



# RESEARCH ON RETURN LOGISTICS OF TMALL MART B2C E-COMMERCE PLATFORM

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## ABSTRACT

*E-commerce platform has become one of the most important ways for consumers to buy goods, but due to the limitations of online shopping, its return rate is also gradually increasing. Tmall Mart as an e-commerce platform with characteristic distribution services, its reverse logistics still has some problems to be improved in terms of consumer satisfaction, logistics cost and non-contact mode. In this regard, this paper gives some optimization suggestions on changing the service management model of the platform, enhancing the awareness of reducing the cost of reverse logistics and constructing unmanned distribution reverse logistics. The aim is to guide Tmall Mart and other B2C e-commerce platforms to reform and innovate the return reverse logistics.*

**Keywords:** Logistics Management, Reverse Logistics, B2C E-Commerce, Tmall Mart

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## 1. INTRODUCTION

Since the 21st century, with the rapid development of information technology and digital technology, they have been more widely used in various industries and fields. For today's trading market, the traditional retail model can no longer meet the needs of consumers. Therefore, e-commerce, a new business operation model, has become one of the most important consumption channels, and it has gradually become an important part of people's lives. The scale of China's e-commerce market is huge. In 2022, the total transaction volume of China's e-commerce market reached 43.83 trillion yuan, an increase of 3.5% over the same period last year<sup>[1]</sup>. Moreover, according to the 2022 Global payment report released by Worldpay, a subsidiary of Fidelity National Information Services (FIS), the global e-commerce market was worth more than \$5.3 trillion in 2021, up 14 per cent from a year earlier, with mobile devices accounting for 52 per cent of all e-commerce consumption.

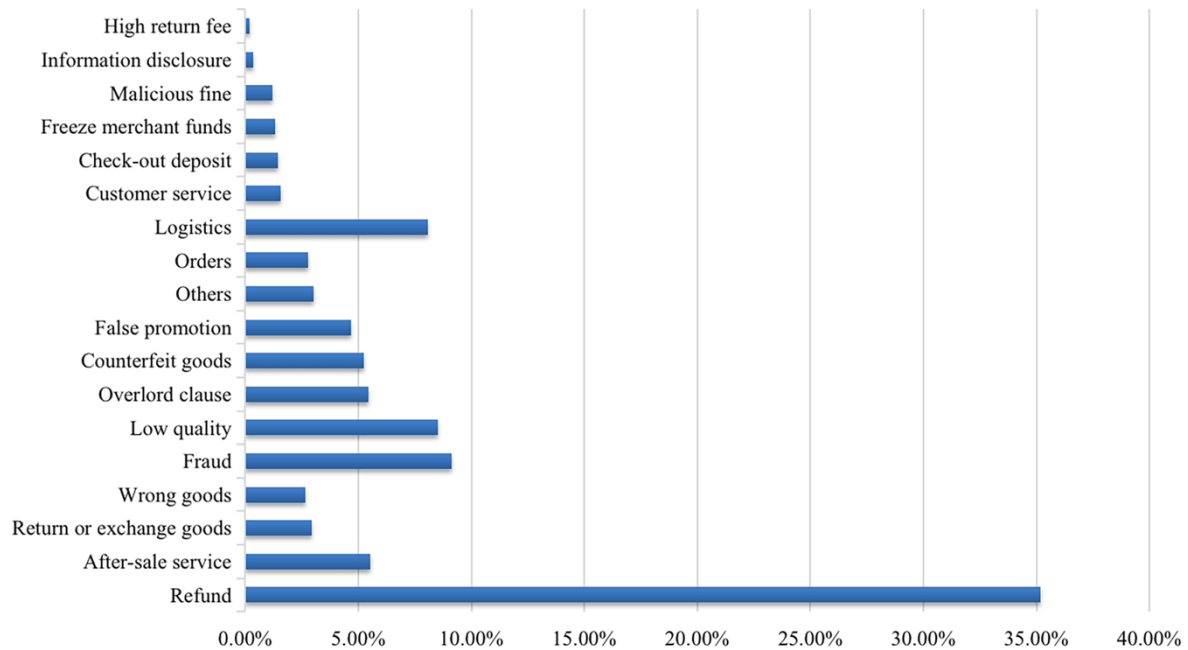
E-commerce enterprises have some significant advantages, such as lower transaction costs between buyers and sellers, easier access to the market, improvement of market efficiency and enhancement of the value chain. However, these e-commerce enterprises are also expected to face supply and logistics-related challenges in the future. Obviously, under the e-commerce mode, if enterprises want to achieve competitiveness, they should attach importance to logistics management and ensure the orderly development of e-commerce logistics management with the help of scientific and reasonable methods. With the growth of the global e-commerce platform, the amount of product returns is on the rise, which is of great significance to reverse logistics management<sup>[2]</sup>. For e-commerce enterprises, reverse logistics management has become a necessary business measure. Reverse logistics refers to the process in which goods move towards the upper reaches of the supply chain from the lower reaches of the supply chain<sup>[3]</sup>. Specifically, the reverse logistics of e-commerce is mainly divided into two forms: recovery logistics and return logistics. Return logistics mainly refers to the process that the purchased goods are sent back to the place of production from the place of consumption due to various problems such as model discrepancy or quality. Recovery logistics refers to the process that the goods are turned into waste after a period of use, and the merchants recycle and reuse them<sup>[4]</sup>.

This paper mainly studies return logistics, and aims to explore the return reverse logistics mode and its existing problems of Tmall Mart, which is an e-commerce retail platform for characteristic distribution. It provides theoretical guidance for the reform and optimization of return reverse logistics in Tmall Mart. The rest of the article is arranged as follows. The second section introduces the current situation of return logistics on Chinese B2C e-commerce platforms. The third part introduces the return logistics operation mode of Tmall Mart. The fourth part points out the problems in the return logistics mode of Tmall Mart. The fifth part gives some suggestions on how to optimize the return logistics of Tmall Mart. The last part gives the conclusion and prospect.

## **2. CURRENT SITUATION OF RETURN LOGISTICS ON CHINESE B2C E-COMMERCE PLATFORMS**

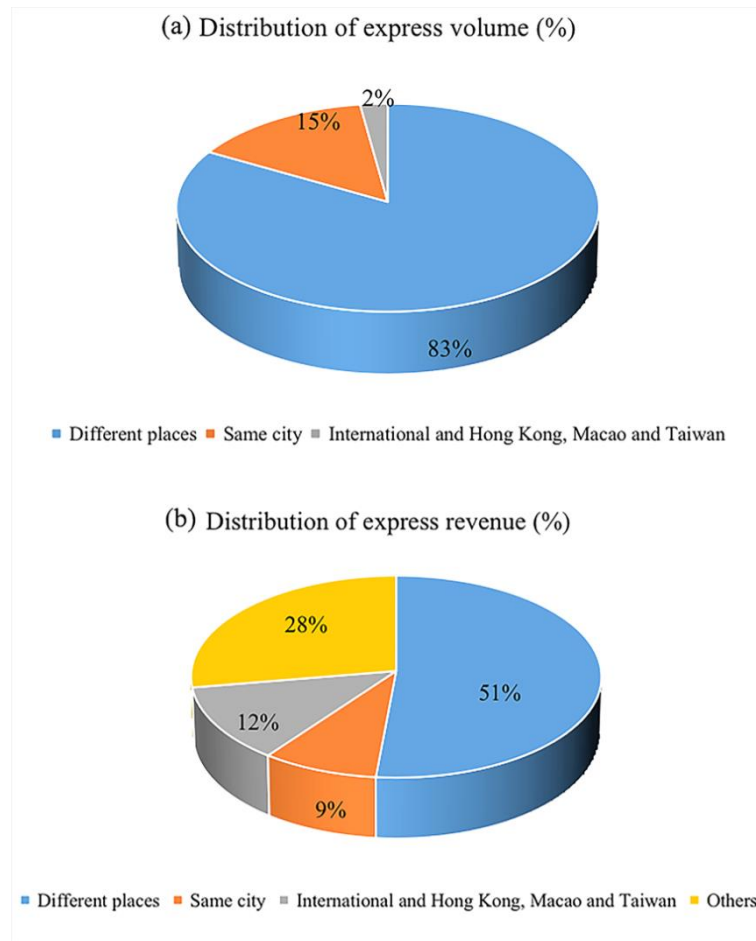
### **2.1. Return status of Chinese B2C e-commerce platforms**

China's e-commerce market is growing and mature, but the e-commerce platform is also facing the problem of high return rate<sup>[5]</sup>. The types of complaints from social e-commerce users in 2021 include refund, low quality, logistics and fraud, etc., see figure 1. It is worth noting that the number of complaints related to returns is about 47%. And the consumer survey report jointly released by China Consumer magazine and relevant units shows that among online shoppers, only 22.09% of the respondents have never returned or exchanged goods, and a total of 33.25% of the respondents believe that the return rate of online shopping is more than 75%<sup>[6]</sup>. Return not only brings trouble to consumers, but also greatly increases the logistics of e-commerce enterprises, so the logistics speed and quality of e-commerce enterprises, especially the service level of reverse logistics has become one of the key factors affecting the development of e-commerce platform.



**Figure 1** TOP20 complaint in online shopping in China in 2021

From the return channel of the platform, the return logistics business of the e-commerce platform is mainly undertaken by the third-party logistics company. As the volume of express delivery and the revenue of express delivery mainly come from remote express distribution, see figure 2. In other words, logistics companies have the characteristics of large scale and multi-regional distribution. Therefore, now Shun Feng and Cainiao Logistics (Zhongtong, Yunda, Yuantong, Shentong, etc.) are the third-party logistics enterprises that support most e-commerce enterprises to return goods. JD Logistics, as a self-built logistics enterprise of JD Group, has been involved in third-party logistics. They set up an express department in the second half of 2021 to provide return logistics services not only for JD platform but also for other e-commerce platforms.



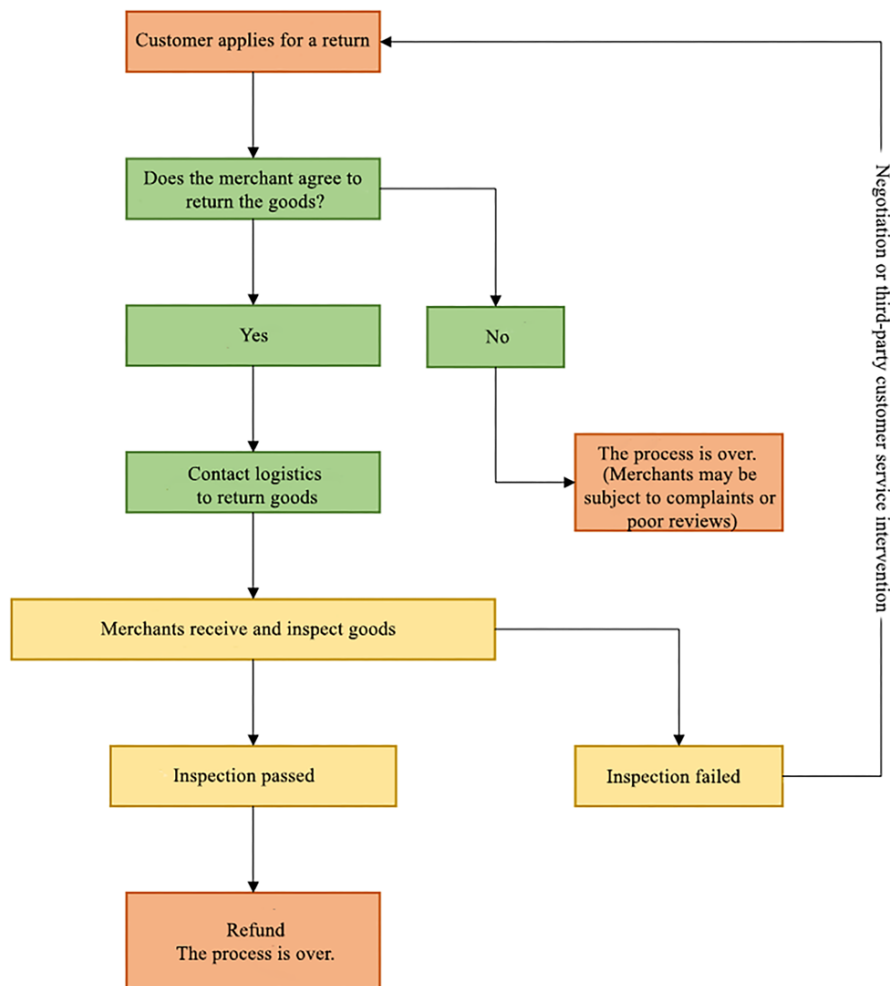
**Figure 2** Distribution of express delivery in China in 2020

With regard to the overall return process, generally speaking, the consumer will first send the return application to the merchant, waiting for the merchant to process, and then the merchant will choose to accept or reject the application according to the status of the goods in the order. If the application is approved, the merchant will provide corresponding logistics services according to the needs of customers (self-return or door-to-door pick-up). Finally, the goods will be returned to the supplier, and the capital flow of the e-commerce platform is recovered. About the subject of return, it is different from B2B, B2C, which is an e-commerce mode, that the subject of return is mainly individual. Therefore, most of the returned goods that B2C merchants need to deal with are single parcels. Most of the information such as the variety, return time and return place of these single parcels are different, which undoubtedly brings higher return logistics costs and greater logistics challenges to e-commerce.

## 2.2. General process of return logistics on Chinese B2C e-commerce platforms

Generally speaking, reverse logistics on e-commerce platform has a similar standardized process, as shown in figure 3 below. When consumers find that there is a deviation, poor physical experience, poor quality or other problems with the goods described by the merchants, they will apply for refund and exchange through the refund channel provided by the e-commerce platform. After receiving the return request, the merchant will check the order information submitted by the customer according to the return rules. If the inspection fails, the merchant will refuse to return the goods, and the process ends.

While, if the merchant agrees to return the goods, the consumer needs to send out the purchased goods and feedback the logistics information of the goods to the merchants through the platform. After receiving the goods and checking the condition of the goods, the merchant decides whether to make a final refund.



**Figure 3** The process of return logistics on B2C e-commerce platform

The market size of reverse logistics has grown significantly in the past few years and is expected to reach about \$603 billion by 2026<sup>[7]</sup>. Generally speaking, although the scale of the return reverse logistics market is expanding, most of the return reverse logistics still lack a complete system and the ability to iterate rapidly with the development of the times. that is to say, the field of return reverse logistics is still a real treasure to be developed.

### 3. RETURN LOGISTICS MODE OF TMALL MART

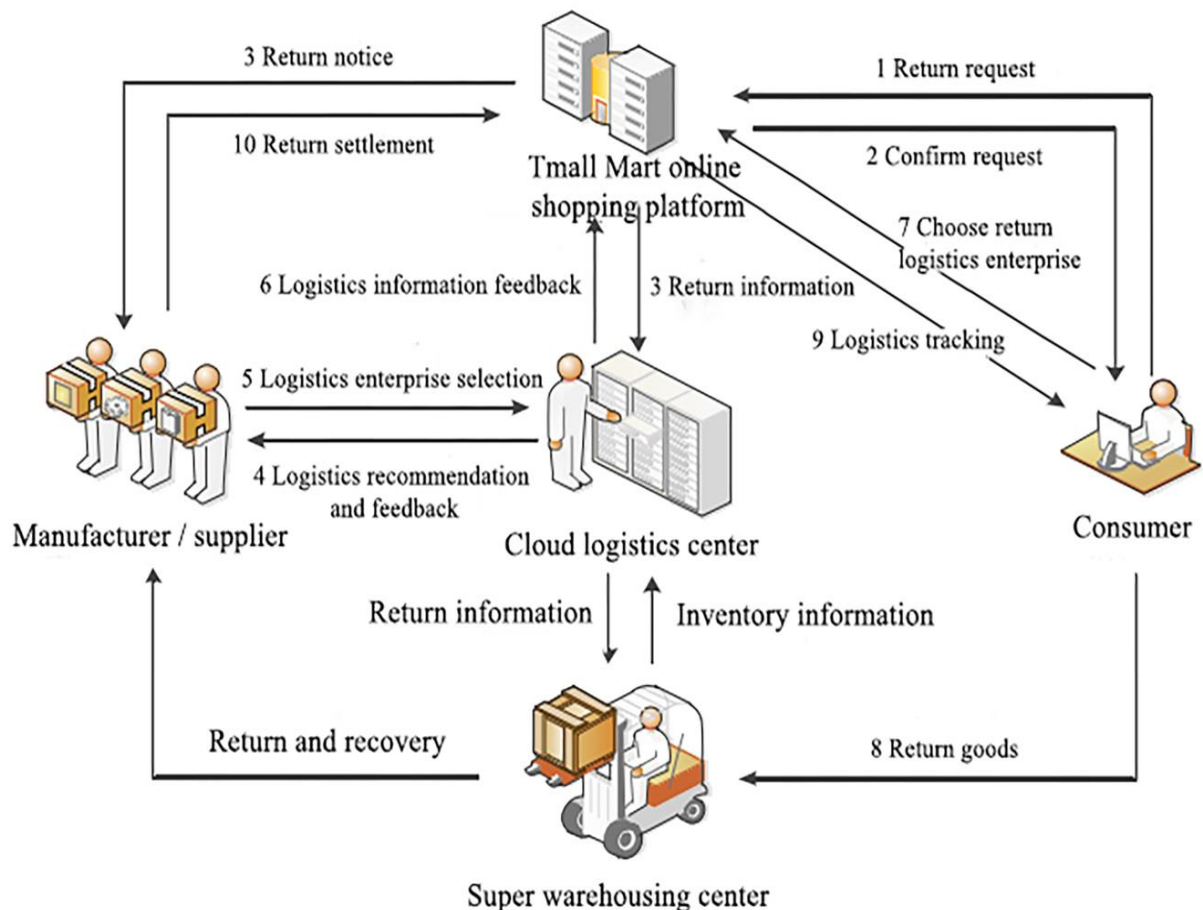
#### 3.1. Introduction of Tmall Mart

Tmall Mart was officially established in April 2011. Tmall supermarket is an online supermarket launched by Alibaba, in which the goods go through layers of selection, 100% guarantee the quality of goods, and the price is reasonable, deeply loved by consumers. Tmall Mart, as a self-owned enterprise of Ali, has a large and stable customer base and rich product sources, and is developing rapidly. Tmall Mart logistics adopts unified warehousing and unified professional packaging to provide consumers with flexible distribution services such as “one hour”, “half day”, “next day” and convenient experience of one-stop purchase.

Tmall Mart with the help of Cainiao Logistics in many core areas to establish professional warehousing centers. At the same time, it cooperates with professional distribution companies around the country to form a logistics system network with the warehouse center as the core and radiating to the surrounding cities. At present, the characteristic distribution of Tmall Mart has been found in large and medium-sized cities all over the country<sup>[8]</sup>.

### 3.2. Return logistics mode of Tmall Mart

During the return process of Tmall Mart platform, when the consumer's return request is agreed by the merchant, the online shopping platforms of Tmall Mart will send return information to the manufacturer (supplier) and the cloud logistics center at the same time. During the return process of Tmall Mart platform, when the consumer's return request is agreed by the merchant, the online shopping platform of Tmall Mart will send return information to the manufacturer (supplier) and the cloud logistics center at the same time. At the same time, Tmall Mart platform will provide logistics tracking information to consumers. After goods are returned to the warehouse, the manufacturer (supplier) will settle the settlement with Tmall Mart platform, and finally return the refund to the consumer, as shown in figure 4.



**Figure 4** Tmall Mart return logistics flow<sup>[9]</sup>

In the whole return logistics network, Tmall Mart uses a self-built super warehousing center to deal with goods and its information, which is a self-supporting logistics mode, that is, enterprises choose their own logistics-related enterprises. At the same time, Tmall Mart takes the cloud logistics platform as the central system of Tmall return logistics, making it easier to connect manufacturers (suppliers), warehousing centers, consumers and online shopping platforms. For example, manufacturers (suppliers) can connect with other manufacturers (suppliers) through cloud logistics centers, or they can send and receive information instructions from online shopping platforms, and then return goods to the warehousing center.

At this time, various enterprises form a logistics alliance, including the intervention of third-party logistics, mainly rookie logistics. The enterprises participating in the alliance have a logistics partnership of mutual trust and sharing risks and benefits. The return logistics mode of Tmall Mart has the characteristics of B2C e-commerce self-management, logistics alliance and third-party logistics. It can be said that the return reverse logistics mode of Tmall supermarket is a symbiotic mode.

## **4 PROBLEMS IN RETURN LOGISTICS OF TMALL MART**

### **4.1. Low consumer satisfaction**

A questionnaire survey has been conducted on the customer satisfaction of reverse logistics returned by Tmall Mart. The survey shows that 60% of the people think that the return process is very tedious and the processing cycle is long. And 36% of shoppers are dissatisfied with the return process, and the proportion of very dissatisfied is as high as 26%<sup>[10]</sup>. The low consumer satisfaction is mainly caused by the poor service management of the platform, which is reflected in the following two aspects.

On the one hand, the effective period of freight insurance is long. When consumers return goods in reverse logistics, they need to pay the freight first. This means that consumers have to wait until the returned goods arrive at the merchant before they can receive the freight insurance promised by the merchant, which requires a summary to last about 5-7 days. This will increase the dissatisfaction of some consumers.

On the other hand, the quality of return service is low. As Tmall Mart mainly relies on rookie logistics to dominate the whole logistics process, Tmall supermarket cannot directly get personal information about consumers. As a result, it is unable for Tmall Mart to provide personalized and diversified return services according to the characteristics of consumers. In addition, due to the professional level and personal quality of logistics service personnel, reverse logistics services are not standardized and not in place, which makes consumers angry and other discontent.

### **4.2. High logistics cost**

At present, the return logistics of Tmall Mart has not been formed on a large scale. More than 90% of the packages produced by reverse logistics in Tmall Mart every month come from completely different consumers<sup>[11]</sup>. The source of return and exchange reverse logistics in Tmall Mart is the consumers at the end of forward logistics, while the end consumers in Tmall Mart have the characteristics of large base and scattered geographical location. This situation has formed a great obstacle to the large-scale reverse logistics of its return, which leads to the return logistics system of Tmall supermarket cannot achieve high-quality resource allocation and waste resources. Therefore, to reduce logistics costs become very difficult for Tmall Mart.

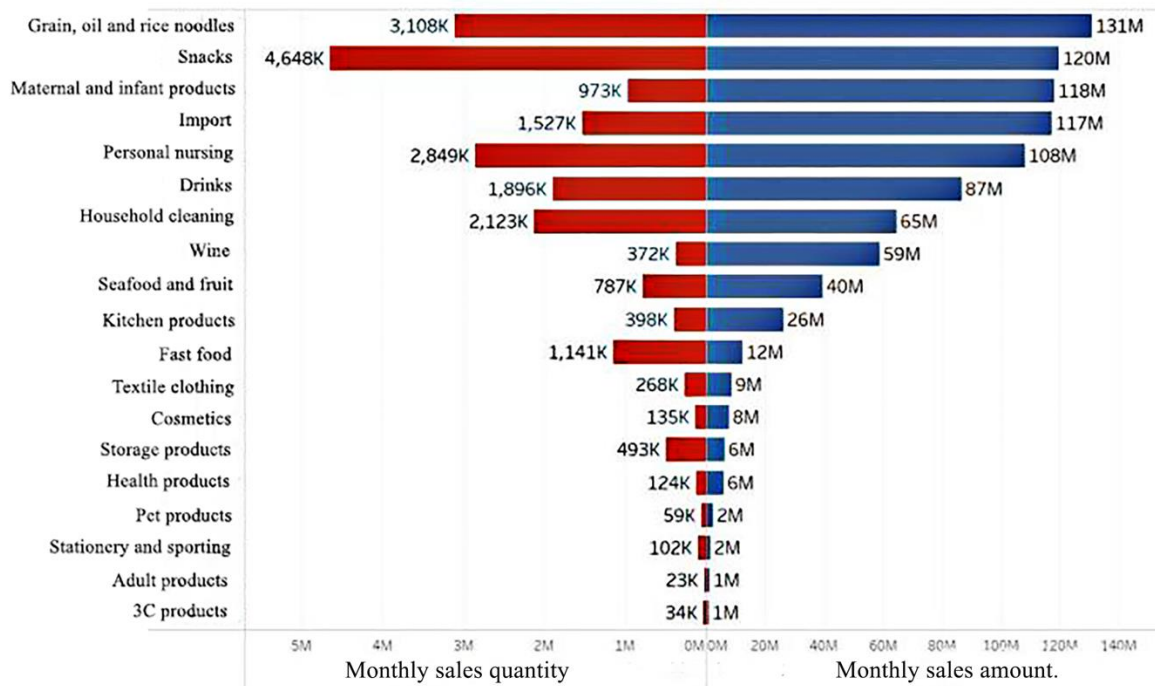
In addition, the return standards of logistics enterprises cooperating with Tmall Mart are not unified. Cainiao Logistics, which plays a main supporting role in the return reverse logistics of Tmall supermarket, is a logistics alliance composed of Zhongtong, Yunda and other independent third-party logistics enterprises. However, these logistics providers have established their own return rules according to actual situation, which leads to the lack of uniform return policies and standards faced by consumers when docking with logistics companies. When disputes arise, there is also a lack of an authoritative third-party agency to mediate. In real life, logistics companies and online shopping platforms often pass the buck to each other, resulting in repeated or stopped transportation of goods, wasting huge economic resources.

#### **4.3. Lack of contactless return logistics system**

Nowadays, as people pay more and more attention to public health and personal protection, contactless return is undoubtedly the first choice for people. In China, contactless distribution was first launched by Meituan takeout in January 2020, and then this special distribution method was widely used by major logistics enterprises. At present, the form of contactless distribution service mainly includes agreed delivery, storage in the cabinet and fixed distance distribution<sup>[12]</sup>. Tmall Mart has also launched a contactless distribution service in many places, where consumers can negotiate the location of parts with the distributor to avoid direct contact. During COVID-19 epidemic situation, when consumers place orders, Tmall Mart will provide contactless distribution service by default. After contacting the customer by phone, the distributor will put the goods in the agreed position between the two parties. If consumers have a demand for door-to-door delivery, they can also contact the distributor in advance. While, if customers have a need to return goods, they can also carry out contactless delivery in this way.

With regard to return logistics, Tmall Mart currently has three modes: door-to-door pick-up, send-point self-mail and self-return. In these three return processes, except that consumers choose to put the returned goods into the express cabinet during door-to-door pick-up, the rest cannot be returned without contact. However, the returned goods from Tmall Mart are usually not suitable to be sent back through express cabinets. As can be seen from figure 5 below, Tmall Mart has the highest monthly sales of daily necessities. However, this kind of goods, such as grain, oil and rice noodles, are generally large in volume, but the space of express cabinets is relatively small, so consumers are often unable to put them into express cabinets when returning goods, so in fact, Tmall Mart does not have a complete contactless return logistics system, which cannot achieve contactless return in a real sense.





**Figure 5** Average monthly sales of all kinds of goods in Tmall Mart in 2019<sup>[13]</sup>

## 5. OPTIMIZATION OF RETURN LOGISTICS ON TMALL MART

### 5.1. Update the service management mode

#### 5.1.1. Improve the mode of freight advance

In order to shorten the effective period of freight insurance, Tmall Mart can choose to negotiate with third-party logistics enterprises and freight insurance undertakers. After confirming that consumers have returned the goods, the platform will settle the freight paid by consumers unilaterally and immediately. Then the freight insurance underwriter will refund the freight advanced by the platform, as shown in figure 6 below. When the platform prepares freight for consumers, for consumers, the effective waiting period of 5-7 days of freight insurance disappears, which can greatly improve consumer satisfaction.

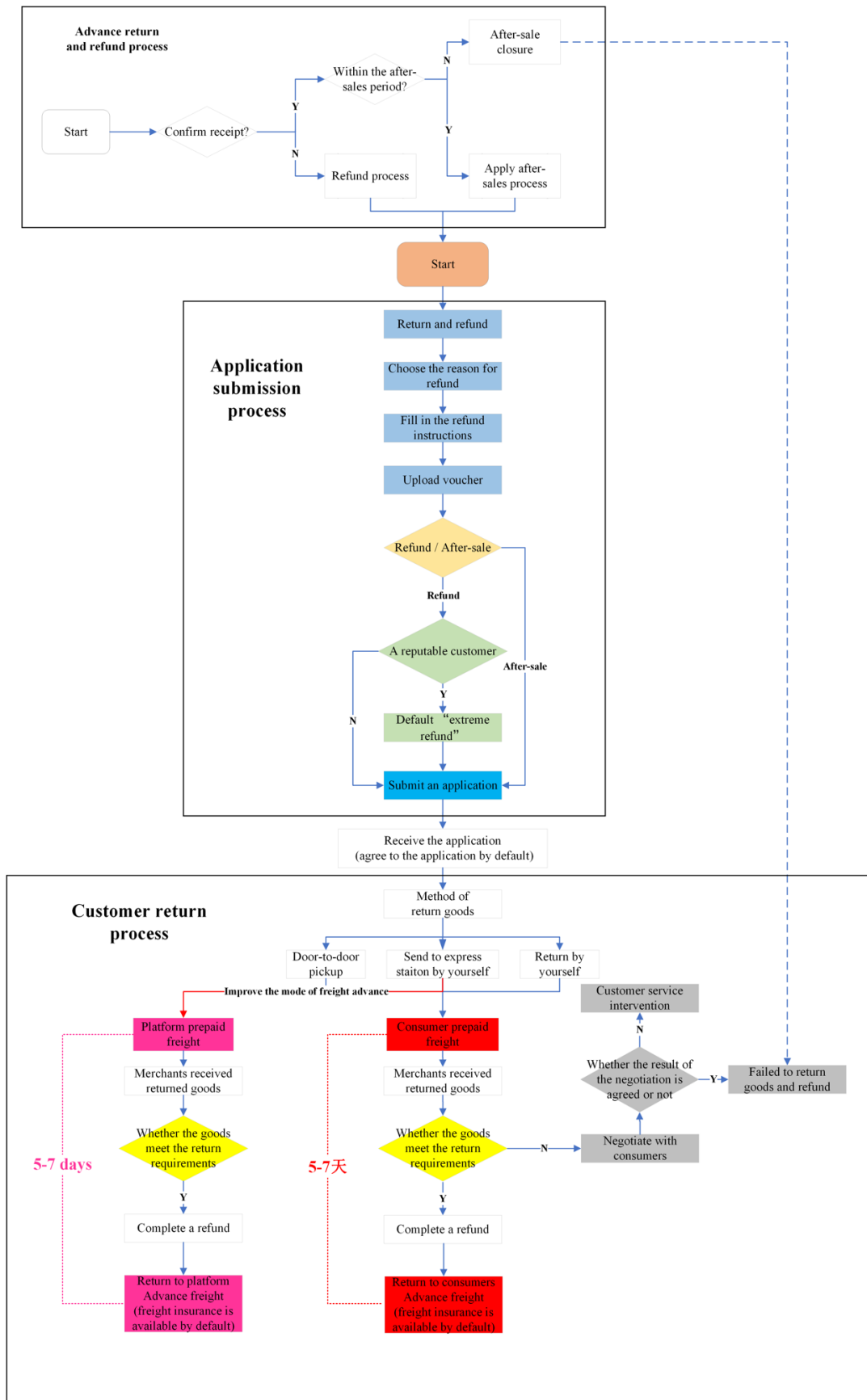


Figure 6 Tmall Mart return freight advance mode

### ***5.1.2. Improve the platform service system***

#### ***(1) Improve the pre-sales customer service system***

Tmall Mart needs to reduce the possibility of return in the pre-sale stage. There are many reasons for consumers to return goods, some of which come from misleading information given by merchants. For example, color difference, exaggerated product efficacy or temporary product labeling is not obvious and so on. In view of similar situations, when consumers consult the details of the goods, the online customer service personnel must give a detailed, objective and comprehensive answer. And Tmall Mart needs to strengthen real-time communication with consumers, understand consumer needs, and help consumers make correct purchase decisions.

#### ***(2) Provide personalized services***

Help each customer who places an order to confirm the product information before the goods are sent. Tmall Mart platform can transmit the order information of the customer to the order customer through the platform customer service before transmitting the goods information to the cloud logistics center to confirm the product information. When the platform receives the final confirmation from the customer, it will send it to the cloud logistics center for subsequent delivery. This process is not time-consuming and will not affect the speed of delivery, but it will greatly reduce the chances of consumers returning goods due to wrong product information or impulsive consumption.

## **5.2. Reduce the cost of return logistics**

### ***5.2.1. Establish a centralized return logistics path***

Tmall Mart can establish a centralized return path in the original return system. First of all, set up a centralized return warehousing network. It centrally feeds back the returned goods information scattered to each logistics center to the return warehousing system, and uses the system to calculate the logistics enterprises with the return task. Then, businesses from multiple warehouses in the same area can be combined together, or led by Cainiao Logistics docked by Tmall Mart. Thirdly, a centralized return center will be established in the lead enterprise warehouse, where all the returned goods of other united logistics companies will be centralized. Finally, the return is realized by the Cainiao Logistics. But in the long run, the establishment of a centralized return and exchange center can help return logistics activities of Tmall Mart to achieve economies of scale and achieve the purpose of reducing return logistics costs.

### ***5.2.2. Establish uniform return standards and policies***

Tmall Mart should establish a complete information system of goods on sale and choose the corresponding optimal return scheme according to different commodity attributes. In addition, Tmall Mart can integrate different logistics enterprises together and set up a set of return logistics rules in line with industry norms. For example, the fresh goods purchased by consumers on the platform have the problem of suitable return due to non-consumer corruption and deterioration. Once the platform agrees to return the goods, no matter what kind of logistics consumers choose, logistics companies need to pick them up within 30 minutes. Return logistics needs to pay more to increase the logistics cost of Tmall Mart. However, if there is a relatively reasonable and consistent return policy, it can not only help consumers quickly solve the problem of return, reduce unnecessary disputes, but also increase consumers' trust in the platform and increase the probability of repeat purchases. Tmall Mart can also establish a good image and increase its competitiveness.

### 5.3. Develop contactless return logistics

#### 5.3.1. Upgrade express cabinets and develop unmanned distribution equipment

Tmall Mart can use large-capacity intelligent express cabinets and intelligent unmanned distribution tools. On the one hand, Tmall Mart needs to upgrade the existing express cabinet capacity. It can be divided into small package placement area, medium package placement area and large package placement area, so as to avoid the situation that the goods are too large to be put into the express cabinet. On the other hand, develop or introduce intelligent return system and return tools. For instance, intelligent unmanned distribution vehicles, drones, calling devices, etc., as shown in figure 7 below. This kind of intelligent tools can deal with all kinds of complex return and express delivery scenarios, such as natural environment, pedestrians, roads, other vehicles and various life scenes, which requires equipment to reflect in time and execute quickly and accurately. In other words, the distribution equipment must have a high degree of intelligence and autonomous learning ability.



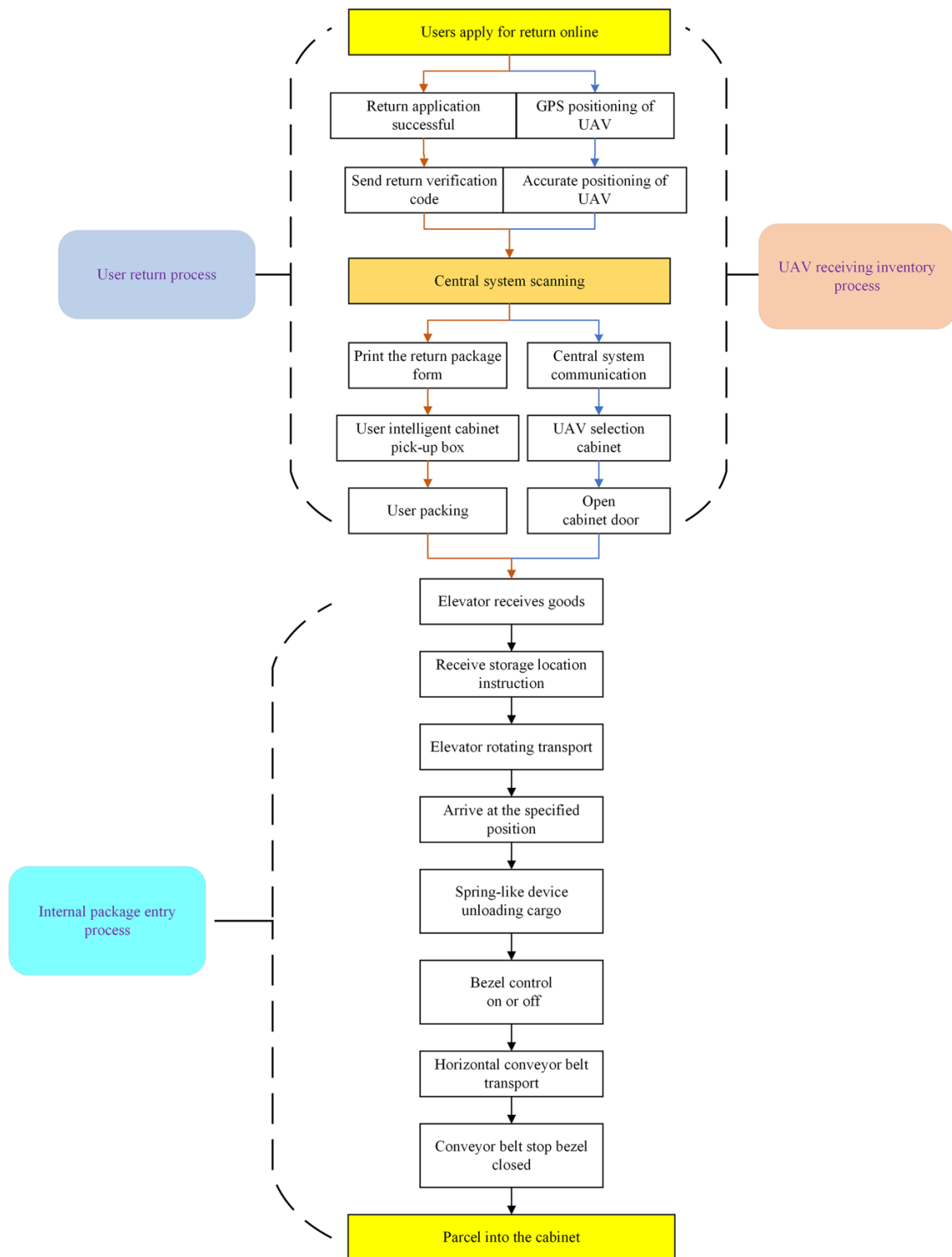
**Figure 7** Unmanned distribution vehicle

#### 5.3.2. Develop contactless return logistics system

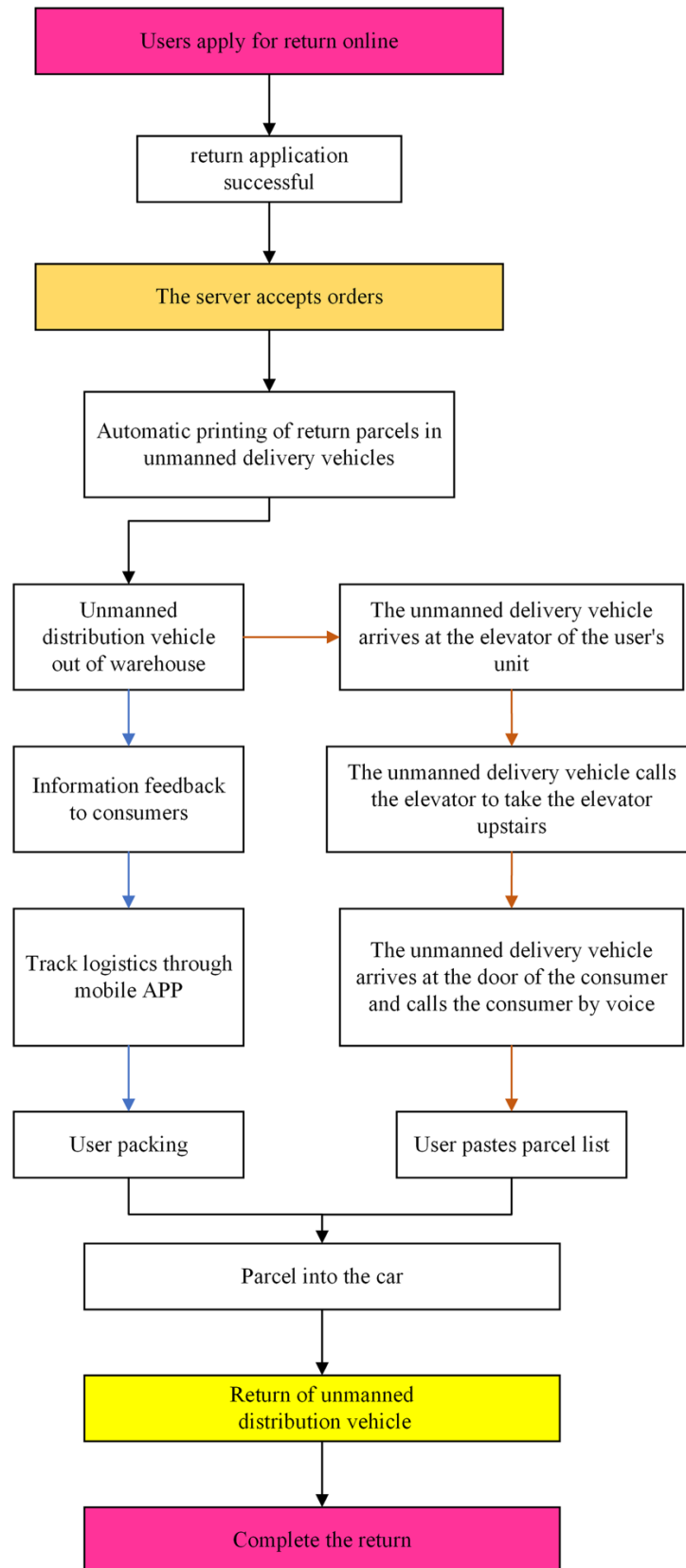
Intelligent logistics has gradually become a trend, and contactless distribution has attracted more and more attention<sup>[14]</sup>. However, the intelligent return logistics system is still in a state to be developed. Compared with the unilateral establishment of positive contactless distribution, the development of a complete closed-loop contactless logistics system is an effective way to truly achieve contactless return. In other words, the contactless return logistics is particularly critical.

With regard to contactless return logistics, some scholars have developed a patent for the use of UAV equipment with intelligent express cabinets. The patent has invented a central processing unit to coordinate drones and intelligent express cabinet systems. It used the UAV to find the delivery cabinet that matched the size of the returned package, transmitted the information of the cabinet to the consumer through the QR code, and completed the task of delivering the package<sup>[15]</sup>, as shown in figure 8. Tmall Mart can use this patent for reference to design a relatively complete intelligent contactless return logistics process of its own. The specific flow chart is given here, as shown in figure 9. According to consumers' buying habits on Tmall Mart, consumers place orders for more large parcels. Therefore, the UAV is not suitable to be the return reverse logistics distribution tool of this platform, and the relatively large unmanned distribution vehicle mentioned above can be selected. Then the part of the drone receiving inventory in figure 8 can be abandoned and the part of the internal package into the cabinet can be replaced by unmanned delivery vehicle.

When the unmanned distribution vehicle comes out of the warehouse, it can assemble the goods that need to be distributed along the way, so as to maximize the utilization of resources and save costs.



**Figure 8** Return Logistics system based on Intelligent Express Cabinet of UAV<sup>[15]</sup>



**Figure 9** Intelligent contactless return process

## 6. CONCLUSION AND PROSPECT

Tmall Mart is one of the largest B2C e-commerce platforms in China. Because of its fast distribution, it is the first choice for consumers to buy groceries online. However, the existing return logistics system of Tmall Mart is not perfect. This makes consumers unable to get a better experience in the necessary return scenarios, which is not conducive to the development of Tmall Mart. Therefore, this paper took Tmall Mart as the research object, mainly studied the mode of return logistics of Tmall Mart, the existing problems and put forward optimization countermeasures. This paper has found that the return logistics of Tmall Mart presents B2C e-commerce, self-management and logistics alliance and third-party logistics symbiotic mode. In addition, this paper has found that low consumer satisfaction, high logistics cost and lack of contactless return logistics system are the existing problems in the return logistics mode of Tmall Mart. In this regard, this paper has pointed out that Tmall Mart can optimize the existing return logistics system through update the service management mode, reduce the cost of return logistics and develop contactless return logistics. Theoretically, this paper can enlighten and guide the future research in the field of return logistics of Tmall Mart and other B2C electric commodity stations. In fact, this paper optimizes the return logistics system of Tmall Mart, which can be used as a reference for other B2C e-commerce to improve the return logistics system.

Nowadays, eco-environmental protection has become a global issue. Recovery logistics reuses resources, which is beneficial to the ecological development of reverse logistics. The future research will continue to explore the recycling logistics of B2C e-commerce platform and try to optimize the recycling logistics system of B2C e-commerce platform.

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