

Discrimination of Evolution Models of Cross-border E-commerce Platforms from the Perspective of Value Competition

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Abstract: With the booming development of cross-border trade, cross-border e-commerce platforms are playing an increasingly important role in promoting global trade. This article, starting from the perspective of value competition, explores the evolution model of cross-border e-commerce platforms, analyzes the strategic choices and influencing factors of the collaboration process between enterprise think tanks, information service platforms, and trading platforms. The research found that the synergistic excess gain, synergistic gain distribution coefficient, collaborative effort level, and the initial collaboration ratio of both parties have significant impacts on strategic choices. Meanwhile, the issue of information asymmetry hinders the construction of information service collaboration mechanisms. This article aims to provide theoretical reference and practical guidance for the development of cross-border e-commerce.

Keywords: Evolution models; cross-border e-commerce platforms; value competition

1. Introduction

As a new form of international trade, cross-border e-commerce is characterized by its globality, instantaneity, virtuality, and convenience. These features make cross-border transactions more efficient and convenient, but they also bring about issues such as information asymmetry, high logistics costs, and difficulties in returns and exchanges. With the increasing complexity of cross-border transactions, the importance of information resources and information services has become increasingly prominent. As a bridge connecting buyers and sellers, cross-border e-commerce platforms not only need to provide effective information services, but also need to find their own evolution paths in value creation and competition.

2. The evolution of cross-border e-commerce in the value chain

2.1. Value Chain Theory

The Value Chain theory, first proposed by Michael Porter, a distinguished scholar from Harvard Business School, in his 1985 book "Competitive Advantage," provides a unique perspective for understanding the process of enterprise value creation. The core of this theory lies in constructing a value chain that encompasses the entire value creation process, starting from various aspects of a company's design, production, sales, and logistics.

In Porter's "Value Chain Analysis Model" (as shown in Figure 1), corporate activities are divided into two main categories: primary activities and support activities. Primary activities cover logistics, production, and after-sales services, which are key links directly involved in the realization of product value. Support activities, on the other hand, include business infrastructure construction and research and development, providing necessary support and safeguards for primary activities. While traditional cross-border trade involves numerous import and export processes that cannot be shortened, primarily relying on the B2B model, which is often lengthy, complex, and costly, cross-border e-commerce aims to minimize or transform these processes by employing models such as B2C and M2C. To reduce intermediate costs, the establishment of a comprehensive business platform directly targeting end consumers, combined with information technologies like big data, can significantly streamline the value chain in cross-border e-commerce across procurement, production, processing, and sales. This approach drastically lowers costs for enterprises and maximizes their value-added potential.

2.2. Economic environment analysis of cross-border e-commerce

First, since the World Economic Organization officially included the Renminbi (RMB) in the Special Drawing Rights (SDR) in 2015, the RMB has become the fifth currency, after the Euro, US Dollar, British Pound, and Japanese Yen, that has significant influence on global trade. Despite the volatility in cross-border RMB settlements, the overall trend is upward. As part of a country's foreign exchange reserves, the inclusion of the RMB in SDR not only elevates its status in the international currency field but also signifies that the RMB has truly become an international currency, marking an important milestone in the internationalization of the RMB. Cross-border e-commerce payments are closely linked to currency transactions. The increase in the RMB share in SDR has promoted the widespread use of RMB settlements, effectively eliminating exchange rate risks, helping companies avoid uncertainties caused by exchange rate fluctuations in the international market, contributing to the construction of a more stable cross-border trade system, and significantly enhancing the convenience of cross-border settlements.

Second, from the perspective of demand, due to the impact of economic conditions, consumers are increasingly valuing the economic benefits of goods. While pursuing cost-effectiveness, they also attach great importance to the transparency of product information, which is precisely met by online shopping. Similarly, for the international market, influenced by the European debt crisis and regional economic crises, the demand for cross-border goods has been growing. Against this backdrop, various countries have introduced various economic policies to promote the development of cross-border e-commerce. On the supply side, the strong growth in demand will lead to a significant

influx of capital into cross-border e-commerce, inevitably resulting in continuous investment in supply. The competitive elements of cross-border e-commerce have become diversified, shifting from pure commodity competition to supply chain competition, and even including service competition, product after-sales service, and other factors. All these factors will bring about synchronized growth in supply and demand, jointly driving economic development.

3. Game Analysis of Enterprise Think Tanks and Public Information Service Platforms

In cross-border e-commerce, there exists a close relationship of cooperation and competition between enterprise think tanks and public information service platforms. Enterprise think tanks collect and analyze information provided by public information service platforms to support the formulation of strategies and decision-making for enterprises. Meanwhile, public information service platforms attract more corporate users by providing high-quality information services.

3.1. Analysis of Game Process

In the game process between enterprise think tanks and public information service platforms, both parties need to consider their own interests and demands. Enterprise think tanks aim to obtain more information to support the strategies and decision-making of their enterprises, while public information service platforms strive to provide more information services in order to gain greater revenue.

Assuming that the expected benefits of collaboration in selecting public information service platforms are

$$U_2 = P(\alpha_i) \frac{Q-S}{L} \quad (1)$$

The expected benefits of choosing no synergy in the public information service platform are

$$U_2 = P(\alpha_i) \frac{Q-S}{L} + P(\gamma_j) = 0 \quad (2)$$

When $U_2 - Q = 0$ and S is large enough and L is small enough, i.e., the public information service platform considers corporate think tanks to be high-quality think tanks with strong information service capability, and the cost of disguise and risk of poor-quality corporate think tanks is smaller compared to the benefits derived from the public information service platform synergy.

To achieve a balance and mutual benefit between both parties, enterprise think tanks and public information service platforms need to formulate different strategies. Firstly, as the information hub of cross-border e-commerce platforms, enterprise think tanks need to collect, integrate, and analyze various information to provide strategic consultation and decision-making support for the platforms. In the process of collaboration with enterprise think tanks, public information service platforms, along with information service platforms and trading platforms, need to pay attention to factors such as collaborative excess gains, collaborative gain distribution coefficients, collaborative effort levels, and the initial collaboration ratio of both parties. These factors jointly influence the strategic choices and evolution paths of all parties.

Secondly, information asymmetry is a significant challenge in the collaboration process. To address this issue, the platform needs to establish an effective information sharing and communication mechanism to enhance the transparency and accuracy of information. At the same time, the platform also needs to pay attention to the design of incentive mechanisms for agent trading platforms, ensuring that they can exert genuine effort and drive the construction of collaborative mechanisms as well as the evolution of the platform.

3.2. Synergy of value competition

Currently, a corporate think tank and public information service platform have been established in the cross-border e-commerce sector. One notable example is the cross-border e-commerce policy database, which gathers a vast amount of policy information related to import and export cross-border e-commerce. These information sources are primarily from public information service platforms such as the official website of the General Administration of Customs and platforms established by local governments. To serve users more effectively, these platforms also utilize social networks to interpret and analyze the released policy documents.

However, due to differences in positions and access to information between the two parties, there exists a phenomenon of information asymmetry. Specifically, it is often difficult for public information service platforms to accurately understand the true level of information services provided by corporate think tanks, the quality of their output, and the richness of their information resources in the field of cross-border e-commerce.

Therefore, when facing information provided by corporate think tanks, public information service platforms need to carefully screen the authenticity of these information to determine whether to establish a cooperative relationship with them. If the signals transmitted by corporate think tanks are correctly recognized by public information service platforms, choosing to cooperate with them will bring additional benefits. Conversely, if the signals are misidentified, it may lead to resource losses and financial waste.

For cross-border e-commerce corporate think tanks, transmitting true information requires a certain amount of human and material resources. However, if they fail to transmit it, they may lose the opportunity to collaborate with the government. Whether transmitting true signals or false signals, there is a certain possibility of achieving collaboration with public information service platforms, thereby obtaining synergistic benefits. Specifically, when to provide true information and when to provide false information are the main considerations for corporate think tanks with poorer quality. The signaling game aptly illustrates this process. In other words, corporate think tanks will choose their strategies based on their actual situation, weighing the benefits and costs of sending signals. Simultaneously, public information service platforms will also consider which specific actions are most beneficial to them based on the balance of signals sent by corporate think tanks,

deciding whether to collaborate or not. Against the backdrop of information asymmetry, the signaling mechanism has become an indirect but crucial way that influences the development of participants, playing a vital role in the future development of both enterprises and governments.

4. Conclusion

From the perspective of value competition, this article explores the evolution model of cross-border e-commerce platforms. By analyzing the game process between enterprise think tanks and public information service platforms, as well as the construction process of information service collaboration mechanisms, this article proposes corresponding solutions and suggestions. In the future, with the continuous development of cross-border e-commerce and the continuous advancement of information technology, the evolution model of cross-border e-commerce platforms will continue to evolve and improve.

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