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AI Agent Economy: An Intelligent Restructuring Path for Corporate Profit Sharing: Take Cross-Border E-Commerce Supply Chain Optimization as an Example

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Abstract: With the deep integration of artificial intelligence (AI) technology into cross-border e-commerce, the profit sharing mechanism of the traditional cross-border e-commerce supply chain is facing new opportunities for intelligent restructuring. This paper discusses the innovation path to optimize the profit distribution of enterprises under the background of AI agent economy, analyzes the mechanism evolution and implementation of AI-enabled supply chain, explains the benefits and challenges of intelligent distribution model in combination with practical cases such as SHEIN, and looks forward to the future impact of AI on the reshaping of cross-border e-commerce supply chain structure.

Keywords: Artificial intelligence agent economy; Cross-border e-commerce; Profit sharing; Supply chain optimization; Data-driven

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1. Introduction

In recent years, the digital economy has deeply integrated with global trade, and cross-border e-commerce (cross-border e-commerce) has become an important engine to promote the innovation and development of foreign trade [1]. With the progress of information technology and artificial intelligence, the e-commerce industry has entered a new stage from high-speed growth to high-quality development [2]. The so-called AI Agent economy refers to a new economic form with artificial intelligence agents (agents) as the core driving force, and AI agents can perform tasks independently and cooperate with other intelligent agents as a digital labor force, greatly improving production efficiency. In the field of cross-border e-commerce, the wide application of AI technology is reconstructing the matching mode and business logic of the "human-cargo-field," and all aspects are accelerating from manual decision-making to data-intelligent decision-making. For example, a personalized recommendation algorithm realizes the transformation from "people looking for goods" to "goods looking for goods," and improves the transaction matching efficiency and conversion rate [3]. The intelligent customer service and translation system breaks through the language barrier and provides 7 × 24 hours multilingual service, significantly improving the shopping experience of consumers around the world. The profit sharing

of traditional cross-border e-commerce mostly adopts preset rules such as fixed commission or wholesale discount, which makes it difficult to dynamically adapt to the rapidly changing international market, and there are shortcomings in efficiency and fairness. Based on this, the academic community and the industry began to explore the use of AI technology to intelligently restructure the profit-sharing mechanism to promote supply chain synergy and benefit sharing. In recent years, a series of studies have laid the foundation for this: Tian Xiaoyan et al analyzed the digital operation strategy of cross-border e-commerce [4]; Fan Hanxin discussed the motivation and effect of AI application [5]. Meng Tao et al. proposed a path for the digital economy to promote high-quality development of cross-border e-commerce [6]. Zhu Geng *et al.* analyzed the intelligent transformation of the cross-border e-commerce logistics system [7]. Lin Jianhong also made a preliminary discussion on the application of AI in the field of e-commerce [8]. Based on the above work, this paper focuses on the intelligent reconstruction of profit profit-sharing mechanism of the cross-border e-commerce supply chain under the background of AI agent economy. The following sections will discuss the evolution of AI in agent mechanisms (Part 2), the implementation of intelligent profit-sharing mechanisms and value chain optimization (Part 3, including data-driven role), practical case studies (Part 4), and summarize the challenges and prospects (Part 5).

2. AI agent economy and cross-border e-commerce mechanism evolution

The widespread use of AI agents is reshaping the business model of cross-border e-commerce. In recent years, the application of AI in all aspects of cross-border e-commerce has continued to expand: through big data algorithms to simulate human decision-making, personalized recommendation, dynamic pricing and other functions, improve user conversion rate and satisfaction; Intelligent customer service and machine translation replace human labor, realize all-day multi-language service, and reduce communication costs; Machine vision and robot technology are used for commodity auditing, warehousing and sorting, greatly improving the efficiency of logistics operations. These applications of "thinking simulation" and "intelligent substitution" make cross-border e-commerce operations more intelligent, prompting the platform to shift from experience-driven to data-driven.

At the same time, AI agents are changing the role division of traditional agents. In the past, enterprises often relied on local dealers and trade intermediaries to obtain channels and services, and paid a fixed percentage of profits to them according to the contract. Today, platform-based AI systems can automatically match deals and optimize supply chains, allowing sellers to reach consumers around the world without middlemen. Instead of human decision making, intelligent decision agents within the company adjust prices, inventory and marketing strategies based on real-time data. Externally, suppliers, logistics providers and other partners achieve information transparency and efficient docking under the cooperation of AI platforms, no longer just passively accept profit division, but co-create value through data sharing. This change has made the cross-border e-commerce value chain flatter and efficient, and the division of labor and income distribution mechanism of various participants have been adjusted accordingly.

3. Intelligent profit-sharing mechanism and value chain optimization

3.1. Implementation methods and dynamic incentives

The introduction of AI has brought a more flexible and intelligent model for profit sharing of cross-border e-commerce. On the one hand, the platform can use dynamic distribution algorithms to adjust commission ratios and subsidy strategies based on real-time sales data and market conditions to incentivize all parties to optimize performance. For example, the system comprehensively considers product sales, evaluation feedback, inventory costs, and other factors, and in real time increases the share of sellers in hot categories or reduces the commission of dead sales, ensuring that the benefit distribution matches the contribution. On the other hand, the combination of blockchain and smart contracts makes the automatic settlement of multi-party distribution possible [9]. In the supply chain finance scenario, each participant contributes data to the chain, and AI automatically calculates and allocates revenue according to preset rules, ensuring

a transparent and efficient profit distribution process. Through these means, the division mechanism can respond dynamically to market changes, breaking through the limitations of traditional rigid distribution.

3.2. Value chain synergy and equity

An intelligent distribution mechanism helps to improve the overall synergy of the supply chain. Through revenue-sharing contracts and other forms, suppliers and retailers are no longer zero-sum games, but share risks and incremental benefits, thereby incentivizing cooperation to improve efficiency. For example, under a reasonable revenue-sharing contract, the retailer will increase the order in exchange for lower prices from the supplier, and the supplier will take the initiative to increase the supply flexibility in order to share the sales results. AI decision support makes this process more sophisticated: data analysis quantifies the contribution of each link, ensuring that "more work, more pay." Studies have shown that in the cross-border e-commerce environment, logistics service quality and price fairness will significantly affect consumers' repeated purchase intention [10]. The platform is therefore data-driven to accurately measure and reward the value creation of all parties, not only improving efficiency, but also improving the fairness of distribution. It is worth mentioning that consumers generally have a high acceptance of AI technology in e-commerce [11]. As long as the rules are transparent and fair, stakeholders are generally willing to trust decisions made by AI, thus forming a virtuous circle.

3.3. Role of data intelligence

Data and algorithms play a key role in the new distribution system. AI uses massive data for trend prediction and decision optimization, greatly improving the accuracy of allocation decisions. SHEIN reduced the prediction error of the clothing supply chain to less than 8% through the AI system [12], and "data decision-making" effectively reduced the inventory overstock and out-of-stock losses. For another example, the platform's intelligent analysis can identify efficient channels and products in real time, adjust resource investment in time, and make profit distribution more in line with market hot spots. Digital technology and capabilities have become key resources for enterprises to carry out cross-border e-commerce business [13]. The application of data intelligence makes the profit distribution of cross-border e-commerce move from static to dynamic, from science experience, and creates a greater win-win space for all links of the value chain.

4. Case study: SHEIN supply chain optimization and distribution innovation

SHEIN is a cross-border fast fashion e-commerce enterprise that relies on AI to achieve rapid rise, and its model well reflects the application of an intelligent separation mechanism. The company has established an extremely flexible supply chain system, with almost zero inventory operation through on-demand production of small orders. In 2022, SHEIN achieved operating income of 22.7 billion US dollars and net profit of over 700 million US dollars, making profits for many consecutive years [14]. Agile supply chains bring significant advantages such as more potential revenue, higher capital turnover, and lower inventory costs. On this basis, SHEIN deeply binds its interests to suppliers through data empowerment and benefit sharing: it provides interest-free loans to core suppliers with the top 10% annual performance for equipment upgrading, and establishes joint innovation plans with several fabric factories. These measures are equivalent to transferring some profits to upstream partners to improve their capacity and quality, in exchange for a significant increase in the overall efficiency and response speed of the supply chain to achieve a win-win situation.

In addition, in the front-end design and marketing links, SHEIN also introduced an AI-enabled creative sharing model. The platform recruits thousands of independent designers around the world, provides them with AI design tools to help them create new products, and then rewards them with 5% to 15% of the sales of their designed products. Through this "Co-create + share" program, designers' ideas can be quickly transformed into best-selling products and share sales revenue, while SHEIN gets a steady stream of diverse styles to meet the diverse needs of consumers around the world. This approach brings external creators into the ecosystem and shares the profits, greatly enhancing SHEIN's product innovation and user engagement, and building a solid barrier to competition. The SHEIN case shows that the combination

of AI technology and an intelligent separation mechanism can effectively improve the efficiency and resilience of cross-border e-commerce supply chains and stimulate broader value creation.

5. Conclusion and prospect

It can be seen from the above research that the profit-sharing mechanism of cross-border e-commerce supply chain under the AI agent economy is developing in a more intelligent, efficient, and fair direction. The application of artificial intelligence has greatly improved the value creation ability of multilateral cooperation, and all links can make dynamic decisions based on data, taking into account efficiency and fairness. Case studies also demonstrate the practical benefits of the smart distribution model: Whether it is supply chain collaboration or creative co-creation, AI enablement helps companies and partners share results and enhances competitive advantage. However, we should also recognize that this model still faces challenges such as data privacy, security compliance, technology dependency, and organizational synergy. In the absence of reliable data governance and risk control, intelligent distribution may be constrained by a crisis of trust [15]. Therefore, while embracing technological innovation, enterprises need to improve supporting governance mechanisms, ensure transparent and fair algorithmic decision-making, and strengthen trust-building with partners.

Looking ahead, artificial intelligence is expected to further reshape the supply chain ecology and benefit distribution pattern of cross-border e-commerce. On the one hand, with the development of technologies such as autonomous agents, supply chain collaboration may evolve into real-time negotiation between multiple AI agents to achieve a more autonomous value network. On the other hand, the distribution of profits will be increasingly finely based on the actual value contribution of each party. It is foreseeable that advances in AI will continue to give rise to new models and opportunities for enrichment, but at the same time, regulatory frameworks and ethical norms need to follow in time. Only by making full use of the potential of AI and effectively managing risks can cross-border e-commerce enterprises achieve sustainable development in global competition and share the dividends brought by intelligence.

Disclosure statement

The author declares no conflict of interest.

References

[1] Chen Q, Kong L, 2023, Evolution and Prospect of China's New Cross-border E-commerce Business in the New Era. Reform and Strategy, 39(6): 79–90.

[2] Xiong Y, 2023, Study on High-quality Development Path of E-commerce Industry in the New Era. International Public Relations, 2023(21): 145–147.

[3] Li J, 2019, Personalized Recommendation algorithm of information of cross-border E-commerce Guide Platform based on Big Data. Science Technology and Engineering, 19(14): 280–285.

[4] Tian X, Huang D, Zhang T, 2021, Analysis of Intelligent Operation Strategy of Chinese Cross-border E-commerce Enterprises Under the Background of Digitalization. Business Economics Research, 2021(8): 152–155.

[5] Fan H, 2021, Research on Motivation Analysis and Effect Evaluation of Application of Artificial Intelligence in Cross-border E-commerce, thesis, South China University of Technology.

[6] Meng T, Wang C, Fan P, 2022, Research on High-quality Development Countermeasures of Cross-border E-commerce from the Perspective of Digital Economy. International Trade, 2022(10): 60–67.

[7] Zhu G, Zhu Z, Zhu Y, et al., 2018, Theory and Case Analysis of Cross-border E-commerce Logistics System Construction Under the Background of Artificial Intelligence. Logistics Engineering and Management, 40(11): 31–35.

[8] Lin J, 2019, Analysis on the Application of Artificial Intelligence Technology in the Field of E-commerce. China Business Theory, 2019(2): 19–20.

[9] Li X, Lu M, 2023, Research on the Application of Blockchain Technology in Supply Chain Finance Based on the Context of Cross-border E-commerce. Finance Theory and Practice, 2023(6): 51–59.

[10] Do Q, Kim T, Wang X, 2023, Effects of Logistics Service Quality and Price Fairness on Customer Repurchase Intention: The Moderating Role of Cross-border E-commerce Experiences. Journal of Retailing and Consumer Services, 70: 103165.

[11] Wang C, Ahmad S, Ayassrah A, et al., 2023, An Empirical Evaluation of Technology Acceptance Model for Artificial Intelligence in E-commerce. Heliyon, 9(3): e18349.

[12] Tang Fei. SHEIN's Industrial Revolution and Business Philosophy of Digital Reconstruction [EB/OL]. Suying.com, 2025-02-16 [citation date 2025-03-27].

[13] Elia S, et al., 2021, Resources and Digital Export: An RBV Perspective on the Role of Digital Technologies and Capabilities in Cross-border E-commerce. Journal of Business Research, 132: 158–169.

[14] Dong J, 2023, Dismantling the SHEIN Model: The Symbiotic Relationship Between "Soft" and "Hard," 21st Century Business Herald, 2023-09-07.

[15] Valarezo Á, et al., 2018, Drivers and Barriers to Cross-border E-commerce: Evidence from Spanish Individual Behavior. Telecommunications Policy, 42(5): 464–473.

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