

## Analysis of "Last Mile" Delivery in Express Industry

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**Abstract:** As the last link of logistics distribution, "the last kilometer" plays an important role in ensuring the timely and safe delivery of express delivery and improving customer satisfaction. According to the questionnaire survey data, the existence of express industry in "Last Mile" distribution situation and distribution problems in the process of analysis, put forward to express "Last Mile" delivery of countermeasures and suggestions, provide customers with logistics services, express to create a good corporate image, create more favorable conditions for rapid for the development of the logistics industry.

**Keywords:** Express Industry; Last Mile; Questionnaire Survey

### Introduction

In recent years, along with the improvement of the domestic economic level, the rapid development of e-commerce and logistics industry, the popularity of online shopping and other lifestyle, the express industry has also achieved a good development. And "Last Mile" distribution is the final link of the express enterprise facing the customer, and is also the key stage to reflect the quality and the level of the logistics service of the electric business. However, In the field of express delivery, the main problem faced by enterprises is to perfect and perfect the logistics distribution system and provide better logistics distribution service for customers. Besides, the problems of low delivery efficiency and poor quality of service in "Last Mile" restrict the development of the express industry in China, and affect the development of logistics and e-commerce in China.

### Analysis of the distribution status of "Last Mile"

#### **The rapid development of logistics express industry provides an opportunity for the "Last Mile" distribution**

According to the analysis of China e-commerce research center, the volume of e-commerce transactions in China has surpassed that of the US as the first in the world, and the emerging economy represented by electricity supplier logistics is in the ascendant, and has gradually grown into a new economic power. In 2016, the total volume of goods logistics in China increased by about 43% compared with last year, of which the express industry was carrying 80% of the total logistics. Just like the development of logistics and express industry, "Last Mile" distribution has always been a common concern of the society. This development provides a good opportunity for the development of "Last Mile" distribution.

#### **The distribution tradition of "The last kilometer"**

In this paper, questionnaires were used to collect information, 160 questionnaires were issued, and 143 were recovered, of which 142 were valid. The data on the way of distribution is specific as shown in Fig. 1:

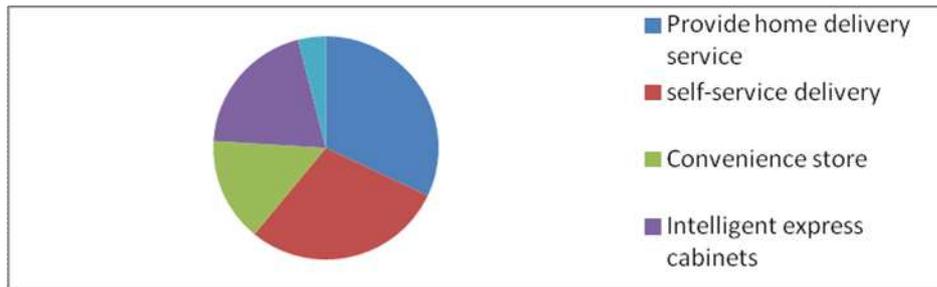


Fig. 1 Distribution and express way map

According to the questionnaire: Express companies generally take two methods for the "Last Mile" distribution: door-to-door and self-service delivery. Courier delivery accounted for 32%, the convenience store cooperation and self-service based independent delivery accounted for 44%. Therefore, the courier door-to-door delivery and convenience store cooperation and self-delivery point-based self-delivery is the main means of distribution.

### Analysis of the Problem of "Last Kilometer"

#### Poor Traceability of Distribution Information

According to the questionnaire, this paper analyzes the feeling of the logistics tracking service on the Internet, which is currently used by customers. The specific situation is shown in Fig. 2:

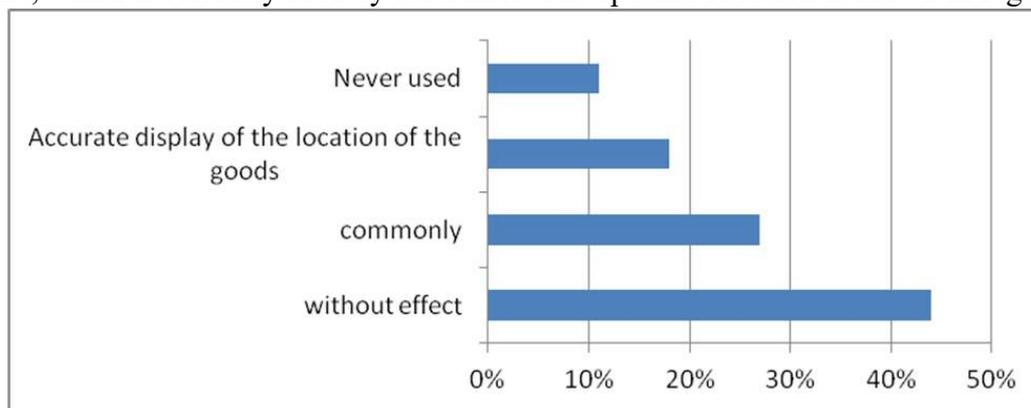


Fig. 2 Customer's perception of the current logistics tracking service on the Internet

According to figure 2, we can see that the accuracy rate of logistics tracking service information is only 18%, 27% think that generally, 44% of customers think it has no effect and 11% of customers have not used it. It can be seen that logistics and distribution information can't be timely feedback to customers, with poor traceability. Customers are not satisfied with the current Express online logistics tracking service.

At present, China's logistics "Last Mile" distribution receiving stage is usually signed, and the courier usually does not scan the terminal, which is not conducive to the comprehensive investigation and tracking of the express business by the electricity supplier. First of all, security is not high, sometimes being misled or express impersonator phenomenon, sometimes the complaints found only when the express delivery was sent to the right person. Secondly, the timeliness of distribution is not high. For example, the goods have arrived at the location of the customer's distribution, but have not received distribution information, the customer can't get the express delivery in time. Thirdly, it is the problem of customer privacy. As there is the name and phone number of the customer on the express. If the customer is not properly handled, the information will be leaked and easy to be used by the lawless elements.

#### Relative backwardness of distribution and transportation

At present, in our country's "last one kilometer" distribution, most of the small tricycle is used as a delivery and transportation tool. Generally, the volume of the tricycle is small and the space is insufficient. Once when the peak express enterprise workload will suddenly increase, there will be a warehouse explosion phenomenon. However, the number of express personnel is limited, and the workload must be tens of times larger than usual. In order to save the time of distribution, the

courier will try to complete the delivery package at a time when the delivery of the goods is large. In this way, there will be too much accumulation of goods, extrusion of goods, overloading of vehicles, and so on. In addition, the safety of the dispatch of tricycle is not high enough, the anti-theft facilities are relatively poor, and the situation of express loss may appear.

Low delivery efficiency

The time situation of the courier and the customer is specific to Table 1:

Table 1 Delivery schedules for express and customer

category	Working hours	
Courier	AM 7:00-PM:6:00	
Customer		
Working group	AM 8:00-12:00	PM 2:00-6:00
Student group	AM 8:00-12:00	PM 2:00-9:00

According to table 1, In distribution, the time of the courier to go to work is similar to most of the time for the customer to work. The "Last Mile" distribution is low, mainly because there is a serious conflict between the delivery time of express delivery and the customers. For most of the working people, the courier is also off duty when he comes home from work. The courier will deliver the next time, and the efficiency of express delivery will be significantly reduced. College students are basically attending classes during the day, so they are unable to pick up the courier in time. So the couriers must wait for the students to receive or deliver again, resulting in the two distribution waste in manpower and time.

**The quality of distribution service needs to be improved**

The quality of distribution service is the key to the "Last Mile" distribution, so the customer's service satisfaction must be paid attention to. The survey of express service satisfaction is shown in Fig. 3:

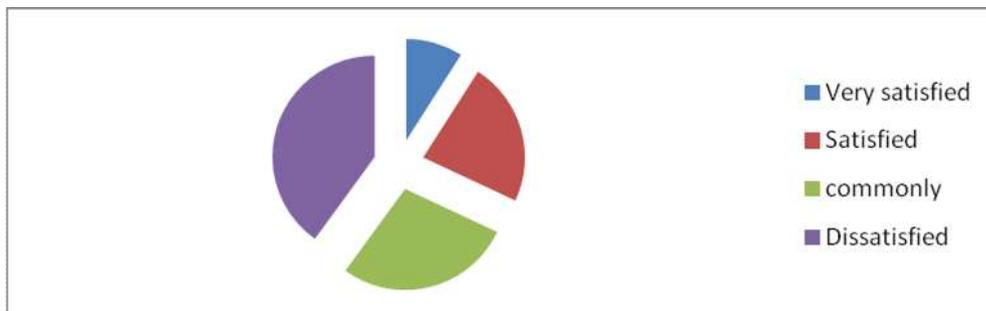


Fig. 3 Customer satisfaction with express service

According to figure 3, the customer satisfaction with express service is only about 30%, more than 20% of the customers think it is general, and the dissatisfaction is as high as 40%. Most customers are not satisfied with the delivery service of the "Last Mile" delivery service, and there are many complaints.

Express delivery service quality is not high, mainly because of the distribution of the operation is not standardized, such as delivery, many couriers will send the goods on the floor, when customers to express parcels, sometimes have to rummage, not only a waste of time for customers, and it is very easy to be misled by express. Sometimes, when customers find their express, they often find that their products have been damaged by big or small, which are the reasons that customers are not satisfied with the express service.

In addition, the customers also have certain requirements for the express package. Specific survey data such as Fig. 4:

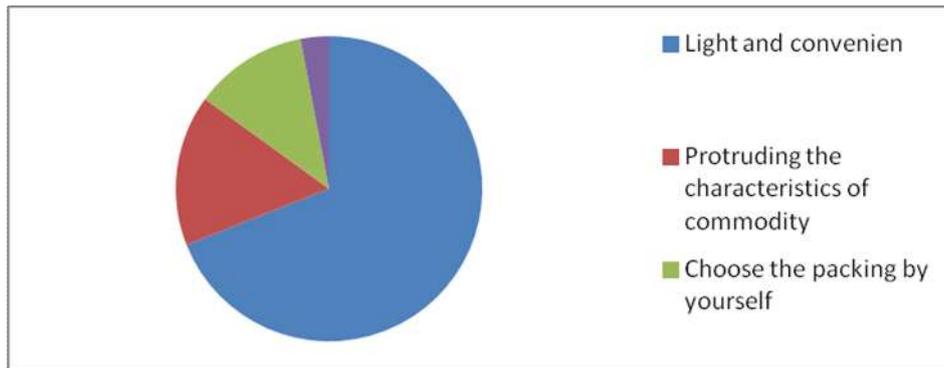


Fig. 4 Customer's request for express package

According to figure 4, we know that customers have certain requirements for express packaging, 69% of customers choose lightweight and convenient packaging, 16% of them choose packaging that can highlight the characteristics of products, 12% of customers want to choose their own packaging. Nowadays, there are many logistics companies, and the packaging of each express company is very different, but now the express package is too simple or inconvenient to carry. If we can't satisfy customers' needs for express delivery, customers will not have a good understanding of different express companies, which will reduce customer loyalty to the company.

### Analysis of delivery Countermeasures of "Last Mile" delivery in express industry

#### Strengthening the information management system

##### Developing logistics APP

The express company is not perfect enough to maintain the relationship with customers. And it is not enough for potential customers and old customers. Mostly it is not clear that customers' needs change at different time periods. With the establishment of APP, we can develop the relationship between application and new and old customers, and get information feedback from customers in time, so that logistics companies can do better and go further.

APP has the basic information module of the customer, such as customer name, sex, mobile phone number, distribution address, etc. R & D customer demand feedback system, real-time understanding of all aspects of customer needs, and timely make corresponding countermeasures. It also has a post service information feedback system, and the customer can evaluate the logistics speed, the satisfaction of the goods, the attitude of the service staff and so on after receiving the service.

##### Creating a management information system

We should set up the information exchange platform and ensure the sharing of information among the enterprises. It should also have the function of financial final accounts to ensure that the cost and income of each link can be correctly calculated, so as to realize the accurate and timely settlement of the net. To have a public base database for the unified management and maintenance of public basic data. It is necessary to have a strict information security system to ensure that the malicious black horse attacks can be eliminated and the information of the users is leaked. Evaluate the express company through the feedback of the complaint, and finally carry out rewards and punishment measures to the express company.

#### Amelioration of distribution facilities

##### Unify vehicle specifications

Now the size and size of the logistics vehicles are not uniform, and there is no unified vehicle arrangement. Logistics companies should arrange vehicles in a unified way, form a standardized mode, and do some safety measures for vehicles, set up location facilities to make customers clearer about the trend of express delivery. The goods will be collected more timely and effectively prevent the loss of goods.

### **UAV distribution**

The UAV delivery can meet customers' demand for delivery on demand and rapid Daily supplies can be delivered on demand by UAV, which brings another possibility to electronic logistics. More and more UAV send water The use of UAV, as long as the weather is not bad, can fly directly to the destination, delivery faster and more efficient; The UAV is powered by electric power, energy consumption is small, and it is more environmentally friendly. As the technology is more and more developed, the distribution of UAV will be favored by more people.

#### **Use the new distribution mode to improve the efficiency of distribution**

Set up intelligent express cabinets

The cooperation of intelligent express cabinets, express enterprises and e-commerce enterprises can win a win-win situation. Express companies and e-commerce companies to carry out strategic alliances to work together to develop a more intelligent cabinet. Train and guide the courier, improve the convenience, operability and safety of intelligent express cabinet, enhance customer experience, make customers willing to use intelligent express cabinet, change the traditional way to receive express. We can Cooperate with e-commerce brand, obtain user information from e-commerce enterprises, and understand market demand and developing subsidiary products of intelligent express cabinet. It can also cooperate with advertisers to insert some ads in the box of intelligent express cabinet, increase the attached value of the smart express cabinet, and earn extra advertising expenses.

Cooperation with community convenience stores, residents' committees, or property

The logistics company can store all goods that can not be collected in real time in a community convenience store in the community convenience store, which not only solve the problem of logistics "Last Mile" distribution but also improve the utilization rate of storage facilities in community convenience stores, increase the traffic volume for them, and achieve mutual benefit and win-win for both sides. The express company can cooperate with the residents' committee or residential property, and can make full use of the resources of the neighborhood committee or property to reduce the human cost.

Setting up a rookie station in Colleges and Universities

Nowadays, young people are accustomed to shopping online. For example more and more students do not carry their luggage at school or graduation, but they send them home or send them back to them by express delivery. Daily necessities of daily life are also more likely to be purchased online. Service quality and distribution efficiency are the most important winning indicators in the competition of logistics Express Platform in Colleges and Universities. The advantage of the rookie post station is quite obvious in the high efficiency of the delivery. Under the support of the rookie system, it can basically solve the problem of the express car in the campus, and can also solve the problem of the teachers and students taking the express delivery in class. The rookie post station not only facilitates the school and students, but also saves the cost of the "Last Mile" delivery for the express enterprise.

#### **Strengthen the degree of attention and improve the quality of distribution service**

Improving the quality of distribution personnel

In view of the low cultural level of express courier, the company should train the staff regularly for professional service. The distribution personnel should dress uniformly, leave customers with professional, clean and friendly images, and adopt polite and friendly words when talking with customers, so that customers can feel happy when receiving courier. We should also develop customer service standards and rewards and penalties system, which can motivate distribution personnel to better serve customers, or avoid unnecessary disputes. During delivery, the courier should establish good relationship with customers, to create good corporate image for logistics companies, and lay a good foundation for the smooth development of logistics companies.

Standardization and unification of packaging

The standardization and unification of the packaging of goods will help to realize the smooth transport of goods, save time and reduce the cost of transportation. Express company should make light and convenient, standardized and unified packaging. Lightweight and convenient packaging

also helps to improve customer satisfaction, so that customers can have a good impression on the printed labels of printed logistics companies, which is also able to enhance customer awareness and interest in logistics companies.

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