

Investigating Challenges and Countermeasures in the Reverse Supply Chain of E-commerce Returns: Case Study of Jingdong Self-operated Mall

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Abstract. With the rapid development of e-commerce, online shopping has gradually become the mainstream method. At the same time, the return rate of commodities is also much higher than the traditional business model, and the reverse logistics problem of e-commerce has attracted much attention. This paper discusses the cost of reverse logistics in depth and extends to the general situation, taking Jingdong Self-operated Mall as an example. Reverse logistics is more expensive, more difficult and involves more complex factors than forward logistics, making it challenging to control costs while ensuring customer satisfaction. Several solutions to the cost problem of reverse logistics are currently available in the market, but they have certain limitations and drawbacks. This paper proposes some optimization strategies, including introducing self-mailing and self-pick-up, strengthening quality inspection mechanisms, setting up specialized commodity certification and secondary sales centers, and commissioning third-party reverse logistics to improve the efficiency of reverse logistics, reducing costs, minimizing losses and regulating order. It is also recommended that the fairness and reasonableness of the platform be maintained by strengthening the audit mechanism, adjusting the return and exchange policy and taking stringent measures against negative returns.

1 Introduction

In recent years, with the rapid development of e-commerce, online shopping has gradually become one of the mainstream shopping methods. At the same time, the return rate of goods is also much higher than the traditional business model. E-commerce reverse logistics has become a matter of great concern. Reverse logistics refers to the logistics activities from consumers to suppliers, and there are two main forms: recycling reverse logistics and return reverse logistics [1, 2]. Return reverse logistics in e-commerce is concentrated on the flow of goods that are delivered and sold according to a network order and returned from the consumer to the retailer or supplier due to quality or other factors that cause customer dissatisfaction [3]. However, compared with forward logistics, reverse logistics is more costly, more difficult, and involves more complex factors, so how to control costs while ensuring customer satisfaction has become a difficult problem to be solved [4].

Although there have been a variety of solutions to the reverse logistics cost problem in the current market, these solutions all have certain limitations and drawbacks. For example, stipulating that merchants bear the return logistics costs [5] may lead to merchants'

reluctance to provide return services, thus reducing customer experience; another example is introducing the intelligent reverse logistics system [6], although the use of advanced technology and cooperation mode can achieve the reduction of reverse logistics costs and the improvement of efficiency. However, in practical application, there are still limitations to data sharing and cooperation willingness and other issues.

Jingdong, as one of the mainstream e-commerce platforms in China, currently has the largest self-built logistics system in the field of e-commerce enterprises in China. In this paper, Jingdong Self-operated Mall will be taken as an example to discuss the cost problem of reverse logistics in depth and extend it to the general situation. Based on the previous theoretical research, this paper will find a more practical solution by optimizing the reverse supply chain for reverse logistics' current limitations and challenges.

2 The problems of reverse logistics in the e-commerce environment

The problems of reverse logistics in the e-commerce environment mainly include high return rate, high cost of the return process and the negative impact resulting from

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information lag on the reverse supply chain links. The high return rate can be subdivided into two factors: product and policy.

2.1 Product Gap

Online shopping is different from offline shopping, and consumers can not see the real thing with their naked eyes or experience the function of the product, so there is a possibility that the quality of the products sold on the e-commerce platform varies, for example, some merchants will sell real and fake products or sell defective products that do not meet the standard. On the other hand, the information consumers get when shopping online is mostly specially processed product pictures or some descriptive text, which deviates from the actual products, so consumers cannot have a comprehensive and objective understanding of the products, so even if the products themselves have no quality problems, when buyers receive the products and find that they are not what they expect, they will have a psychological gap, which will also cause a large number of return products [7].

2.2 Lenient policy

Overly lenient policies are another major reason for the high return rate. In an increasingly competitive market, to attract consumers, some businesses offer return policies as a marketing tool, making it easier for people to consume impulsively and succumb to compulsive buying, thus causing an increase in the return rate of defect-free goods [7]. In addition, “fraud” exists in abundances, such as buying and returning clothes for an event, i.e., using the return policy to gain a consumer experience, making merchants who focus on excellent customer service suffer from this [8].

2.3 High cost

The complexity of reverse logistics makes it more costly compared to forward logistics. Returned products need to be transported from the buyer to the distribution center or the seller’s warehouse, after which specialized staff members are required to carry out a quality inspection to classify the returned goods to determine their destination as secondary sales or repair, scrap, etc. Furthermore, the platform or the seller needs to prepare sufficient storage resources to deal with this part of the

goods. In reverse logistics, each link needs to spend a certain amount of workforce and material resources, which brings high costs.

2.4 Lagging information

When the information flow is reversed from the consumer back to the supplier, there is a lag in the information, and timely and effective information transfer cannot be achieved, thus creating a “bullwhip effect”. The uncertainty of the number and timing of returns and exchanges adds difficulty and risk to each session’s activities, such as production, supply, inventory management and marketing.

3 case analysis

3.1 Case description

Jingdong’s B2C model is different from Taobao’s C2C model. The B2C model can effectively reduce transaction steps, lower costs and provide a wider range of products and more competitive prices. The B2C model is becoming a major trend in the different positioning of Tmall and Taobao. At the same time, Jingdong’s “people-oriented” service concept and its generous return and exchange policy have attracted many consumers. As a result, the demand for reverse logistics in Jingdong is increasing.

According to Jingdong’s return transaction process (Figure 1), consumers can submit a return request within 7 days of receiving the goods. Within 15 days, they can only submit an exchange request. The reason for the request on the application page will be transferred to the audit platform for approval. After the request is approved, Jingdong will provide a home access service, when the goods arrive at the distribution center, the platform will refund the customer, and the goods will be processed. The return transaction will be considered complete once the customer has received payment or the new goods are re-delivered.

The goods are returned to the platform’s distribution center, which is overhauled and sorted by specialized staff before being returned to the supplier and sent to the shop for secondary sales or reported as damaged, depending on the circumstances.

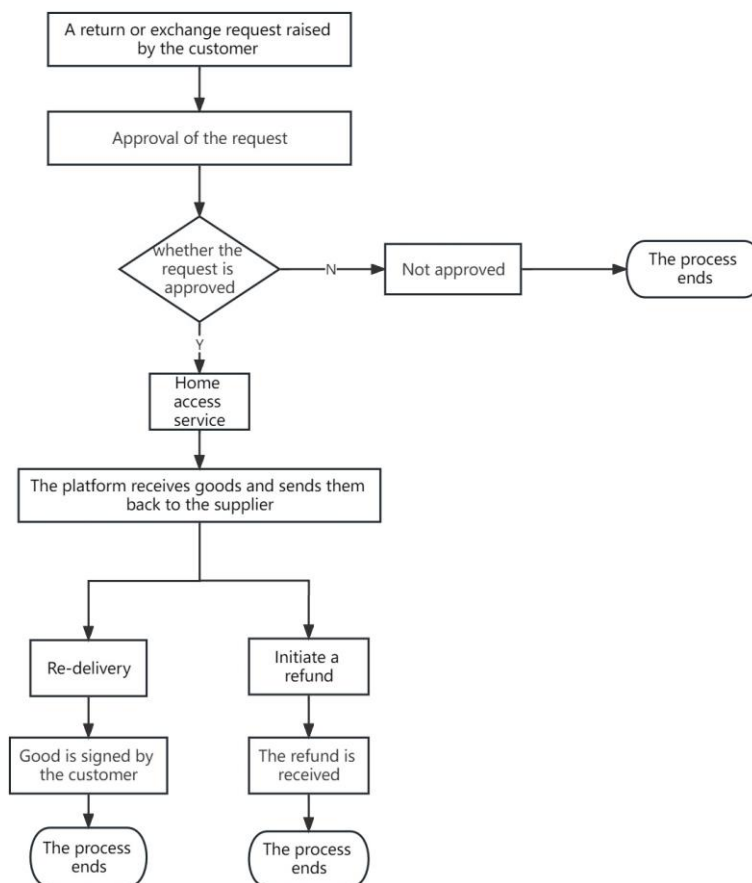


Figure 1. Jingdong’s return transaction process.(Photo/Picture credit : Original)

3.2 Analysis of the Problem

The cost issues involved in the reverse logistics of Jingdong’s B2C model exist in four main parts: transportation, auditing, warehousing, and return and exchange policies.

When a customer submits a return request, the platform arranges for a courier to pick up the goods and deliver them to Jingdong’s storage center, which incurs huge and unpredictable labor and transportation costs. In addition, as the number of goods in reverse logistics is uncertain, situations such as running empty or insufficient allocation may arise during the logistics process, further increasing transportation costs.

Jingdong needs to check the goods’ information, the goods will be approved before being accepted into the warehouse, and then they will be handed over to quality inspection personnel for quality inspection, including whether the goods are in good condition and whether the reasons for return are reasonable, etc. If the return criteria are met, the warehouse personnel will complete the refund operation, rearrange the delivery, categorize and store the returned goods, and enter them into the information system. If the goods are damaged or do not meet the return criteria, Jingdong needs to process them and bear the related costs. For example, if the goods are

damaged or lost during the reverse logistics, Jingdong will be liable for reasonable compensation costs.

Return or exchange goods need to be warehoused after they are returned to Jingdong. Due to the unpredictable types and quantities of the goods, Jingdong needs to prepare adequate warehousing resources and management systems to handle these goods. In addition, returned goods also need to be sorted, cleaned and repaired, resulting in certain additional costs.

Another major problem with Jingdong’s platform is its lax return and exchange policy. The 7-day no-reason returns and 15-day exchanges that Jingdong now offers do allow it to gain a foothold in the fierce competition of e-commerce platforms, especially during shopping festivals such as "Double 11" and "6-18", where the lax returns and exchanges policy can greatly promote the consumption. But simultaneously, the number of returns for non-defective products has increased dramatically. With the process of returning goods as the application is only described through text or pictures, the audit is difficult to distinguish whether there is a real problem or whether the good has been used while maintaining an intact appearance (e.g., clothes with intact hangtags). Jingdong is China’s largest 3C products sales platform. Electronic products are more likely to have internal damage, usually need some expertise to identify the fault, and the unit price of goods is high, the replacement cost is high, and because electronic products have a longer

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warranty cycle compared to daily necessities, there will be customers to make use of this "people-oriented" service. They may exchange their goods that have been used for a certain period without quality problems for brand-new goods, and the authenticity of product defects cannot be identified through platform audits alone.

3.3 Optimization Strategies

To study Jingdong's reverse logistics problems, we deeply analyzed the problems in several aspects, such as transportation, audit, storage and return and exchange policy. In this process, we found that these problems are common to Jingdong, but other e-commerce platforms also face similar reverse logistics dilemmas. Therefore, the solutions proposed by studying Jingdong's reverse logistics problems can provide a certain degree of insight into the solution to all reverse logistics problems. Based on this, we will suggest and explore practical solutions in reverse logistics to help e-commerce platforms and consumers better cope with the challenges posed by reverse logistics and achieve better reverse logistics efficiency and economic indicators. This paper will introduce strategies to help e-commerce platforms solve reverse logistics problems effectively.

The platform can make simultaneous improvements in several aspects of pickup, quality inspection, classification, secondary sales and return and exchange policy to achieve efficiency, cost reduction, loss reduction and regulation of chaos to achieve optimization of the reverse supply chain. Specific improvement suggestions are as follows:

Introduce express self-mailing and self-pickup, in which consumers handle returned items by themselves, reducing logistics labor costs and the complexity of reverse logistics [9]. Self-pickup or self-mailing points are set up in key cities or regions, and consumers can choose to mail their returned goods at these locations instead of mailing them back to the merchant. And they can get a physical experience before confirming the exchange, thus greatly reducing the chances of another return or exchange. Also, optimize the self-pickup process. To make the self-pickup service smoother, online booking, reminder and cell phone scanning can be provided on the website or application to ensure the efficiency and convenience of the self-pickup process.

Quality inspection at the time of return prevents negative returns and safeguards merchants' interests. However, the quality inspection link will increase workforce and cost in practice. The platform can adopt some technical means to reduce the cost of quality inspection, such as the image recognition technology already mastered is currently mostly used in e-commerce platforms to combat false propaganda on the Internet, which can be tried to be applied in reverse logistics returns, scanning the returned picture credentials uploaded by customers, identifying returned products and automatically recording them to achieve fast and efficient processing. After further research and

improvement, images of returned products can be analyzed and compared with images of the original product to confirm whether there is damage or other problems. In addition, the product model and lot are automatically identified for better documentation and tracking.

Set up a special center for returned goods on top of the regular sales platform, divided into goods certification and secondary sales. Even though logistics personnel can carry out preliminary inspection of goods and logistics return, the concentration and professionalism are not high enough, resulting in incomplete utilization of resources while setting up a certification center can be based on the application submitted by consumers online, further quality testing of goods, and through the type of goods, quality level for classification and certification, through the certification of goods can be re-priced reasonably according to its quality level and in its special. The certified products can be re-priced according to their quality level and sold in its special platform, which not only retains part of the profit but also meets part of the demand of the second-hand market. The uncertified goods will be returned to the merchant or directly scrapped to reduce further storage costs.

The problem of low specialization and high cost of reverse logistics management can be solved by entrusting third-party reverse logistics [10]. Unlike conventional sales businesses, third parties specializing in reverse logistics can obtain a more professional management system and more efficient information interaction to pass the targeted reverse logistics services. By outsourcing the reverse logistics business, e-commerce platforms can focus on their sales business, and reverse logistics will become a new competitive trend.

For the overly lenient return and exchange policy, it can be improved from the following aspects:

Strengthen the auditing mechanism: for the return and exchange applications made by consumers, manual auditing can be increased, and consumers can be required to provide more supporting materials, such as photos and videos, to identify better whether the goods are defective or damaged. Especially for electronic products, consumers can be required to provide more detailed usage records and fault descriptions so that the platform can better determine whether there are quality problems with the goods.

Adjust the return and exchange policy: Although a lenient policy can attract consumers, too many returns can increase costs and pressure the merchant. Therefore, the policy can be appropriately adjusted to limit the number of returns and time, improve the quality of after-sales service, and curb the abuse of the policy.

Severe measures, such as credit reduction and account suspension, can be taken against consumers who

maliciously and abusively return goods to maintain the platform's fairness and reasonableness.

4 Conclusion

This paper takes Jingdong's self-owned e-commerce platform as a case study to state its return mode and process. It also analyzes that the cost problem of its reverse supply chain mainly exists in four parts: transportation, auditing, storage, and return and exchange policy. This series of processes requires a lot of human and material resources, and e-commerce enterprises may also need to bear additional losses due to the breakage and loss of goods in transit, resulting in high reverse logistics costs. Given the existing problems, it is suggested to make improvements in several aspects such as pickup, quality inspection, classification, secondary sale and return and exchange policy simultaneously by increasing the self-sending and self-pickup methods, setting up special centers for classification, introducing sweep identification technology and tightening the policy to achieve optimization of the reverse supply chain. Since the database of the research direction of this paper is difficult to obtain, it does not achieve a comprehensive and complete analysis of reverse logistics, and the authors will conduct further theoretical and empirical research in this field in the future.

Authors Contribution

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

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