

The Development Path and Pricing Mechanism of B2B Cross-border E-Commerce Platform

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Abstract: B2B cross-border e-commerce platform replaces the traditional role of trade broker in international trade to some extent, and functions as a trade intermediary platform. However, unlike the general trade broker, it does not aim at earning trade spread, but achieves its benefits by charging lower compensatory costs and higher value-added costs. Although cross-border e-commerce platform can reduce the cost of information collection between buyers and sellers, it can increase the cost of information screening and increase the quality risk of buyers and sellers. Therefore, its future development path needs to be oriented to reduce the cost of information screening between buyers and sellers, and take a more professional development path. The degree of specialization depends on the trade-off between the costs of information screening. To achieve this path, cross-border e-commerce platforms should have different pricing strategies for users with different needs, with a higher fixed cost and higher marginal cost for those with lower demand.

Keywords: B2B, cross-border e-commerce platform, development path, pricing mechanism

I. INTRODUCTION

Currently there are two types of cross-border e-commerce platforms functioning in cross-border e-commerce: B2B cross-border e-commerce platform, represented by Alibaba International Station; B2C cross-border e-commerce platform, represented by Lanting Market [1,2]. In the cross-border e-commerce trade of China, B2B has the absolute advantage, so the research on the benefits coordination mechanism between the former B2B cross-border e-commerce platform and cross-border e-commerce supply chain has more extensive practical significance. However, from the current research, there are two problems to be solved: One is the functional orientation and development path of B2B cross-border e-commerce platform. The other is the pricing mechanism of B2B cross-border e-commerce platform.

II. FUNCTION AND PRICING STRATEGY OF CROSS-BORDER E-COMMERCE PLATFORM

The development of new trade theory regards heterogeneous enterprises as the object of study, and it analyses the requirements for enterprises to export, that only those enterprises with higher efficiency will export because of the higher costs involved in international trade [3, 4]. But the emergency of trade brokers has somewhat eased the efficiency constraints on exports. This is because

trade intermediaries (including exporters and importers) have more specialized trade knowledge and more comprehensive supply and demand information, and can achieve economies of scale to some extent, thus reducing the cost of doing business, so that less efficient firms can also participate in international trade through trade intermediaries.

At the same time, in the context of cross-border e-commerce platform links buyers and sellers within different countries through information technology [5]. As compared with trade brokers, its lower entry threshold can attract more manufacturers than the trading middlemen, and convenient search methods will make it easy and fast for buyers to find the products they need. Therefore, as similar to the traditional trading intermediaries in international trade, cross-border e-commerce platforms also act as trading intermediaries. However, cross-border e-commerce platforms are less involved in the trading process between buyers and sellers, and the buyers and sellers are more likely to conduct their own transactions. So, if the purpose of trading between traders is to earn a middle price difference, then the purpose of B2B cross-border e-commerce platform is only to provide a platform form both buyers and sellers to trade, so it plays more of a trade intermediary platform, in other words, it is not a typical "business person" role, but rather a market platform to a certain extent.

How can cross-border e-commerce platform be profitable as a trade intermediary platform? Basically,

due to the appearance of cross-border e-commerce platform, on one hand, the cost of information search is greatly reduced, and the information which was previously held by the trade brokers can now be realized by the platform's search functions, On the other hand, cross-border e-commerce platform can use its own technical and data advantages to customize special information release activities for buyers and sellers, so that the product or demand information can be satisfied in the very first time, and the profit and utility of buyers and sellers can be improved, Then cross-border e-commerce can get some benefits from this upgrading, which we call value-added costs.

As a cross-border e-commerce platform, the main advantage of the platform is that a large number of participants can make use of its information and data advantages, So the first step is to attract enough participants, which means that cross-border e-commerce platforms cannot set compensatory costs too high, or else they will make that platform less attractive, At the same time, the cross-border e-commerce platform can formulate a higher value-added cost. As the value-added cost is generally chosen by both buyers and sellers themselves, the platform has certain negotiating advantages and can charge higher fees, therefore, as an intermediate trade platform; cross-border e-commerce can charge a lower compensatory fee and a higher value-added cost.

III. THE SHORTAGE AND DEVELOPMENT PATH OF CROSS-BORDER E-COMMERCE PLATFORM

Cross-border e-commerce platform, as a trade intermediate platform, can reduce the cost of information collection between buyers and sellers, but on the other hand, it also increases the cost of information screening between buyers and sellers, although it can provide value-added services to both buyers and sellers to a certain extent, it does not take risks for both buyers and sellers. Therefore, although cross-border e-commerce platform has achieved a reduction in trade costs, the reduction of such costs is at the expense of higher quality risks, at the beginning of the development of e-commerce platform, the cost savings cannot offset the increased risk to both buyers and sellers, so the development speed is slower. But as the cross-border e-commerce platform has deepened its understanding of these issues, through a series of mechanisms such as third-party payment platform, also to a certain extent, the return and exchange system, the quality certification and the margin system have reduced the selection risk, which has enabled the cross-border e-commerce platform to develop rapidly and largely replaced the

role of trade middleman in traditional international trade.

Therefore, the future development of cross-border e-commerce platform is bound to be in the direction of reducing the risks to be chosen by both buyers and sellers. There are two ways to reduce the risks to be chosen: One is to reduce the choice of non-professional subjects, such as domestic e-commerce and foreign e-commerce, to reduce the risk of selection through the choice of subject specialization, which is actually a completely online B2B trading model. The other is to increase the degree of specialization to help buyers and sellers identify information. This is actually to reduce the selection risk through the platform's own professional way, but either way, it means the platform's entry threshold will be raised, thus to a certain extent, increasing the cost of cross-border e-commerce platform information collection. In summary, the future equilibrium depends on the trade-off between the cost of collecting information and the cost of screening information on cross-border e-commerce platforms. On the other hand, the current non-specialized platform can develop in the direction of specialization, and the specialized platform can lower the entry threshold to a certain extent and reduce the cost of information collection.

IV. ANALYSIS OF PRICING MECHANISM OF CROSS-BORDER BUSINESS PLATFORM

In the above analysis, we have pointed out that the future path of cross-border e-commerce platform is to reduce the cost of information screening between buyers and sellers. This makes cross-border e-commerce platform face two dilemmas: is it to retain high-demand consumers who demand more specialization, or to reduce specialization in order to maintain the size of users. Obviously, for high-demand consumers, if the cost of screening cross-border e-commerce platforms is too high, it may be more profitable for them to build their own e-commerce platforms, but this also caused the cross-border e-commerce platform revenue decline and the supply chain damage, so cross-border e-commerce platform needs to find a reasonable pricing mechanism to promote the sustainable operation of cross-border e-commerce supply chain [6, 7].

Assuming that cross-border e-commerce platforms provide services to both groups of users, $i = 1, 2$, the number of services provided to each type of unit user is β_i , the number items purchased (or sold) for each category of user is q_i , then the total consumption of the two groups of users for the services provided by cross-border e-commerce platforms is: $Y = \beta_1 q_1 + \beta_2 q_2$. U_i utility from Users from Services Provided by Cross-border E-commerce,

for convenience, hypothesis, $U_1(q_1)=U(q)$, $U_2(q_2)=\lambda U(q)$, $\lambda > 1$, this means that user 2 is a high-demand user, as a result, the service centers of cross-border e-commerce platforms can be more effectively utilized.

Assuming that the cost of cross-border electricity supplier platform is $C=(\theta-e)Y$, among them, θ is the efficient type of cross-border e-commerce platform, which is endowed by natural exogenesis, e is the level of efforts of the cross-border e-commerce platforms. For the users, it can pay a fixed cost f to build its own cross-border e-commerce platform, and he has to pay a constant marginal cost a , generality, we set up for the less demanding user 1, its utility of constructing a new cross-border e-commerce platform is no more than 0, namely:

$$U_1^* = \text{Max}(U(q) - f - aq) \leq 0$$

So Low Demand Users Are Not Motivated to Build New E-commerce Platform; but for High Demand User 2, under certain conditions, it is motivated to build a new cross-border e-commerce platform, which makes the existing cross-border e-commerce supply chain unsustainable.

Suppose there is some kind of non-linear pricing scheme where cross-border e-commerce platform sets different pricing options for users with different needs, which is $\{(R_1, q_1), (R_2, q_2)\}$, the income thus obtained is: $R(q_1, q_2) = \beta_1 R_1 + \beta_2 R_2$.

Under the above assumptions, we can get the surplus (or social welfare) of the cross-border e-commerce supply chain as:

$$W = U(q_1) + \lambda U(q_2) - C = p_1 q_1 + \lambda p_2 q_2 - c(q_1 + q_2) \quad (1)$$

For the sake of simplicity, we assume that both users are cross-border e-commerce operators and that the utility of the two users is that their earnings are profits $\pi = pq - cq$, among them C is total marginal cost of services provided for cross-border e-commerce production and use of cross-border e-business platforms. Further assuming that the final sale price of the product is fixed, all are p , then $p_1 = p + c_1$, $p_2 = p + c_2$, price for different users after payment of cross-border e-commerce platform services.

When the objective function of cross-border e-commerce platform is to maximize (1), according to FOC conditions, we have

$$\begin{aligned} c_1 &= c - p \\ c_2 &= \frac{1}{\lambda} c - p \end{aligned} \quad (2)$$

In the case (2), because of $\lambda > 1$, so we have:

$$c_1 = c - p > c_2 = \frac{1}{\lambda} c - p \quad (3)$$

Therefore, cross-border e-commerce platforms should charge a lower marginal fee for higher-demand users, and a higher fixed fee should be charged to those high-demand users in order to prevent low-demand users from impersonating high-demand users.

V. SUMMARY AND POLICY RECOMMENDATIONS

Cross-border e-commerce platforms should have different pricing strategies for users with different needs, a higher fixed and lower marginal costs for those with higher demand, and a lower fixed and higher marginal costs for those with lower demand. For those users with lower demand, a lower fixed cost and a higher marginal cost should be established. This is in fact in line with the way forward for cross-boundary e-commerce platform we have analyzed above. In the future development process, cross-border e-commerce platforms need to weigh the cost of information collection and information screening reasonably to determine the degree of specialization, however, if a higher entry threshold is set to reduce screening costs, the information and data advantages of cross-border e-commerce platforms will be sacrificed, But those who need more will try to meet their needs by building their own cross-border e-commerce platform in order to reduce the cost of information gathering without specialization. However, differentiating between the two types of users would avoid the contradiction between the two costs.

First of all, we build a precision matching and a shopping guide recommendation system. By accumulating big data and information advantage, we can locate the exact demand of both buyers and sellers, and compare them with each other on the basis of diversification, Guided by the way of price gradient, customers can be selected, and combined with the culture of the target country, the products with high praise and characteristic can be recommended. In particular, attention should be paid to removing language barriers and designing different payment methods for customers in different regions, assisting buyers and sellers to pay for the goods, reducing the selective burden of buyers and sellers and reducing their time costs.

Secondly, establish and improve the relevant quality management system. The full implementation of quality management should be carried out in two ways: On the one hand, the relationship between cross-border e-commerce enterprises and regulatory authorities should be properly handled. Cross-border e-commerce enterprises should set up an independent product quality regulatory body or outsource to a third-party service agency so as to provide independent opinions on the quality of cross-border

e-commerce enterprises, reduce the decision-making risks of senior managers and improve the scientificity of decision-making. On the other hand, we should improve the internal quality management system as soon as possible, hire experts and scholars, conduct internal quality management training, establish perfect system, determine strict implementation standard, and design a suitable internal quality management system.

Finally, we will strengthen the overall control of the cross-border e-commerce supply chain link; each element carries on the systematic carding, and regards the various businesses inside the platform enterprise and between the node enterprises as a whole, Through the control of information flow, logistics and capital flow, all activities in the supply chain can be seamlessly connected. For the post-entry cross-border e-commerce platform, it is necessary to deepen the operation in a specific market segment, especially to refine the supply chain with limited resources. Can also rely on the free trade zone and free trade zone models; properly carry on product's self-support.

In short, B2B cross-border e-commerce platform has replaced the traditional role of trade middleman in international trade to some extent, and plays the function of trade intermediate platform, unlike general traders, however, it does not aim to earn a trade spread, but rather to realize its benefits by charging lower compensatory costs and higher value-added costs. Although cross-border e-commerce platform can reduce the cost of information collection between buyers and sellers, it has increased the cost of information screening and increased the quality risk of buyers and sellers, therefore, its future

development path needs to be oriented to reduce the cost of information screening between buyers and sellers, and take a more specialized development path. The degree of specialization depends on the trade-off between the cost of information collection and the cost of information screening in cross-border e-commerce platforms.

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