services, covering processes such as collection, trunking, distribution, and delivery. Logistics is the core link in the fulfillment and delivery of cross-border e-commerce goods, ensuring the actual completion of transactions. As the online process of global trade accelerates, cross-border e-commerce has driven explosive growth in logistics services, while simultaneously raising higher demands for logistics timeliness, end-to-end service, diversified transportation methods, and warehousing flexibility. Through the study of

logistics enterprise competitiveness, the following conclusions are drawn:

(I) Improving transportation timeliness is the core factor in strengthening the competitiveness of logistics enterprises.

Consumer expectations for the delivery speed of cross-border goods are increasing. The research findings indicate that logistics companies are actively implementing measures to optimize various stages, from front-end collection to last-mile delivery, significantly enhancing transportation timeliness. Firstly, transportation efficiency is improved through the scientific and rational optimization of transport routes. Secondly, companies are establishing partnerships with high-quality airlines to increase direct flight routes, thereby reducing transit stages to expedite cargo turnover. Third, customs clearance capabilities in the destination countries are being strengthened to ensure that goods enter the market smoothly.

• **Column 1: Logistics Companies Implement Multiple Measures to Enhance Service Timeliness**

C.H. Robinson organizes expert teams to assess factors such as population density, geographical environment, policy requirements, and urban planning in their operational areas. By developing delivery strategies tailored to local conditions, the company utilizes its self-developed global multimodal transport management system. This enables them to complete sorting and packaging within four hours after cutoff, ensuring logistics distribution on the same day and improving transportation timeliness by 0.5 to 1 day.

FedEx is continuously expanding direct flight routes between key markets in China, Japan, South Korea, and Singapore, as well as Europe and North America, within the Asia-Pacific region. This enables goods to be delivered to major markets in as little as 2 to 5 days. Additionally, FedEx is gradually increasing its route investments in the African market, launching connections between cities like Johannesburg, South Africa, and Nairobi, Kenya, and key logistics hubs in Europe and Asia. This facilitates quicker exports for African e-commerce merchants and eases the entry of products from other regions into the African market.

United Parcel Service, Inc. (UPS) partners with Brazilian airlines in the South American market to launch a dedicated route from Miami, USA, to São Paulo, Brazil. This route primarily transports popular cross-border goods, such as clothing and cosmetics, during the local e-commerce peak season. UPS can flexibly adjust flight frequency and capacity based on order volume and time requirements, while also providing value-added services like priority loading and expedited pickup.

SF Express is the first to utilize RFID technology for real-time monitoring and tracking of goods. By employing RFID[1] readers and cloud systems, they achieve precise tracking and positioning of parcels, which not only improves delivery efficiency but also speeds up customs clearance.

(II) End-to-end service significantly reflects company's global resource integration capability.

End-to-end cross-border logistics service encompasses the entire chain from the starting point to the destination, including collection, trunking, distribution, and delivery. The service allows for seamless connections between various logistics stages, reducing transit time. The research findings indicate that companies with this capability exhibit stronger resource integration and greater control over the entire logistics chain. Among the 50 sampled enterprises, 38 have successfully established end-to-end service capabilities, with half achieving this through self-construction and the other half realizing it through external collaborations.

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1. Radio Frequency Identification, abbreviated as RFID, is a wireless communication technology that utilizes radio frequency signals for contactless information transmission through spatial coupling (alternating magnetic or electromagnetic fields) to achieve identification. It is also referred to as electronic tagging.

- **Column 2: Logistics Companies Actively Build End-to-End Capabilities**

Cainiao integrates resources from global logistics partners to establish a completed end-to-end service. In the collection stage, it leverage express delivery points and warehousing centers in major cities to achieve rapid pickups, offering onsite collection services for large merchants. They also utilize intelligent algorithms to optimize pickup routes, reasonably scheduling collection vehicles based on order volume and geographical location, significantly shortening collection times. In the trunking stage, Cainiao has launched charter services and dedicated cross-border e-commerce flights, consolidating sea freight container resources and optimizing the booking process. By employing big data and intelligent forecasting technologies, they conduct precise analyses of cargo flow and direction, allowing for rational transportation route planning. During the distribution stage, their global intelligent distribution center processes massive volumes of parcels quickly and accurately using automated sorting systems, intelligent recognition technology, and big data analysis. It dynamically adjusts distribution plans based on real-time traffic information and the load conditions of delivery points. In the delivery stage, Cainiao collaborates with delivery companies in various countries to establish localized delivery networks, providing delivery personnel with optimal route planning through an intelligent delivery system. They have also introduced self-service lockers in certain countries.

Geopost (an international parcel delivery network in France) has expanded its online collection channels in the collection stage, allowing customers to schedule pickup services online. Geopost collaborates with numerous cross-border e-commerce platforms in Europe, enabling couriers to pick up parcels at designated locations. In the trunking stage, Geopost has formed partnerships with several airlines and is actively expanding its rail transport services, such as collaborating with China Railway Express to open a dedicated overland rail freight route from Chengdu to Malaszewicze, Poland. During the distribution stage, Geopost partners with JD Logistics, utilizing its overseas warehouses [2] in Europe for sorting and delivery. The company offers various delivery options, including standard, expedited, and scheduled deliveries, along with global return services.

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2. "Overseas warehouse" refers to storage facilities established abroad, mainly used for cross-border e-commerce.

(III) Diversified transportation services serve as a protective shield for cross-border e-commerce logistics.

Cross-border e-commerce involves a variety of goods, each requiring different transportation methods. High-value small electronic products necessitate a fast and secure shipping environment, while larger items place greater emphasis on controlling transportation costs. Diversified transportation methods have become key for logistics companies to meet varying customer needs. Research result verifies that highly competitive logistics enterprises have established diverse transportation networks and customized logistics solutions that encompass air, sea, rail, and road transport. Some companies combine different transportation methods to leverage complementary advantages through multimodal transport. They offer tailored solutions for cross-border e-commerce clients, such as selecting specific routes to avoid risk areas, deploying specialized packaging teams for reinforcement, and providing comprehensive cargo tracking and information feedback services, so as to enable merchants to stay updated on their shipments at all times.

- • **Column 3: Logistics Companies Build Diverse Transportation Service Capabilities**

CJ Logistics effectively integrates various transportation resources, including sea, air, and land transport. For time-sensitive products, the company employs a combination of air and land transport, while for large volumes of goods, it opts for a combination of sea and rail transport. For instance, in the European market, goods are first transported by air to major hubs such as Frankfurt and Amsterdam, and then rapidly delivered to various destination countries using Europe's developed road transport system.

Geodis has launched the Myparcel service for small parcel delivery in cross-border e-commerce. This service integrates sea, air, and road transportation methods to ensure that goods shipped from the United States to destinations such as Canada and Europe can be delivered within 2 to 9 days.

DHL Group offers tailored transportation services and solutions based on corporate needs, addressing various types of goods, including small parcels, sensitive items, and oversized shipments. For lightweight parcels weighing under 5 kilograms, the company employs a "low price + no warehouse delays + quick processing" approach, achieving delivery within 3 to 6 days. For oversized, over-length, or overweight goods, special vehicles and tools are arranged to ensure safe and timely delivery.

(IV) Flexible and specialized cross-border warehousing became a new choice for differentiated competition.

Flexible warehousing strategies are crucial for cross-border logistics enterprises. Research findings indicate that internationally renowned logistics companies generally offer warehousing services and continuously enhance warehousing flexibility to meet the demands of cross-border e-commerce. These companies often employ advanced warehouse management systems to achieve intelligent warehousing layouts and precise inventory management based on factors such as cargo attributes, flow trends, and customer order patterns. Some Chinese enterprises cater to the characteristics and needs of cross-border e-commerce by providing "overseas warehouse" services, which allow merchants to respond quickly to orders, manage cargo allocation, and ensure timely shipments. Additionally, these services can include returns, exchanges, and repair options.

• **Column 4 : Logistics Companies Actively Optimize Warehousing**

Maersk has established a systematic presence in North America and Europe by acquiring and building overseas warehouses and last-mile delivery networks. They create comprehensive solutions for cross-border e-commerce clients under the "Ecommerce Logistics" initiative. In 2023, Maersk launched a specific solution for Chinese merchants, offering overseas warehouse leasing and last-mile delivery services in Europe and North America.

Zongteng Group's affiliated brand Goodcang has developed over 1.4 million square meters of storage space across more than 30 countries and regions, providing rapid delivery services for merchants. By stocking goods in advance in some European and American countries, they can complete 80% of orders within 24 hours, achieving a fulfillment rate exceeding 95% within three days. Leveraging their overseas warehouses, they offer localized ancillary services for consumers and merchants. For example, for electronic products, Goodcang is equipped with specialized technicians and related equipment to perform diagnostics and repairs on simple malfunctions. Additionally, they provide services such as product assembly, packaging, relabeling, and repackaging according to the needs of different cross-border e-commerce platforms and merchants in various countries.

(V) Dual drivers of green and intelligent transformation enhance competitive advantage.

Smart logistics and green logistics concepts provide enterprises with multidimensional competitive advantages. Smart logistics leverages cutting-edge technologies such as big data, artificial intelligence, and the Internet of Things to conduct precise data analysis and forecasting for logistics processes, enabling optimized resource allocation. In the warehousing stage, intelligent warehouse management systems can dynamically arrange storage locations based on sales data,

improving inbound and outbound efficiency. During transportation, intelligent scheduling systems can plan optimal routes, reducing travel distance and time. Real-time logistics information tracking and feedback mechanisms enhance service transparency and controllability, thereby improving service quality. As an important avenue for enterprises to fulfill social responsibilities and achieve sustainable development, green logistics has shown significant effectiveness in reducing costs. Logistics expenses represent one of the core costs for merchants in the cross-border e-commerce trade chain. Stable logistics pricing is crucial for businesses. By utilizing clean energy, logistics companies can effectively mitigate the instability caused by fluctuations in oil prices, thereby lowering energy costs. Furthermore, the use of environmentally friendly packaging and the promotion of green transportation methods can enhance consumer goodwill and trust, increasing brand recognition among consumers.

• **Column 5: Logistics Companies Implement Practices in Smart Logistics and Green Logistics.**

Ocean Network Express (ONE) utilizes a digital freight booking platform to provide customers with real-time quotes and booking services for export goods, enhancing booking efficiency and convenience. By migrating its enterprise application systems to the cloud, the company has improved information processing speed and accuracy, allowing it to better respond to rapid changes in shipping information. Additionally, the company has ordered methanol dual-fuel powered container ships, which are

expected to significantly reduce greenhouse gas emissions and are scheduled for delivery in 2027.

Hapag-Lloyd has developed an energy management system for container terminals, using solar panels to power terminal facilities and employing electric cranes and automated equipment to enhance the environmental performance of the terminals.

Kerry Logistics has implemented a rainwater collection system in its logistics parks and is actively promoting rail transport and inland shipping to reduce carbon emissions from road transportation.

Logistics enterprises are a key support for the development of cross-border e-commerce. Their competitiveness relies not only on critical factors such as transportation timeliness, the completeness of services, levels of diversification, and flexibility, but also benefits from the dual-driven approach of smart and green innovations. By enhancing capabilities in these areas, logistics companies can strengthen their competitiveness in the cross-border e-commerce sector, providing essential support for the successful completion of cross-border e-commerce transactions.
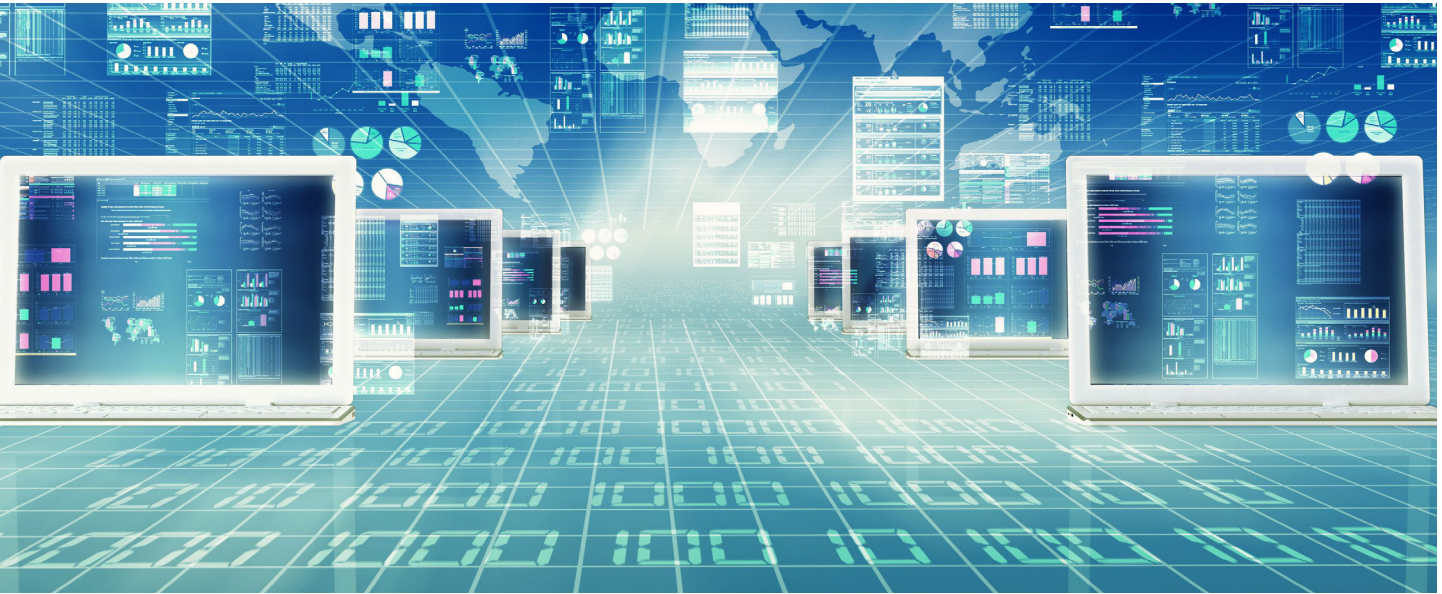
02
Research Framework

(I) Selection of Logistics Enterprise Samples

This report comprehensively considers factors such as the primary business types, development stages, and geographical locations of logistics enterprises. A total of 50 representative companies from around the world have been selected as the subjects of this study, with the list provided in Appendix 1.

(II) Indicator System and Framework

In order to comprehensively assess the competitiveness of logistics enterprises, this report examines four aspects: operations, services, sustainable development, and innovation for the sampled companies. This results in primary indicators that are broken down and weighted accordingly. The framework of the indicator system is illustrated in Figure 1.
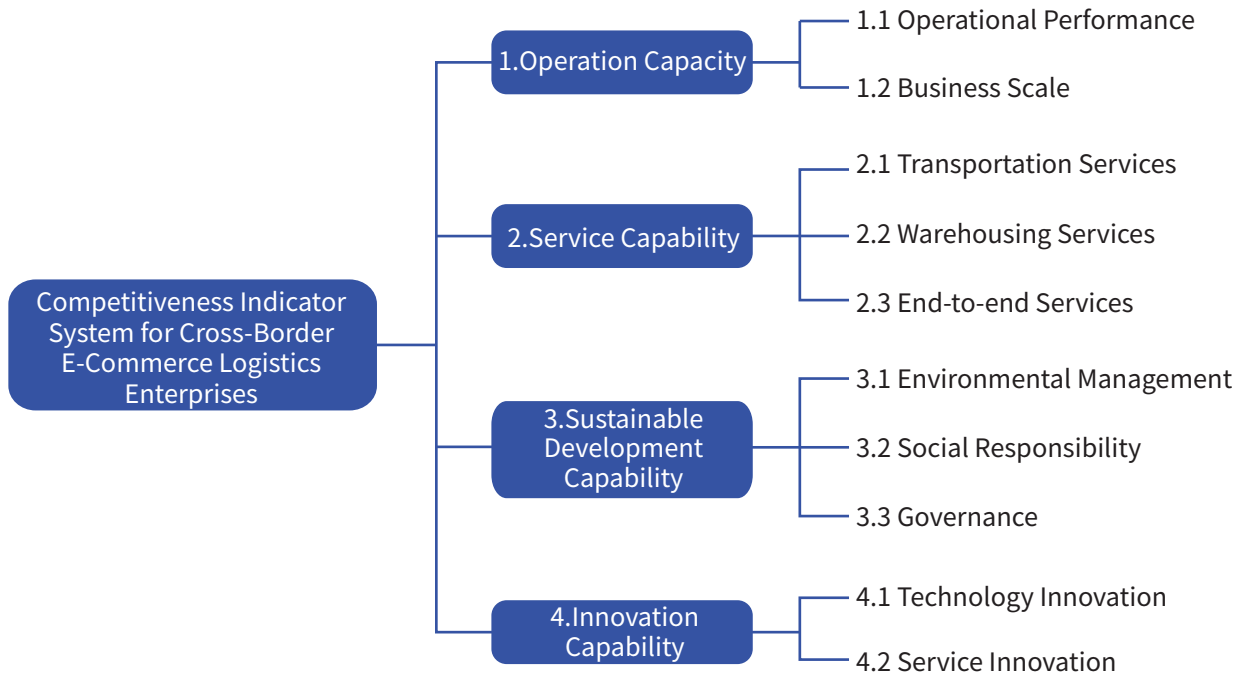
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                                    ┌─ 1.1 Operational Performance
                    1.Operation Capacity ─┤
                                    └─ 1.2 Business Scale

                                    ┌─ 2.1 Transportation Services
                    2.Service Capability ─┼─ 2.2 Warehousing Services
                                    └─ 2.3 End-to-end Services
Competitiveness Indicator
System for Cross-Border                  ┌─ 3.1 Environmental Management
E-Commerce Logistics        3.Sustainable ─┼─ 3.2 Social Responsibility
Enterprises                 Development    └─ 3.3 Governance
                            Capability

                                    ┌─ 4.1 Technology Innovation
                    4.Innovation Capability ─┤
                                    └─ 4.2 Service Innovation
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Figure 1: Competitiveness Indicator Design for Cross-Border E-Commerce Logistics Enterprises

1. Operation capability: This reflects a logistics company's overall capabilities in areas such as revenue, growth level, and global presence, serving as a key indicator of the company's development status. Operational capacity is measured through the following two secondary indicators:

1.1 Operational performance: This aspect directly reflects the operational level of a logistics company, primarily examining revenue and growth rate.

1.2 Business scale: This indicator reflects the company's international market presence, mainly assessing the number of countries or regions the company serves and the geographic regions covered by its logistics routes.

2. Service capability: This aspect reflects the breadth and professionalism of a company's

transportation network. It is measured by the following three secondary indicators:

2.1 Transportation services: This measures whether a company provides various modes of transport, including road, maritime, and air transport.

2.2 Warehousing services: This indicator assesses whether a logistics company provides warehousing services and the global distribution of these warehousing facilities.

2.3 End-to-end services: This indicator examines the logistics company's resource integration capabilities and control over the complete logistics chain, encompassing four stages: collection, trunking, distribution, and delivery.

3. Sustainable development capability: This reflects a logistics company's potential for long-term development and its sense of social responsibility. It primarily examines

the company's ESG management practices, specifically in areas such as environmental protection, social responsibility fulfillment, and governance improvement. Sustainability capacity is measured through the following three secondary indicators:

3.1 Environmental management: This indicator evaluates a logistics company's practices and achievements in areas such as energy conservation, emissions reduction, and resource recycling and utilization.

3.2 Social responsibility: This assesses a logistics company's practices and achievements in areas such as philanthropic activities and the protection and development of employee rights.

3.3 Governance: This measures a logistics company's practices and achievements in areas such as data security, user privacy protection, and risk management.

4. Innovation capability: This reflects a company's ability to adapt in a constantly changing market environment and is measured by the following two secondary indicators:

4.1 Technological innovation: This analyzes how a logistics company applies new technologies such as the Internet of Things, artificial intelligence, and big data to improve business operations.

4.2 Service innovation: This indicator examines whether a logistics company provides customized and differentiated services.

03
Result Analysis

(I) Analysis Results by Indicator Dimension

1．Operation Capability Indicator Analysis

Operation capability primarily assesses the operating performance and business scale of logistics enterprises. The research proves that companies with strong operational capabilities have outstanding global service capacities. These enterprises have established extensive logistics service networks worldwide, setting up sites, warehouses, and transportation hubs in numerous countries and regions, enabling them to reach different market tiers and possess strong resource integration capabilities. As

shown in Figure 2, 34% of logistics companies achieved scores above 70, indicating a relative leadership in operational capability; nearly half of the companies scored between 50 and 70, while 18% had scores below 50, suggesting that their operational capabilities require improvement.
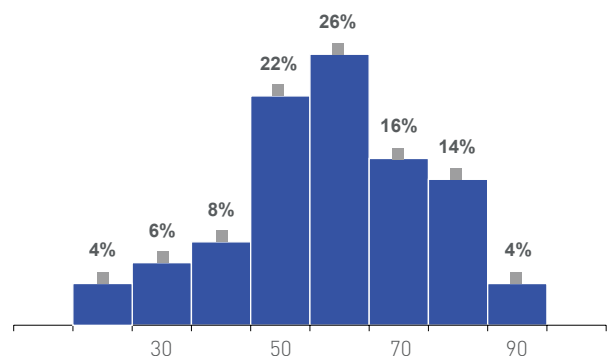

Figure 2: Frequency Histogram of Operation Capability Indicator

In terms of operation performance (Indicator 1.1), two types of companies stand out. One type includes logistics enterprises such as China Railway, COSCO Shipping, Deutsche Bahn Group, and DSV A/S[3], which possess core trunk logistics resources. These companies leverage their unique advantages in rail transportation, maritime shipping, and comprehensive logistics trunk services to establish large and efficient logistics network systems. The other type consists of international express delivery companies represented by DHL Group, FedEx Corp., SF Express, and UPS Inc. These enterprises focus on the field of commercial express services, equipped with advanced logistics information technologies, efficient distribution networks, and high-quality customer service systems.

In terms of business scale (Indicator 1.2), international express delivery companies demonstrate a strong advantage due to their extensive global market reach. Through years of development and accumulation, these companies have established large and efficient logistics networks worldwide, utilizing advanced information technology systems for real-time tracking and monitoring of parcels. Additionally, logistics enterprises such as Cainiao, GLS Group, and the United States Postal Service (USPS), which primarily focus on cross-border e-commerce small parcel delivery, also perform notably well. They have achieved coverage in major regional markets through either self-built networks or extensive strategic partnerships, and they have developed specialized logistics solutions tailored for the transportation of small items.

- **Column 6: Cases Reflecting the Operation Capability of Logistics Companies**

COSCO Shipping, headquartered in Shanghai, focuses on shipping, ports, and logistics as its core industries, with a broad business scope. The fleet operated by COSCO Shipping has a total capacity of 111 million deadweight tons, comprising 1,372 container ships, ranking among the top in the world. The company has invested in 56 global terminals, with its container terminals having an annual throughput capacity of 13.2 million TEUs. Its shipping routes cover over 1,500 ports in 160 countries and regions, creating a comprehensive global service network. COSCO Shipping provides efficient logistics solutions for cross-border e-commerce, with its consolidation services extending to more than 60 countries and regions. It also offers ancillary services such as information provision, freight forwarding, and supply chain integration. In terms of operational capability, the company continuously optimizes its services and product innovations through measures such as expanding overseas cooperation, promoting digital innovation, and launching intelligent logistics service platforms, thereby enhancing its competitiveness and influence in cross-border e-commerce.

USPS, headquartered in the U.S., is the only courier service capable of reaching every address within the country. USPS primarily serves cross-border e-commerce through international mail and small parcel delivery services, with a global network that covers

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3. Unless otherwise specified, companies in this report are sorted by their initials.

most regions of the world. This service offers certain price advantages, making it particularly attractive to cost-sensitive cross-border e-commerce merchants and users. Additionally, USPS provides international express mail services with various options for different timeframes and prices, suitable for mid- to high-value cross-border e-commerce orders. Leveraging its comprehensive domestic coverage, USPS's last-mile delivery service balances reach and cost advantages, establishing extensive collaborations with cross-border logistics service providers such as UPS, DHL, and Cainiao.

2. Service Capability Indicator Analysis

Service capability primarily assesses the levels of transportation, warehousing, and end-to-end services of logistics enterprises. The research verifies that companies with outstanding service capabilities can integrate resources from land, sea, and air transport, combining multiple modes of transportation to provide comprehensive end-to-end service capabilities from collection to delivery, supported by experienced and professional logistics service teams. Fifty percent of logistics companies achieved service capability indicator scores of 80 or above. These enterprises offer a diverse range of transportation services, have widespread global coverage for warehousing services, and have established robust end-to-end service capabilities. Conversely, 26% of companies scored below 60, with some only developing professional advantages in one category—transportation, warehousing, or end-to-end services—while others still have room for improvement in both service types and coverage.
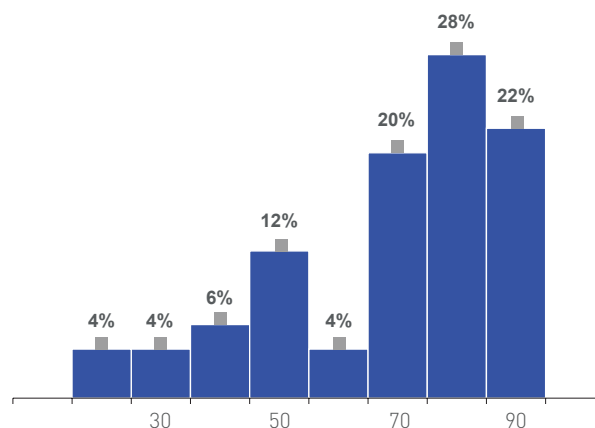

Figure 3: Frequency Histogram of Service Capability Indicator

In terms of transportation services (Indicator 2.1), companies such as SF Express, Toll Group, and Hellmann possess strong capabilities across air, sea, rail, and road transportation. They can select the most efficient logistics routes based on different target markets, product types, and time requirements, while also providing multimodal transport services.

Regarding warehousing services (Indicator 2.2), companies like Maersk, Expeditors, and Zongteng Group stand out in terms of the number, distribution, and automation level of their warehousing facilities. By strategically planning warehouse layouts, equipping advanced facilities, and utilizing intelligent management systems, they achieve scientific storage, precise allocation, and efficient turnover of goods.

For end-to-end services (Indicator 2.3), companies such as Cainiao, STO Express, FedEx Corp., and UPS Inc. have established comprehensive logistics ecosystems that encompass collection, trunking, distribution, and delivery, achieving tight integration and efficient collaboration throughout the entire process.

- **Column 7: Cases Reflecting the Service Capability of Logistics Companies**

Geodis, headquartered in France, offers a wide range of logistics services including sea, air, and land transportation, supply chain management, express delivery, industrial projects, and reverse logistics, covering 166 countries and regions worldwide. With 3 million square meters of warehousing facilities and over 17,000 transport vehicles, Geodis has launched end-to-end services in the cross-border e-commerce sector and is expanding its warehousing operations in collaboration with overseas partners to enhance service capabilities for merchants. Additionally, Geodis's warehousing facilities provide ancillary services such as repackaging, relabeling, quality control, returns, and recalls. The company continuously expands its logistics network, including the development of a road transport network from Southeast Asia to China and offering corresponding customs clearance and compliance services, as well as launching new international routes to improve multimodal transport efficiency.

Maersk, headquartered in Denmark, is one of the largest container shipping companies in the world, with subsidiaries and offices in over 130 countries. Maersk provides comprehensive logistics services for cross-border e-commerce merchants, covering the entire supply chain from collection, trunking, and warehousing to last-mile delivery. The company can customize integrated logistics solutions such as multimodal transport based on merchants'needs. Its globally distributed warehousing facilities

are open to cross-border merchants and offer value-added services such as expedited shipping, cross-docking, and inventory management. Furthermore, Maersk leverages its vast logistics data resources to provide data analysis services, helping merchants understand market trends and consumer demands to support their decision-making.

3. Sustainable Development Capability Indicator Analysis

Sustainable development (ESG)[4] capability primarily assesses logistics enterprises' performance in environmental, social, and governance aspects. The research findings reveal significant disparities in this indicator among the sampled companies, with 78% achieving scores above 90, indicating strong sustainable development capabilities. However, approximately 10% of companies performed poorly. Most logistics enterprises actively take action to address the challenges of climate change and environmental pollution, engage in community building and philanthropic activities, and establish robust risk management systems.

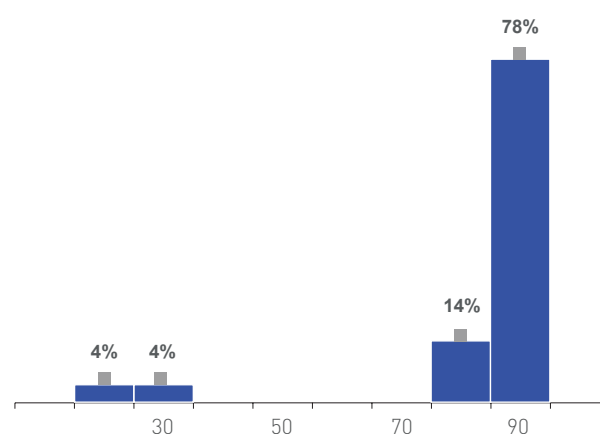Figure 4: Frequency Histogram of Sustainable Development Capability Indicator

4. ESG is an acronym for "Environmental, Social, and Governance" , which measures the sustainability of a company's development or project investment in non-financial dimensions through the three aspects of environment, society, and corporate governance. It was first proposed by the United Nations Global Compact in 2004.

In terms of environmental management (Indicator 3.1), companies in Europe and North America place a greater emphasis on energy consumption, carbon emissions, and packaging recycling compared to some Asian logistics enterprises.

Regarding social responsibility (Indicator 3.2), the vast majority of companies have implemented measures related to philanthropy, employee rights protection, career development, and supply chain governance. Some companies leverage their logistics networks to transport relief supplies during public emergencies, demonstrating their commitment to social responsibility.

For governance (Indicator 3.3), most companies prioritize the establishment of compliance management systems, conducting business activities in strict accordance with the laws and regulations of different countries and industry standards. Some companies have developed comprehensive risk assessment and early warning systems.

- **Column 8: Cases Reflecting the Sustainable Development Capability of Logistics Companies**

Evergreen, headquartered in Taiwan, China, excels in sustainable development. In terms of environmental management, its vessels utilize Nippon Paint's patented technology to reduce friction resistance, thereby lowering fuel consumption and carbon emissions, making cross-border e-commerce transportation more environmentally friendly. Regarding social responsibility, Evergreen provides generous benefits to its crew, safeguarding employee rights and promoting efficient business operations, which indirectly supports cross-border e-commerce. With its large fleet and extensive route network, Evergreen offers a variety of logistics solutions for cross-border e-commerce, strictly enforcing safe vessel operation management to minimize cargo risks. In governance, Evergreen continuously enhances its management standards, ensuring cargo safety during transportation, reducing loss and damage, and delivering quality service to meet diverse customer needs while actively practicing sustainable development principles.

XPO, headquartered in the United States, has launched a new multimodal route combining road and sea transport in Europe. This initiative provides sustainable and efficient transportation solutions for cross-border e-commerce clients, reducing carbon emissions. In terms of social responsibility, XPO utilizes its logistics network to deliver relief supplies during public emergencies while offering real-time traceable services to ensure the safety of cross-border e-commerce shipments. Regarding governance, XPO strictly adheres to regulatory standards in its business operations and has established a risk assessment and early warning system to ensure that cross-border e-commerce operations are legal, compliant, and stable.

4. Innovation Capability Indicator Analysis

Innovation capability primarily assesses the technological and service innovation abilities of logistics enterprises. The research findings indicate that logistics companies actively invest in research and development resources, utilizing cutting-edge technologies such as big data, artificial intelligence, and the Internet of Things to optimize the entire logistics operation process. They continuously explore new service models and business forms, launching customized logistics solutions to meet the diverse needs of different customer groups. Among the 50 sampled enterprises, over 70% have demonstrated a high level of innovation capability.
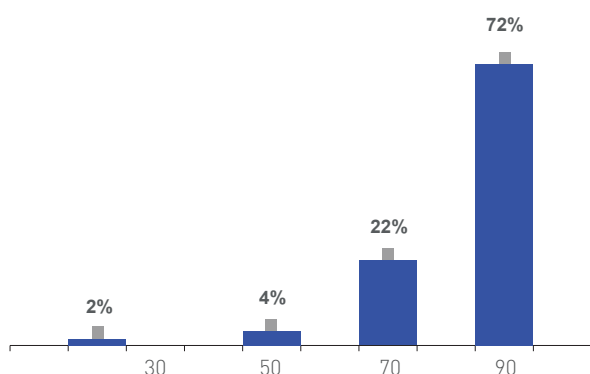

Figure 5: Frequency Histogram of Innovation Capability Indicator

In terms of technological innovation (Indicator 4.1), companies such as Yamato Holdings, Kerry Logistics, GLS Group, and Dachser Group possess significant competitive advantages. They utilize technology to forecast market demand and cargo flow, conduct intelligent route planning, and monitor the status of goods and the operational conditions of transportation equipment in real time.

For service innovation (Indicator 4.2), companies like 4PX, C.H. Robinson, CJ Logistics, and Geopost (French international express parcel company) perform notably well. In addition to conventional logistics services, they offer a range of ancillary services tailored to cross-border e-commerce clients, including after-sales support, repairs, returns, reverse logistics, logistics insurance, supply chain finance, and customs solutions.

> **• Column 9: Cases Reflecting the Innovation Capability of Logistics Companies**
>
> **4PX,** headquartered in China, offers customized supply chain solutions for merchants in the cross-border e-commerce sector, covering procurement management, warehousing management, order management, inventory management, and logistics distribution management. By leveraging digital operations, 4PX optimizes the entire supply chain process from the factory end to the consumer end. Additionally, by utilizing IoT devices, 4PX plans optimal routes based on factors such as road conditions and policies in different countries and regions, enabling real-time information collection on goods during cross-border transport and achieving full visibility throughout the transportation process. In terms of service innovation, 4PX collaborates closely with numerous cross-border e-commerce platforms to provide buyers with customized logistics solutions. For example, they offer low-cost, rapid transport services for small parcels to small merchants and warehousing management and bulk transport solutions for larger sellers. To address the high return rates associated with cross-border e-commerce, 4PX optimizes the return process by

establishing overseas return centers to centralize the handling of returned goods. They also provide cross-border logistics insurance services to ensure the safety of transported goods and offer supply chain finance services to address merchants' cash flow challenges.

Dachser Group, headquartered in Germany, utilizes its logistics information management system to integrate global cross-border e-commerce logistics data. For instance, based on the characteristics of cross-border e-commerce transactions between Europe and Asia, they have established warehouses at key logistics nodes to enhance cargo transfer efficiency. Through IoT technology, Dachser Group monitors real-time temperature, humidity, and location information during cross-border transport to ensure the quality and safety of goods. Furthermore, they provide personalized logistics services tailored to cross-border e-commerce companies, such as offering fast transport channels and priority delivery services for time-sensitive fashion products and professional packaging and installation guidance for large home goods. In terms of reverse logistics, they assist merchants in managing returns from overseas consumers and the recycling of used goods.

Based on the indicator analysis of logistics enterprises, the 50 companies are classified into three categories: **leading, mature,** and **robust** enterprises, as is shown in Figure 6 (enterprises within each category are listed in alphabetical order, without any ranking implied):
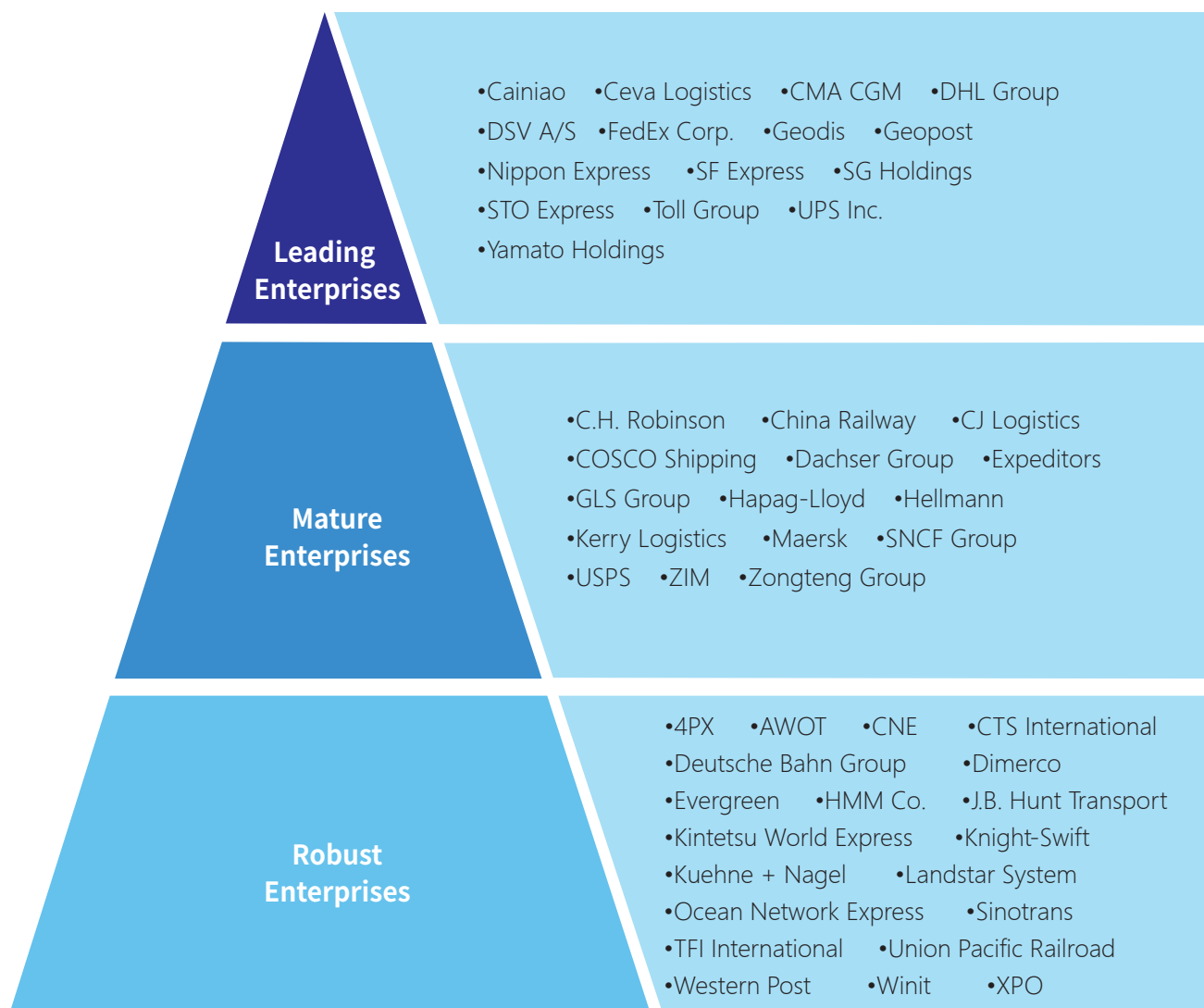

Leading Enterprises
- Cainiao • Ceva Logistics • CMA CGM • DHL Group
- DSV A/S • FedEx Corp. • Geodis • Geopost
- Nippon Express • SF Express • SG Holdings
- STO Express • Toll Group • UPS Inc.
- Yamato Holdings

Mature Enterprises
- C.H. Robinson • China Railway • CJ Logistics
- COSCO Shipping • Dachser Group • Expeditors
- GLS Group • Hapag-Lloyd • Hellmann
- Kerry Logistics • Maersk • SNCF Group
- USPS • ZIM • Zongteng Group

Robust Enterprises
- 4PX • AWOT • CNE • CTS International
- Deutsche Bahn Group • Dimerco
- Evergreen • HMM Co. • J.B. Hunt Transport
- Kintetsu World Express • Knight-Swift
- Kuehne + Nagel • Landstar System
- Ocean Network Express • Sinotrans
- TFI International • Union Pacific Railroad
- Western Post • Winit • XPO

Figure6 : Classification of Cross-Border Logistics Enterprises

(1) Leading enterprises: These companies excel in operation, service, innovation, and sustainable development capabilities. As leaders in the logistics industry, they possess high revenue levels, a strong global coverage network, and comprehensive service capabilities. These enterprises have a wide influence in the industry and continuously drive innovation and progress.

(2) Mature enterprises: These companies lead in at least three of the four primary indicators, hold a certain position in the market, and are continuously expanding their global business scale while improving service levels. They exhibit strong competitiveness in the market, capable of facing various challenges and consistently seeking new breakthroughs and development opportunities.

(3) Robust enterprises: These companies achieve a high level in at least one of the operation, service, innovation, and sustainable development capabilities. They have established a solid footing in the global market, continuously expanding their business scope and enhancing their strengths. Most of these enterprises have strong expertise in specific links of the logistics chain or particular business areas, establishing competitive advantages through this specialization.

(II) Typical Enterprises Examples

This report selects logistics enterprises that demonstrate strong competitiveness across the four dimensions of operation, service, sustainable development, and innovation. Through case studies, it showcases their outstanding practices and significant results, to provide valuable practical models for companies in the industry.

1. Cainiao: Established in 2013 and headquartered in China, Cainiao has built a smart logistics network with end-to-end capabilities, covering over 200 countries and regions globally. The network includes approximately 170 charter flights per week, over 2,700 trunk transport routes, and more than 1,100 warehousing facilities, collaborating with over 100 port service providers to establish an intelligent customs clearance system. Cainiao helps small and medium-sized enterprises engage in cross-border e-commerce with disruptive

solutions like "Global Delivery in 10 Days" and "Global Delivery in 5 Days" . In partnership with AliExpress, Cainiao offers a five-day global delivery service in countries such as South Korea, Spain, the UK, the Netherlands, and Belgium. They also provide services such as free returns, compensation for late deliveries, and multilingual support, enhancing their competitiveness in the international market. Leveraging overseas warehouses, Cainiao has innovated reverse logistics services; when overseas consumers need to return products, they can send items back to local overseas warehouses, which then handle the returned goods through centralized processing, including inspection, classification, and storage.

2. Ceva Logistics: Established in 2007 and headquartered in France, Ceva Logistics is formed by the merger of two logistics giants, TNT Logistics and EGL Eagle Global Logistics. Ceva Logistics offers international logistics solutions covering sea, land, and air, with over 1,500 fulfillment centers across more than 170 countries and regions. The company provides pickup and delivery, warehousing, and sorting services for both B2B and B2C businesses. With an annual air freight volume of 800,000 tons and 1.9 million TEUs of sea freight, Ceva Logistics can deliver fast and reliable cross-border transport services, ensuring timely arrival of goods. Additionally, Ceva Logistics collaborates with logistics companies worldwide for multimodal transport partnerships, such as working with the China-Europe Railway Express to create land-sea, land-air, and rail-to-road projects connecting Eurasia. Ceva Logistics is also actively promoting

sustainable development strategies, having achieved 100% carbon neutrality for its sea freight consolidation services and providing merchants with recyclable and biodegradable packaging materials.

3. DHL Group: Founded in 1969 and headquartered in Germany, DHL holds a leadership position in the global logistics market. DHL's logistics network covers over 220 countries and regions, encompassing more than 120,000 destinations, enabling them to offer global logistics services and deliver goods to nearly every corner of the world. Over the years, DHL has developed the capabilities and expertise to handle a wide range of complex logistics situations efficiently, providing stable and reliable services for different types and scales of logistics operations. DHL boasts a large fleet of transport vehicles and aircraft, including 420 planes and 76,200 operational vehicles, ensuring fast and timely transportation of goods. They can select the most suitable transport methods based on the characteristics and needs of different goods. Utilizing DHL's end-to-end services, shipments from China to Germany can arrive in as little as 4 to 5 working days.

4. DSV A/S: Established in 1976 and headquartered in Denmark, DSV operates over 1,600 offices and logistics facilities in more than 80 countries worldwide. The company offers a variety of transportation methods, including air, sea, and land freight, demonstrating strong capabilities in transport resource integration. DSV maintains excellent partnerships with major shipping companies, enabling it to provide customers with ample cargo space and competitive rates. Additionally, DSV has a vast network of modern warehousing facilities globally, offering a range of value-added services such as storage, sorting, and packaging for cross-border e-commerce enterprises. Beyond logistics and transportation services, DSV collaborates with upstream and downstream partners, including cross-border e-commerce suppliers and retailers, to optimize supply chain processes, such as providing inventory management services for suppliers.

5. FedEx Corp.: Founded in 1971 and headquartered in the United States, FedEx provides a variety of cross-border express services. The company boasts a vast air and ground transportation network, with over 600 cargo aircraft, serving more than 220 countries and regions, and operates numerous logistics hubs, stations, and distribution centers around the world. FedEx continually enhances its service capabilities for cross-border merchants, supporting small and medium-sized enterprises (SMEs) in their business endeavors. The company has published the Cross-Border E-commerce Handbooks to assist merchants in expanding into relevant markets. Additionally, FedEx has launched the "FedEx International Connect Plus" solution for cross-border merchants, offering reliable international express shipping

and specialized customs clearance services. This product includes features such as logistics tracking, recipient notifications, online import/export declarations, and flexible delivery changes, thereby enhancing the visibility, control, and convenience of online orders for cross-border merchants.

6. Geopost: As a subsidiary of the French Postal Group, Geopost is headquartered in France and primarily engages in international letter and parcel express services. The company has established close business collaborations across Europe and various regions worldwide, enabling it to provide efficient logistics solutions for cross-border e-commerce and meet the international shipping demands of e-commerce parcels. Geopost operates over 50 service points across multiple continents, with a particularly dense logistics network in Europe, boasting more than 1,200 logistics points in 28 European countries. This extensive network supports an efficient cross-border logistics and distribution system for the European cross-border e-commerce market. Geopost has focused on enhancing its "last-mile" delivery capabilities in Europe, creating a vast self-pickup network through its own facilities and partnerships, including 110,000 lockers and pickup points. Additionally, Geopost offers specialized services in food delivery, providing professional temperature-controlled transportation and cold chain storage solutions for cross-border e-commerce in fresh food transportation.

7. SF Express: Founded in 1993 and headquartered in China, SF Express is a leading logistics service provider with strong operational capabilities and financial strength. The company has established a logistics network covering over 200 countries and regions globally, with its successful cold chain logistics division, SF Cold Chain, becoming a key differentiating competitive advantage in cross-border e-commerce logistics. SF Express operates its own overseas warehouses, including a facility in Sydney, Australia, that processes over 20,000 shipments daily. Leveraging these overseas warehouses, SF Express provides a comprehensive range of services for cross-border e-commerce, including storage, sorting, packaging, and last-mile delivery. Its large-item cross-border shipping has also made SF Express a carrier for Amazon ShipTrack, offering merchants a new logistics option for first-mile delivery.

8. STO Express: Founded in 1993 and headquartered in China, STO Express operates across more than 220 countries and regions globally. The company partners with platforms such as AliExpress, Amazon, eBay, and Wish to provide cross-border logistics services and has formed strategic collaborations with postal services like Nordic Post, Belgium Post, Malaysia Post, and New Zealand Post to enhance overseas reach for cross-border merchants. STO Express has overseas warehousing and distribution capabilities in regions including Hong Kong, the United States, the European Union, Australia, the

United Kingdom, Thailand, Japan, and South Korea. It has launched dedicated global routes, focusing on key channels between China and the U.S., China and Europe, China and Japan, and China and Southeast Asia. With 22 import-export gateways within China, the company offers comprehensive global coverage for cross-border logistics services. Additionally, STO Express has developed its own cross-border logistics management software, providing customized software services to its upstream and downstream partners.

9. Toll Group: Established in 1888 and headquartered in Australia, Toll Group provides global logistics solutions to over 120 countries and regions, covering land, sea, and air transport as well as warehousing and distribution. It offers end-to-end logistics services for cross-border e-commerce merchants and platforms. Toll Group boasts efficient customs clearance services, with a professional team well-versed in the customs policies and regulations of various countries and regions, particularly in the Australian and New Zealand markets. This expertise enables Toll to promptly adjust its clearance strategies, reducing logistics delays and additional costs for cross-border merchants due to customs issues. In the cross-border e-commerce logistics market, Toll Group offers competitive service rates, especially in Australia and Southeast Asia. For items weighing over 1 kilogram, Toll Group's rates are comparable to local postal small parcel delivery rates and fall below industry averages.

10. UPS Inc.: Founded in 1907 and headquartered in the United States, UPS is one of the world's largest express delivery companies, with a strong advantage in North America. Primarily focusing on land and air transport, UPS provides fast delivery times in key markets such as the U.S. and Europe, meeting cross-border e-commerce customers'demands for timely logistics. UPS also has its own aviation resources and partners with the United States Postal Service (USPS) as a primary air cargo provider, enhancing its market share in cross-border e-commerce logistics. The company is committed to technological innovation, continuously improving the efficiency and quality of its logistics services. UPS has also begun using electric delivery vehicles and other new-energy transportation solutions to reduce the carbon footprint of its logistics operations.

(III) Analysis Results by Core Business

This report categorizes logistics companies'core business areas – trunk transport, small parcel delivery (SPD), and warehousing – based on the characteristics of cross-border e-commerce. Competitiveness for each business type are summarized as follows:

1.Trunk Transport Providers

Trunk transportation refers to the backbone routes within a logistics network. In cross-border logistics, trunk transportation focuses on the long-distance, large-scale movement of goods, utilizing a combination of sea, land, and air transport resources to build logistics channels

connecting various countries and regions. This supports the stability of cross-border logistics supply chains and determines the efficiency of cross-border shipments. Among the 50 sampled companies, 41 list trunk transportation as a primary business. Our research into these companies reveals that those with strong competitive advantages leverage extensive transport routes and substantial carrying capacity to meet cross-border e-commerce demands with faster and more reliable transit times. By achieving economies of scale and optimizing transport modes, these companies reduce costs and improve operational efficiency. These companies typically employ specialized transport equipment, adhere to strict operational standards, and rely on experienced service teams, all of which help prevent damage or loss during long-haul transport. They have established trunk routes not only in established e-commerce markets such as Europe and North America but also in emerging markets like Southeast Asia and Latin America, ensuring timely delivery even during peak seasons. Additionally, these companies actively form close partnerships with local logistics providers and customs agencies to navigate regulatory, cultural, and operational differences across regions, providing comprehensive support and assurance for cross-border e-commerce shipments and continuously enhancing service quality and customer satisfaction.

- **Column 10: Representative Case of Trunk Transport Providers**

  Nippon Express, headquartered in Japan, excels in cross-border e-commerce trunk transportation, having established an extensive transportation network. In Asia, Nippon Express uses Japan as a central hub, connecting to China, South Korea, and various Southeast Asian countries. For example, cross-border e-commerce goods from China are first transported by land to port cities and then shipped to Japan for transfer or distribution. For the European and American markets, Nippon Express operates multiple air freight routes, facilitating the rapid transport of high-value e-commerce products. In Europe, the company collaborates with local logistics enterprises to establish warehouses and distribution centers, enabling swift sorting and dispatching of goods. During peak sales periods, such as the Western Christmas season and China's "double 11 shopping festival" , Nippon Express ensures timely delivery by increasing chartered flights and reserving additional sea freight containers.

2. Small Parcel Delivery Providers

In cross-border logistics, small parcel delivery (SPD) service refers to cross-border express delivery solutions for lighter, smaller packages. This service meets consumer demand for smaller items, reduces logistics costs, and plays a unique and indispensable role in cross-border e-commerce logistics, functioning as the "capillaries" connecting global goods transactions. For emerging cross-border e-commerce platforms and small businesses, SPD service is a critical logistics choice for entering the international market. Among the 50 sampled companies, 21 list SPD as a core business. Research findings indicate that companies with strong competitive advantages in SPD can meet diverse logistics needs through flexible collection and delivery methods. With precise market positioning and efficient service

processes, these companies provide a convenient shipping experience while lowering costs through detailed operations and resource integration. Such companies generally have intelligent order management systems, professional packaging teams, and responsive customer support. Globally, they have established dense logistics networks, adapting service strategies to local market preferences and logistics environments. They also actively build strong partnerships with cross-border e-commerce platforms and suppliers, continually enhancing service offerings. Additionally, they address the varying customs policies and tax regulations across countries, providing comprehensive support for the transportation of small and lightweight cross-border e-commerce shipments.

• **Column 11: Representative Case of SPD Providers**

GLS Group, headquartered in the Netherlands, excels in SPD services for cross-border e-commerce, offering highly flexible collection options. In multiple European cities, GLS collaborates with local convenience stores and community service centers to establish drop-off points, enabling merchants to send parcels conveniently. For high-volume merchants, GLS provides on-site collection services and can customize pick-up schedules based on business needs. In terms of delivery, GLS leverages its extensive European network to reach various communities. For remote areas, GLS partners with local transport companies to ensure parcel delivery. For example, in rural areas of the UK and sparsely populated regions of Northern Europe, GLS coordinates with

local transport partners to offer multiple weekly delivery services. In the North American market, GLS has expanded rapidly by establishing its own distribution centers and partnering with local postal services. GLS also tailors its service strategies to align with consumer preferences in different countries. For instance, in France, there is an emphasis on aesthetically pleasing packaging and delivery etiquette, while in Germany, the focus is on delivery accuracy and timeliness.

3. Warehousing Service Providers

Warehousing in logistics involves the storage, safekeeping, handling, and distribution of goods within dedicated facilities, acting as critical hubs within logistics networks. In cross-border e-commerce logistics, this has led to the development of "overseas warehouses" primarily servicing cross-border merchants. These overseas warehouses are established in destination markets, allowing merchants to transport goods in bulk to these warehouses for temporary storage. Orders are then processed directly from the overseas warehouse, including sorting and dispatch. Among the 50 sample companies, six focus primarily on overseas warehousing: 4PX, Cainiao, CTS International, Western Post, Winit, and Zongteng Group. These companies serve as key hubs for storage and distribution within cross-border logistics, providing robust support for merchants' global operations. Research findings show that competitive overseas warehousing companies meet the growing storage demands of cross-border e-commerce through smart technology and scientific management systems. They commonly feature intelligent storage equipment and refined inventory management

systems. Equipment such as automated sorting robots and vertical shelving systems significantly boosts warehouse utilization and sorting efficiency, reducing labor costs and minimizing the risk of damage. Their inventory management systems not only monitor stock levels in real-time but also use big data and artificial intelligence to analyze and predict warehousing needs, offering personalized services like restocking alerts. In the cross-border e-commerce market, a growing number of logistics companies specialize in constructing and operating overseas warehouses. These companies have built extensive warehousing networks in traditional and emerging global markets, catering to specific storage needs such as temperature and humidity control, cold chain logistics, and oversized item storage. Some companies have also formed strong partnerships with other logistics providers, creating an integrated, one-stop cross-border logistics ecosystem.

• **Column 12: Representative Case of Warehousing Providers**

Zongteng Group, headquartered in China, is a global infrastructure provider for cross-border e-commerce, specializing in warehousing and logistics. The company has integrated intelligent warehousing equipment, including automated sorting robots in its overseas warehouses. These robots use pre-programmed instructions and intelligent recognition systems to quickly and accurately sort cross-border e-commerce goods, handling large volumes of parcels in a short time. This approach is several times more efficient than traditional manual sorting methods. Additionally, the use of vertical shelving significantly

improves space utilization within the warehouses. During peak sales events, such as Amazon's Prime Day, Zongteng Group's overseas warehouses can efficiently handle order surges thanks to these technologies. The company has established an extensive warehousing network in traditional markets like Europe and North America, as well as in emerging markets in Southeast Asia. In Europe, they provide temperature- and humidity-controlled warehouses for electronic products and cold-chain facilities for fresh goods. In Southeast Asia, Zongteng Group tailors its warehouse layout to meet the unique demands of the local e-commerce market.

In summary, this report provides a comprehensive, multi-dimensional analysis of cross-border e-commerce logistics companies. From the study of indicator dimensions to the showcase of representative companies and the exploration of core business classifications, the report illustrates the current landscape and development trends of the cross-border e-commerce logistics industry. Different types of companies leverage their strengths in various business areas, collectively providing a solid foundation for the growth of cross-border e-commerce. Looking ahead, logistics companies should continue to adapt to market changes based on their unique advantages, enhance their service capabilities for cross-border e-commerce, and work together to advance the industry to higher levels.

Appendix 1

Descriptions of Research Subjects and Indicators

(I) List of sample platform enterprises（In alphabetical order）

No.	logistics enterprises	Country/Region	main business industry
1	4PX	China	Overseas Warehouses Service, Small Parcel Delivery
2	AWOT	China	Trunk Transport
3	C.H. Robinson	the United States	Trunk Transport
4	Cainiao	China	Trunk Transport, Overseas Warehouses Service, Small Parcel Delivery
5	Ceva Logistics	France	Small Parcel Delivery
6	China Railway	China	Trunk Transport
7	CJ Logistics	South Korea	Trunk Transport, Small Parcel Delivery
8	CMA CGM	France	Trunk Transport
9	CNE	China	Small Parcel Delivery
10	COSCO Shipping	China	Trunk Transport
11	CTS International	China	Trunk Transport, Overseas Warehouses Service, Small Parcel Delivery
12	Dachser Group	Germany	Trunk Transport
13	Deutsche Bahn Group	Germany	Trunk Transport
14	DHL Group	Germany	Trunk Transport, Small Parcel Delivery
15	Dimerco	Taiwan, China	Trunk Transport
16	DSV A/S	Denmark	Trunk Transport, Small Parcel Delivery
17	Evergreen	Taiwan, China	Trunk Transport
18	Expeditors	the United States	Trunk Transport
19	FedEx Corp.	the United States	Trunk Transport, Small Parcel Delivery
20	Geodis	France	Trunk Transport, Small Parcel Delivery
21	Geopost	France	Small Parcel Delivery

No.	logistics enterprises	Country/Region	main business industry
22	GLS Group	Netherlands	Small Parcel Delivery
23	Hapag-Lloyd	Germany	Trunk Transport
24	Hellmann	Germany	Trunk Transport
25	HMM Co.	South Korea	Trunk Transport
26	J.B. Hunt Transport	the United States	Trunk Transport
27	Kerry Logistics	Hong Kong, China	Trunk Transport, Small Parcel Delivery
28	Kintetsu World Express	Japan	Trunk Transport
29	Knight-Swift	the United States	Trunk Transport
30	Kuehne + Nagel	Switzerland	Trunk Transport
31	Landstar System	the United States	Trunk Transport
32	Maersk	Denmark	Trunk Transport, Small Parcel Delivery
33	Nippon Express	Japan	Trunk Transport, Small Parcel Delivery
34	Ocean Network Express	Japan	Trunk Transport
35	SF Express	China	Trunk Transport, Small Parcel Delivery
36	SG Holdings	Japan	Trunk Transport, Small Parcel Delivery
37	Sinotrans	China	Trunk Transport
38	SNCF Group	France	Trunk Transport
39	STO Express	China	Trunk Transport, Small Parcel Delivery
40	TFI International	Canada	Trunk Transport
41	Toll Group	Australia	Trunk Transport
42	Union Pacific Railroad	the United States	Trunk Transport
43	United States Postal Service	the United States	Small Parcel Delivery
44	UPS Inc.	the United States	Trunk Transport, Small Parcel Delivery
45	Western Post	China	Overseas Warehouses Service
46	Winit	China	Overseas Warehouses Service
47	XPO	the United States	Trunk Transport
48	Yamato Holdings	Japan	Trunk Transport
49	ZIM	Israel	Trunk Transport
50	Zongteng Group	China	Overseas Warehouses Service, Small Parcel Delivery

(II) Descriptions of Indicator System and Indicator of Logistics Companies

Primary Indicators	Secondary Indicators	Tertiary Indicators
1. Operation Capacity	1.1 Operational Performance	1.1.1 Annual operating revenue
		1.1.2 Annual operating revenue growth rate
	1.2 Business Scale	1.2.1 Number of countries/regions served
		1.2.2 Transportation network coverage
2. Service Capability	2.1 Transportation Services	2.1.1 Air transport
		2.1.2 Sea transport
		2.1.3 Rail/road transport
	2.2 Warehousing Services	2.2.1 Warehousing facilities
		2.2.2 Geographic distribution
		2.2.3 Digital and intelligent warehousing
	2.3 End-to-end Services	2.3.1 Collection process
		2.3.2 Trunk transport process
		2.3.3 Sorting process
		2.3.4 Delivery process
3. Sustainable Development Capability	3.1 Environmental Management	3.1.1 Energy conservation and emissions reduction
		3.1.2 Resource utilization and recycling
	3.2 Social Responsibility	3.2.1 Employee rights and development
		3.2.2 Philanthropy and charity activities
	3.3 Governance	3.3.1 Data security and privacy protection
		3.3.2 Risk management
4. Innovation Capability	4.1 Technology Innovation	4.1.1 New technology adoption
		4.1.2 Logistics visibility
	4.2 Service Innovation	4.2.1 Diversified services
		4.2.2 Ancillary/value-added services

1.1.1 Annual operating revenue (in billion USD): the revenue earned by the company during the reporting year from its core business or other services provided.

Source: company financial reports and public information, 2023.

1.1.2 Annual operating revenue growth rate (%): the year-over-year growth rate of the company's operating revenue compared to the previous year.

Source: financial reports and public information, 2023.

1.2.1 Number of countries/regions served: the number of countries/regions covered by the company's logistics services.

Source: company official websites and financial reports, 2024.

1.2.2 Transportation network coverage: regions covered by the company's logistics services, with an assessment of whether the company's services include the following markets: Asia, Africa, North America, Oceania, Latin America, Europe, and Eurasia.

Source: company official websites and financial reports, company financial reports and public information, 2024.

2.1.1 Air transport: one type of service provided by the company. This indicator assesses whether the company offers air transport services.

Source: company official websites, public service policies, 2024.

2.1.2 Sea transport: another type of transport service offered by the company, indicating whether it provides sea transport services.

Source: company official websites, public service policies, 2024.

2.1.3 Rail/road transport: whether the company offers rail or road transportation services.

Source: company official websites, public service policies, 2024.

2.2.1 Warehousing facilities: the company's ownership of storage facilities and provision of warehousing services.

Source: company official websites, public service policies, 2024.

2.2.2 Geographic distribution: geographic coverage of the company's warehousing facilities, specifying if they are located in Asia, Africa, North America, Oceania, Latin America, Europe, and Eurasia.

Source: Company official website, public information, 2024.

2.2.3 Digital and intelligent warehousing: adoption of digital and intelligent technologies in warehousing management for tasks such as storage, handling, sorting, and inventory management. This indicator assesses whether the company employs digital or intelligent technologies in warehousing.

Source: Company official website, public information, 2024.

2.3.1 Collection process: the company's involvement in receiving goods from customers. This indicator assesses whether the collection service is provided independently or in partnership with other companies.

Source: Company official website, public information, 2024.

2.3.2 Trunk transport process: the company's role in long-distance, high-capacity transportation routes connecting major logistics hubs. This indicator assesses whether the company operates trunk transport services independently or through collaboration.

Source: Company official website, public information, 2024.

2.3.3 Sorting process: the process of categorizing, picking, and distributing goods in the logistics process. This indicator assesses whether sorting is handled independently by the company or in cooperation with others.

Source: Company official website, public information, 2024.

2.3.4 Delivery process: the final delivery of goods from a logistics hub or warehouse to the recipient's specified location. This indicator assesses whether the company provides last-mile delivery independently or in partnership with other entities.

Source: Company official website, public information, 2024.

3.1.1 Energy conservation and emissions reduction: the disclosure of the company's practices related to energy-saving and emission reduction. This indicator assesses whether the company's website or ESG report includes information on energy-saving initiatives and achievements.

Source: Company official website, ESG report, 2023.

3.1.2 Resource utilization and recycling: the company's disclosed practices related to resource utilization and recycling. This indicator checks

if the company's website or ESG report provides information on resource utilization and recycling practices and outcomes.

Source: Company official website, ESG report, 2023.

3.2.1 Employee rights and development: the company's disclosure of practices concerning employee rights and development. This indicator assesses whether the company's website or ESG report includes information on employee rights and development initiatives.

Source: Company official website, ESG report, 2023.

3.2.2 Philanthropy and charity activities: the company's disclosure of practices regarding philanthropic and charitable activities. This indicator checks if the company's website or ESG report includes information on these activities.

Source: Company official website, ESG report, 2023.

3.3.1 Data security and privacy protection: the company's disclosure of practices for ensuring data security and protecting privacy. This indicator assesses if data security and privacy protection practices are mentioned on the company's website or ESG report.

Source: Company official website, ESG report, 2023.

3.3.2 Risk management: whether the company discloses disaster warning or emergency preparedness practices. This indicator checks if risk management practices are disclosed on the company's website or ESG report.

Source: Company official website, ESG report,

2023.

4.1.1 New technology adoption: the company's application of technologies such as IoT, AI, big data, robotics, and unmanned delivery. This indicator assesses if the company has adopted any of these technologies.

Source: Company official website, public information, 2024.

4.1.2 Logistics visibility: whether the company uses intelligent logistics systems to achieve logistics visibility. This indicator checks if the company's website offers tracking and inquiry functions for logistics.

Source: Company official website, 2024.

4.2.1 Diversified services: whether the company offers product designs that cater to diverse customer needs. If the company provides multiple service combinations for users to choose from, it is considered to offer diversified services.

Source: company official websites, public service policies, 2024.

4.2.2 Ancillary/value-added services: whether the company extends its services beyond core operations, offering after-sales, repair, return, reverse logistics, logistics insurance/protection, supply chain financing, or customs solutions. Providing any one of these value-added services qualifies as having ancillary services.

Source: Company official website, public information, 2024.

Appendix 2
Data Processing Description

(I) Handling of Missing Values and Outliers

The data for each indicator used in this study primarily comes from the enterprise financial report, as well as from the working group's analysis of texts from enterprises websites, news data, and survey data. In the research framework, missing values are minimal, with only a small portion of tertiary indicator datas missing within operation capability (Indicator 1), accounting for 1% of the data. In such cases, the score for the secondary indicator is calculated as the average of the other available tertiary indicators, with the overall impact of missing values on the study conclusions considered minimal.

Regarding outlier processing, scatter plots and indicator correlation matrices were used to conduct a secondary check on data accuracy, and no significant biases or errors were identified. In terms of data distribution, certain indicators tend to display a long-tail distribution, with the mean noticeably higher than the median. To reduce the disproportionate influence of high values on indicator outcomes, logarithmic transformation (using the formula ln(x+1)) was applied to indicators with high skewness (skewness>2) and high kurtosis (kurtosis>3.5). This transformation, without altering the country ranking, ensures that the indicators remain largely comparable.

(II) Calculation Method for Research Results

Referring to common international research practices, the indicator system at each level adopts a layered additive approach: after determining the dimensionless results of each tertiary indicator, Q_3, the corresponding weights of each indicator within the cross-border e-commerce competitiveness index are applied, and a weighted sum is calculated to obtain the overall research result.

For example, the cross-border e-commerce competitiveness result S_A for logistics enterprises can be obtained by multiplying the results of all 24 tertiary indicators "Q_3" successively by their tertiary indicator weights "ω_3", the weights of the secondary indicators "ω_2" to which they belong, and the weights of the primary indicators "ω_1", and then adding them together. The formula is as follows:

$$S_A = \sum_{i=1}^{i=24} \omega_{1i} * \omega_{2i} * \omega_{3i} * Q_{3i}$$

(III) Data Nondimensionalization Method

Due to the different units and ranges of values among indicators, the variables within indicators are non-dimensionalized to ensure the effectiveness of the synthesized results. This report applies the normalization method, commonly used in international research frameworks, to process continuous variables.

The formula for the competitiveness indicators of logistics enterprises is:

$$Q_{Ai} = \left(\frac{q_{Ai} - q_{i,min}}{q_{i,max} - q_{i,min}} \right) \times 100 。$$

where q_{Ai} represents the original value of the tertiary indicator for cross-border e-commerce in a given logistics enterprises. $q_{i,max}$ represents the maximum value across all logistics enterprises in the sample for the corresponding indicator. $q_{i,min}$ represents the minimum value. Q_{Ai} represents the standardized result after normalization.

Additionally, this report uses the Z-score normalization and other techniques to standardize indicators, achieving results similar to those obtained through the normalization method. Therefore, the results obtained through normalization in this report are considered robust.

Postscript

Cross-border e-commerce is one of the key areas of focus for World Internet Conference(WIC). WIC members encompass enterprises and related institutions from various segments of the global e-commerce industry chain. In June 2023, WIC established a Cross-Border E-Commerce Working Group aimed at uniting forces from all sectors to conduct in-depth research on the industry's current state and challenges, leveraging the WIC platform to deliver outcomes beneficial to industry development.

After the working group was established, Secretary-General Ren Xianliang led a team of experts on visits to Hangzhou, Shanghai, Jinhua, Yiwu, Guangzhou, and Shenzhen to investigate cross-border e-commerce industry practices. The group also studied and summarized the development trends and challenges facing the global cross-border e-commerce regulatory system. During the 2023 Wuzhen Summit, the working group released the *Report on Developments of International Normative Systems on Cross-Border E-commerce*, proposing eight recommendations and three actions to promote the development of cross-border e-commerce and enhance relevant international regulatory frameworks. In April 2024, WIC held the Digital Silk Road Development Forum in Xi'an, Shaanxi, where the working group, after extensive industry consultation, released the *2024 World Internet Conference Collection of Cross-Border E-Commerce Practice cases* .

Given the lack of authoritative publications that objectively reflect the global development landscape of the cross-border e-commerce industry, WIC decided at the beginning of this year to conduct more in-depth research on cross-border e-commerce to create a high-impact international public good. Following investigations into international organizations such as WTO, the UNCTAD, OECD, and the World Bank, a research framework was established.

In April 2024, during the Digital Silk Road Development Forum in Xi'an, WIC organized a seminar on cross-border e-commerce competitiveness research. The seminar brought together over 20 experts with extensive theoretical and practical experience in cross-border e-commerce and competitiveness research from international organizations, universities, research institutions, and leading enterprises. The participating experts unanimously agreed that conducting research on cross-border e-commerce competitiveness would be beneficial to the global cross-border e-commerce industry

and recommended conducting studies from both national and corporate perspectives.

WIC assembled industry experts to integrate insights from field research and seminar discussions. Following detailed data mining and analysis, an initial draft of the report was created. Throughout this process, multiple industry seminars were held to gather and incorporate feedback from relevant experts, ultimately producing three research reports on cross-border e-commerce competitiveness, focusing on countries, platform enterprises, and logistics companies.

During the preparation of this report, we received enthusiastic support from members of the Cross-Border E-Commerce Working Group and industry experts. We hereby extend our heartfelt gratitude to the experts who contributed their wisdom and professional insights to this research.

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This research represents WIC's initial attempt at competitiveness studies. Throughout the process, we recognized the diversity of cross-border e-commerce industries across countries and the complexity of the global industrial landscape, particularly the significant disparities among economies in terms of data foundations and transparency. We will continue to deepen our understanding and knowledge of the industry, consistently producing more in-depth and systematic research outcomes to support inclusive and sustainable global development.

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