Improvement of Cross-border Bonded Goods Supply Chain by Optimizing Operational Methods

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Abstract. Based on the existing mode of the supply chain of imported bonded commodities for cross-border e-commerce enterprises, this paper studies and discusses the online operation method of bonded commodities, warehousing management, logistics and transportation, as well as consumer satisfaction, and draws on the operation mode of the supply chain of domestic general trade goods, and tries to make innovations to the operation and management of the whole cross-border bonded commodities supply chain based on this model. The authors of this paper found that updating the sales strategy and cooperation between the supply chain could help merchants accurately predict the positioning of commodities and market demand, which is helpful for cross-border e-commerce enterprises to grasp the market trends and consumption trends and avoid the inventory backlog in bonded warehouses. In addition, the innovation of bonded merchandise sales could increase the consumer attention of different groups of consumers, accelerate the circulation of goods and increase the sales of goods. It helps cross-border e-commerce enterprises to enhance their market competitiveness. Finally, merchants, through the management of logistics and transportation, through cooperation and data sharing, can better reduce logistics and transportation costs and rapid delivery.

Keywords: Cross-border E-commerce, Bonded Goods, Operations, Sales Strategy, Logistics and Transportation.

1. Introduction

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In the current social economy and the continuous development of science and technology, people's payment methods and logistics, etc., have become more convenient, and the traditional international trade operation mode has yet to meet the development of the times [1]. With the Internet technology and people's ever-changing consumer demand support, China's cross-border e-commerce industry is booming, ushered in the industry's rapid development of the golden period, and gradually formed, such as the international postal service, international express delivery bonded warehouses and other supply modes. Among them, the bonded warehouse stocking supply mode has gradually become the main choice of cross-border e-commerce supply mode due to its advantages such as speed and safety, high timeliness, etc., and it is also one of the key links in the process of cross-border e-commerce industry development [2]. However, due to the increase in the complexity of the supply chain, the supply chain of imported bonded goods involves several links, including procurement, warehousing, logistics, customs clearance and so on. The complexity of these links makes bonded warehouse supply chain optimization critical. In addition to the changes in customer demand, consumers have

higher expectations for fast delivery and diversified product choices. For merchants, suppliers also need to have a clear positioning of their imported bonded goods and think about how to ensure fast delivery conditions and achieve a balance between supply and demand to increase sales while avoiding the phenomenon of inventory backlogs or out-of-stock. This requires a more accurate, flexible and efficient supply chain for bonded goods in cross-border e-commerce. This study refines the existing bonded commodity supply chain model based on the advantages and disadvantages of the original bonded warehouse commodity supply chain. It discusses and researches the existing bonded commodity operation model. The purpose is to optimize the inventory of goods in bonded warehouses from the operation perspective and ensure that the turnover of goods is maximized while minimizing the backlog of goods in inventory. Secondly, by deepening the operational means to realize accurate prediction and positioning of the quantity and audience groups of imported goods, under the condition of meeting the balance of supply and demand, it could maximize the catering to the preferences of different consumer groups. Finally, merchants use operational means to reduce transportation costs to ensure rapid delivery of goods and maximize their interests. The optimization of the supply chain of bonded commodities could help enterprises better grasp the market demand and timely adjust the import and supply strategy to meet the needs of consumers while improving the competitiveness of enterprises in the market.

2. Analysis of Existing Supply Chain Models for Bonded Goods

2.1. Advantages

Cross-border e-commerce has become a new type of business form of China's foreign trade. Overseas direct mail, collection direct mail and bonded imports are the three major logistics modes of imported cross-border e-commerce today [3]. The existing supply chain model of bonded goods mainly includes procurement, warehousing and logistics, customs clearance and distribution. Similar to the traditional online shopping process for general trade goods, after the customer completes the purchase and payment on the online platform created by the cross-border e-commerce company, the merchant decides whether to stock from the original inventory or continue to fill the warehouse with additional orders from overseas according to the situation of bonded warehouse inventory and the number of orders and then completes the customs clearance, distribution and delivery of orders. The bonded warehouse commodity supply chain model optimizes the logistics and customs clearance process of cross-border e-commerce and provides consumers with a faster and more convenient overseas shopping experience.

2.2. Disadvantages

However, there are still some problems with the existing model, such as merchants cannot accurately predict the supply and demand relationship in the market and thus cannot accurately control the stocking situation of imported goods. For example, for some imported goods with a short shelf life, due to the customs supervision area, merchants cannot expire the food or daily-use commodities for their own collateral, pledge, withdrawal, price reduction self-destruction and other behaviors. When the market demand for such commodities is smaller than the number of goods in the bonded warehouse in advance, there will be a backlog of commodities or even deterioration and decay before the tax is paid, thus causing serious economic losses to the business. On the contrary, when the market demand for a certain type of goods exceeds the amount of stock in the bonded warehouse, merchants need to re-import such goods from overseas and complete the import process again. However, simultaneously, the time for customers to receive the goods will also be extended, leading to decreased consumer satisfaction.

On the other hand, China's history of development in bonded warehouse storage is relatively short, and there needs to be more experience in management, informatization and regional cooperative work. Objectively speaking, limited by customs policy and cross-border e-commerce economic development, the current level of bonded warehousing in China still stays in the basic bonded logistics

services, so the actual operation is not optimistic, and there is still a lot of space for development [4]. In general, for cross-border e-commerce enterprises, there are always high cross-border transportation costs in operation, imported products are difficult to control the timeliness, the supply chain efficiency is low so that the product loss rate is high, and consumer satisfaction needs to be improved. Therefore, optimizing the operation mode of the cross-border bonded commodity supply chain is vital.

3. Optimization of the Operation Mode for Bonded Goods

Given the existing cross-border bonded commodities' original operation mode, this paper conducts research and discussion based on the original buy-as-you-pick-up measures. It optimizes the sales and logistics transportation links while retaining the advantages of the original operation mode. It helps merchants reduce warehouse inventory costs, improve product timeliness and consumer satisfaction, and accurately grasp the market positioning of commodities and the needs of different consumer groups. It helps cross-border e-commerce enterprises develop, manage, and operate cross-border bonded goods.

3.1. Sales Strategy

3.1.1 Pre-sale Processing Strategy

Using a single-cycle model, it was found that suppliers could benefit from providing appropriate pricing incentives to induce downstream buyers to buy ahead unless market demand uncertainty exceeds a threshold level. Moreover, early buying opportunities could benefit suppliers and retailers without production lead times or capacity constraints [5]. This approach applies to bonded goods as well. Commodities could be shipped from abroad into a bonded warehouse, customs brokers for pickup and transfer, for the declaration of entry into the area, customs inspection and release into the bonded warehouse for stocking, e-commerce sales site (but also small programs, apps) on the merchandise into the available for sale status (if the force of the pre-sale, the goods can be sold ahead of time, but ultimately need to be prepared for stocking to the bonded warehouse) [6]. First, merchants can adjust the ordering cycle of imported goods for goods with a short shelf life and increase the frequency of orders to reduce the goods in the bonded warehouse detention time. Secondly, merchants could send pre-sale demand to overseas suppliers in advance to ensure that they have enough time to produce and supply goods to meet the merchants' pre-sale demand; finally, merchants could develop a more comprehensive pre-sale pricing strategy to encourage customers to buy in advance. Discounts, gifts or other incentives could be considered. Pre-sale measures for bonded goods not only allow merchants to have a clearer understanding and prediction of the market positioning of the goods to be sold and the consumer's demand preferences but also greatly avoid the backlog of inventory and the adverse economic impact caused by the prolonged retention of goods due to the merchants' unclear grasp of the goods' consumer market.

3.1.2 Accurate Forecasting of Import Quantities

Cross-border e-commerce enterprises based on big data analysis in advance of the hot commodities batch transported into bonded areas, bonded warehouses and other special customs supervision areas to play the special supervision areas of the "bonded function" and "logistics distribution" function and then according to the domestic consumer network order situation Then, according to the domestic consumers' online orders, the corresponding commodities will be handed over to the logistics enterprises from these special supervised areas in China for direct delivery to the domestic consignee's import mode. This mode of imported goods to personal effects clearance does not need to go through the tedious inspection and quarantine procedures like the traditional imported goods; they only need to pay a lower postal tax, greatly reducing the waiting time for consumers to place an order, similar to the domestic online shopping process [7]. Merchants conduct data analysis on bonded goods, collecting historical sales data, market trends and commodity characteristics data for accurate demand forecasting; forecasting models, building applicable forecasting models based on

data analysis, such as time series analysis, regression analysis or machine learning algorithms to forecast import quantities accurately; regular forecast updating, taking into account the impact of seasonality, market changes and other factors to ensure forecasting accuracy; and safety stock management, which builds on forecasts and sets appropriate safety stock levels to respond to unforeseen circumstances, such as sudden increases in demand or supply chain issues.

3.1.3 Synergy Between Supply Chains

Building strong relationships with suppliers to share sales data and market information so they could better meet pre-sale demand; Improving supply chain visibility to ensure real-time monitoring of inventory and incoming shipments and make timely adjustments to plans in response to changes; Building an inventory management system, using an efficient inventory management system could help track the flow of merchandise and automate triggering of incoming shipment processes.

3.2. Sales Operation Tools

In recent years, cross-border co-branding has become a social phenomenon, and co-branding could stimulate consumer curiosity and expand the brand's influence in society. Following Maotai and Ruixing co-launched the "jiang-flavour latte" drink, Maotai and Dove brand co-launched the wine heart chocolate gift box online on several platforms within an hour of the sale of all products being sold out. Maotai and Ruixing, Dove co-branding activities are not rare. Recently, Naixue's tea, with the influence of Jay Chou, launched the "Special West Fan" music universe co-branded milk tea. The first day of sale immediately fire market, the first day of sales of up to 1.46 million cups, set a new record for the highest sales of Naixue's new products [8]. The co-branding between enterprises could better achieve the purpose of increasing consumer attention and increasing sales. Based on the online pre-sale of bonded commodities, merchants could cooperate with famous domestic snack merchants to develop a bundled sales strategy to increase the sales of bonded imported commodities and meet the needs of different groups of consumers. The advantage of this method is that, for the previously mentioned goods with a short shelf life, it could accelerate the circulation of such goods, avoiding deterioration and stagnation in the warehouse for too long. In addition, co-branded bundled sales could also greatly give merchants sufficient stocking buffer time. Brand enthusiasts or consumers are willing to wait for the logistics and customs clearance time generated by the cross-border transportation of bonded goods for the co-branded brand or peripheral gifts, which greatly avoids the withdrawal of subscriptions and the decline in consumer satisfaction due to the logistics and transportation time.

3.3. Logistics and Transportation Management

The logistics operation model that cross-border e-commerce merchants could develop after accurate forecasting is through long-term cooperative agreements with third-party logistics companies. At the same time, they commit to providing a stable business volume by signing large orders for imported necessities such as rice, oil and noodles. Purchasing large quantities could help to obtain better transportation prices and favorable terms and discounts. For these more stable daily demand items with a lower risk of demurrage, merchants could also enter into prepaid service agreements with courier companies to get lower prices and higher priority. With the changes in consumer demand for product quality and time, the alliance between cross-border e-commerce and logistics companies is an optimization of the cross-border commodity supply chain, and supply chain coordination could be achieved through cooperation to reduce consumer waiting time as well as to achieve the goal of commodity logistics cost reduction [9]. In addition, e-commerce and express delivery companies could work together to optimize logistics and transportation. For example, parties could share and analyze commodity data to determine the best transportation routes, modes, and distribution strategies. By optimizing transportation planning and route selection, transportation distance and time could be reduced, thus reducing logistics costs. As for the stage of commodity management and distribution, enterprises should change the service mechanism flexibly and

reasonably to the actual needs of consumer groups and integrate the management mode of logistics enterprises to promote the management mechanism, service mechanism and logistics mechanism to realize the integrated development. Organic integration of logistics and transportation business could be started from the logistics market and express delivery and other work, and at the same time, can provide a variety of value-added services, such as collection of warehousing costs and express insurance costs. The cross-border e-commerce enterprises could be effectively integrated with the commodity transportation business, from the transport insurance and query rates and other levels, but also for the consumer groups to provide personalized information service needs to maximize the satisfaction of the needs of the consumer groups, so that the two sides of the cooperative relationship tends to be harmonious and stable [10]. The two sides tend to have a harmonious and stable cooperative relationship.

4. Conclusion

Through research, this paper finds that based on the existing bonded commodity supply chain, there are many gaps in the cross-border bonded commodity supply chain in terms of sales, transportation and storage that could be improved and optimized. Therefore, the authors of this paper believe that for the current supply and sales mode of bonded commodities, merchants should optimize the online operation system of cross-border bonded commodities. It is suggested that cross-border e-commerce enterprises optimize the operation mode of their existing supply chain from sales strategy, operation means and logistics and transportation management. The main purpose of this paper is to help cross-border e-commerce enterprises solve a series of problems they are facing, including how to accurately grasp the market demand and positioning of imported bonded goods, how to speed up the circulation of imported bonded goods, how to manage bonded warehousing and how to optimize the logistics and transportation modes. Thus, this study aims to create greater benefits for the merchants, simultaneously ensuring the healthy development of cross-border e-commerce enterprises in the future and enhancing the consumer's shopping experience and sense of well-being for cross-border bonded goods. Finally, the research in this paper has yet to carry out in-depth research and discussion on the classification and storage of commodities and data management in bonded warehousing. It could be further refined based on the above research to facilitate the in-depth study of this topic.

Authors Contribution

All the authors contributed equally, and their names were listed alphabetically.

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