

# **Last Kilometer Distribution Pattern Analysis of Electricity Supplier Logistics in Chinese Mainland**

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**Keywords:** Distribution pattern, electricity supplier logistics, Chinese mainland, the last kilometer

**Abstract.** In recent years, some of these electric logistics companies and researchers of related organizations at home and abroad, have been doing a lot of work on problems the Last Kilometer distribution of electricity supplier logistics exists, and have obtained corresponding study achievements. Among them, the application in Germany intelligent package transceiver station system of DHL air Cargo Company is a typical example, and it has changed from the previous unitary distribution model to diversified and intelligent distribution model. Although this model is very good, the environment has put forward certain requirements. In China, it cannot be directly applied, but we can learn useful experience in our favor and make the actual situation of China's mainland customer groups as the base, and establish intelligent self-lifting containers, service collection points and delivery model to meet current electricity supplier development needs of the times.

## **Last Kilometer delivery environment of electricity supplier logistics in Chinese mainland**

E-commerce is information technology and networking product in the 20th century, and a new business model. In the information age, the application of Internet and big data is in a rising trend, and the popularity of the Internet. On this basis, E-commerce has obtained a wide range of applications and development, as long as the Internet can be achieved, the online trading activities can be taken, and the online trading is not lot worse than traditional trading. China developed new rural construction to achieve the villages project, corresponding facilities have also been further improved, particularly in the overlay network, and the new generation of farmers learned the online trading of agricultural products and online shopping, although the volume is lower than in urban areas, its customers and volume is increasing every year. Followed by the Last Kilometer distribution tasks which can be imagined.

Chinese population is concentrated mainly in cities, most of which have relatively simple life way, namely, the distance between the workplace and home is also the main Last Kilometer distribution range of electricity supplier logistics. Although the distribution location is relatively simple, customer often cannot receive normal receipt in practice. The main reason is: in normal working schedule, the community mostly elderly or children; and for some high-end communities, there is more stringent management, and outer workers are difficult to enter the community. Secondly, the unit is usually not allowed to send and receive personal belongings during working hours. Last Kilometer delivery staff of electricity supplier logistics cannot consult with customers, guard or janitor room, for the staff of guard or the janitor's room, placing the customer items here intangibly increases workload but also bear some risks. If there is cargo loss, stole, error-took and some other phenomena, it is bound to cause resentment of relevant personnel.

Compared with the urban population, rural population is naturally not so concentrated, and the living way is different, basically exclusive single-family. Some villages have only a few families or even only one family in the hills or in remote areas. For today's electronic commerce age,

although online trading in rural areas has a clear upward trend, the logistics business is a severe test. If the Last Kilometer delivery issues are not well, it will also increase their costs. For example, customers in rural areas buy a commodity of a few yuan online, the last kilometer delivery personnel of electricity supplier logistics has to drive a few kilometers or even longer journey, which is a bit unrealistic. Thus, for the distribution range of rural electricity supplier logistics last kilometer, with the exception of China Post's EMS, the farthest place of other logistics companies can only deliver to the township streets, then by the customer from mentioning. The China Post has no dead end structure, which cannot be ignored for any private express delivery companies, and they should learn from each other to make their own service characteristics and better service delivery.

Online shopping is a more stylish and convenient way to shop. When customers buy goods on the Internet, they will prefer the same kinds of commodities with equal price and free shipping business. If you do not support this service, customers will want to be able to pay cash on delivery terms in order to reduce the risk of shopping. However, this service approach is in the minority, mostly paying the freight in advance. Another service is the free shipping service mentioned earlier, in fact, the so-called free shipping freight business has included it in the commodity prices which are part of the cost of goods. But to the customer psychology, it brings benefits.

At this stage, China is still a developing country, although people's living conditions continue to improve, compared to some developed countries in Europe and America, there is still a gap. Among them, private car ownership is rising year by year, road traffic congestion has still not been solved. Therefore, customers want electricity supplier logistics to provide door to door service, or service that sets up collection points in the community. In summary, the characteristics of the last kilometer delivery environment of e-commerce in China mainland at this stage include: First, the huge customer groups, the urban relatively concentrated and rural scattered, involving a wide range; second, time differences in receiving goods, picking inconveniently; third, the transportation is not convenient, desirable to provide door-to-door service.

### **Electricity supplier customer groups division in Chinese mainland**

The popularity of Internet and the widespread use of smart phones, led to that electric business customer group's category is more and more, but in general, it can be divided into four categories: unit staff, students, rural and other personnel.

The first customer group is unit staff, which mainly refers to service personnel in enterprises and institutions, government agencies, people's organizations and other so on, whose main characteristics are: First, the working time is generally not permitted to handle private things, such as receiving delivery; Second, customer groups are large, but the workplace is relatively scattered compared with student apartment; Third, the shipping address is clear with the majority of small items.

Thus, such groups have difficulty in sending and receiving the goods, hoping to raise a container or through intelligent janitor to solve the problem. Electricity supplier logistics companies can provide corresponding service measures for different situations, such as building intelligent mention containers in units or communities sending and receiving large number of cargos; on the contrary, a small number of customer needs can be done by reception or janitor room, to meet customer needs as soon as possible.

The second category of customer groups is students, which usually refers to students enrolled in colleges and universities, whose characteristics are four: First, the residential form is apartment which is focus; secondly, the class time of each class is not uniform, but the time during the break is more and uniform; again, the major groups buy shopping network products with small size

and low price; finally, send and receive goods outside concentrate, and non-school personnel is prohibited from wandering in and out of campus.

Therefore, for the student population, it is unable to provide door-to-door service, and the more effective method is to create self-service lockers in every apartment. In addition, the popularity of smart phones leads to that the students can simply sweep the two-dimensional code on the self-service locker to achieve sending and receiving flow of goods, which not only facilitates the student customer groups, but also improves the efficiency of logistics and distribution, also avoids items loss, error taking and some other phenomena.

The third group of customers is rural people, which mainly refers to that the transceiver of the goods is in the rural areas, and the characteristics of these customer groups are: first, the network coverage in rural areas are gradually comprehensive, and online transactions increase year by year, but still below the city; second, shipping address is relatively dispersed with high distribution costs; third, people are in the field work at the busy season, with no one at home to receive the goods.

Thus, we can build fixed point of service in the rural township streets, but also establish cooperative relations with the postal towns or large supermarkets, shops, also can set up self-help lift container to facilitate the rural people to send and receive goods.

The fourth category of customers is other personnel, which mainly refers to the home office staff, full-time wife, and the elderly and so on. The main features of such customer groups are: First, online transactions of goods are various with large sizes; Second, there is plenty of time, you can achieve door-to-door service; Third, there is more casual time of receipt, with delivery to the door.

Thus, we can see that it is difficult for the electricity supplier customer groups to adopt last unified kilometer distribution model. The best distribution program is using different distribution model with respect to different customer groups, to maximally meet the different needs of the same or different types of customer groups.

### **Last Kilometer integrated distribution pattern of customer-centric electricity supplier logistics**

Drawn from the analysis of customer groups division and characteristic, the last kilometer distribution problem in China mainland electricity supplier logistics is: the distribution costs and time differences and goods from convenience, combined with China mainland e-commerce customers, we conduct a comprehensive analysis of the specific circumstances of groups, as well as the last kilometer delivery environment and development of the electricity supplier logistics. Studies suggest that: the establishment of intelligent self-extract container and artificial diversity indirect distribution model and the integrated distribution model combined artificial receiving and direct home delivery can meet the needs of the domestic status quo of the current e-commerce, and achieve the customer-centric electricity supplier logistics last kilometer integrated distribution model. Most of its distribution terminal is divided into three modes: First, artificial delivery point; Second, the automatic lifting containers; Third, delivery.

In the aforementioned section, customer groups are mainly divided into staff of units, students, rural and other personnel. These customer groups have different needs for electricity supplier logistics last kilometer delivery mode, even the same kind of customer groups often have different service needs. Thus, the integrated distribution model of customer-centric electronic business logistics last kilometer basically summarizes the various groups of different individual needs, with a flexible and effective way to solve the distribution problems between customer applications and the last kilometer to achieve best mutual benefit.

For the establishment of intelligent self-extract container and artificial diversity indirect

distribution model, the core problem is the location. On this issue, we should fully consider the convenience of the customer receiving the goods, to the extent possible to take care of all the customers nearby. For example, communities usually have more than two outdoors, you can create a variety of indirect distribution model in the vicinity of each gate, with the principle of the nearest for convenience of customers. Therefore, combined distribution pattern of intelligent self-extract container and artificial containers has meaning.

The core content of last kilometer integrated distribution model of customer-centric electronic business logistics is for the convenience of customers, to meet the distribution needs of different customers, and improve service quality. And on this basis, with the maximum optimization of last kilometer logistics resources configuration, it will reduce distribution costs, avoid the loss, wrong or take delivery failure of the cargo that occurred during distribution. Achieve the lowest cost of logistics companies can make customers enjoy the highest quality of service, which adapts to the rapid development of the electricity supplier logistics.

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