

## Optimize the “last mile” delivery model

Peng Qian<sup>1</sup>, Yao Weiding<sup>2</sup>, Li Hongwang<sup>1</sup>

<sup>1</sup>Anhui San Lianuniversity, Hefei 230601, China

<sup>2</sup>LCFC (Hefei) Electronics Technology Co.Ltd.230601, China

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**Abstract:** The concept of “last kilometer’s-commerce logistics has been put forward. Researchers of electric logistics enterprises and related institutions have made a great deal of research and practice, and have made great achievements. However, there are still some problems that exist between the “last kilometer” distribution model and the customers. The differences are between the rural areas and the community, and the diversity of different customer groups. Based on the present situation of distribution and the classification of customer groups, the author puts forward an effective solution to meet the current needs of the development of customer relationship.

### Introduction

E-commerce is the product of information and network in twentieth century, which is a new business model [1]. Today, there is a complementary relationship between e-commerce and logistics. Therefore, the electronic supplier logistics for China's urbanization and the construction of new countryside play an important role in promoting. On the other hand, making the network cover the vast areas, so that meet the needs of China's new generation of farmers online trading agricultural products and shopping. On the "last mile" distribution model it put forward higher requirements, because it is the last and most critical step to complete an activity.[2]

Rural residents in China residential areas are scattered, who are between the mountains and remote areas of rural households are far apart, but the online transactions are not influenced by the geographical environment. It increased year by year instead. Therefore, the electronic supplier logistics of last mile distribution model is particularly important. If the problem of the last mile distribution has not been resolved, this will increase the cost of the enterprise [3]. For example, a customer from the countryside buys a cheap commodity online, delivery personnel needs to drive to more than 10 kilometers or even farther place in the "last mile" to deliver the goods to the customer, thereupon the distribution cost is very high. At present, in addition to China EMS, the others cannot do the electronic supplier logistics that re extend everywhere, any private courier companies that cannot be ignored [4]and should learn from each other, so as to make the delivery service optimized.

Compared with our countryside, living environment in the community is relatively dense, and lifestyle is relatively simple, that is the unit and the community, which is the electronic supplier logistics last mile, the main distribution range. Although the distribution site is relatively simple, but in the actual distribution it can't meet the needs of customers better, the main reasons are as follows:

1. In the normal working hours, the consignee cannot accept the goods or take delivery of goods in person.
2. As for some high-end communities, management of going out and going in is strict. People outside the community experience troublesome procedures.
3. It is not convenient for staffs to deliver and take personal items during the office time.

In view of the above situation, the delivery personnel of the electronic supplier “last mile” logistics had to negotiate with customers, goods will be placed in the cargo Department or related department (room); the staff will share the workload invisibly, but also bear certain risks; for customers, if the goods are lost, stolen, or took carelessly, this will inevitably lead to three party's prevarication and dissatisfaction.

From the countryside to the community, it can be concluded from the status quo of distribution of electronic supplier “last mile” logistics, the main features are as follows: First, the community has a large number of customer groups and is relatively centralized; rural customer groups are scattered and cover a wide range. Second, the time of receipt of goods between in rural areas and communities differs, inconvenience. Third, rural transportation is not convenient so that it can't provide door to door service.

### **Different customer groups and distribution model**

The popularity of the Internet and the widespread use of smart phones, electronic supplier customer are more and more, but generally speaking it can be divided into four categories: workers, students, rural personnel and other personnel [5].

The first type - workers, mainly refers to enterprises and institutions, government agencies and other staff. Due to the nature of the group's work and the constraints of the rules and regulations of the unit, there are difficulties in the delivery of goods, hoping to solve the problem by intelligent self-service delivery cabinet or the relevant department (room). Electronic supplier logistics can provide the corresponding service measures according to different situations, such as a large amount of material delivery units can establish intelligent self-service delivery cabinet; to do not satisfy the conditions of the unit through the post office or the relevant department (room) to complete a small amount of customer demand, customer receipt convenience will be put in the first place.

The second type of customer groups - students, usually refers to the college students. As everyone knows, in addition to groups of students in the classroom, the rest rests in the apartment. Owing to the two places of the delivery, staff is unable to provide door-to-door service, effective method is to build intelligent self-service delivery cabinet in every apartment, Students scan QRcode in self-service delivery cabinet by smart phone. Not only does it bring convenience to the customer groups of students, but also improves the efficiency of logistics and distribution of goods. At the same time, it avoids the occurrence of loss and taking goods by mistake.

The third type of customer group - the rural personnel, mainly refers to the delivery of goods in rural personnel. Such a large number of customer groups scattered everywhere, meanwhile, high cost of distribution, and most of the time are spent in the field of labor. Especially in the residential place, none usually take goods. According to the current unique rural phenomenon, we can set a fixed point of service in the township streets, towns and establish the relationship with post office, large supermarkets and shops. Even we can install intelligent self-service delivery cabinet so that it can bring convenient to rural personnel when they receive goods.

Fourth type of customer groups - other personnel, mainly refers to the office staff, full-time wife, the elder and etc. This type of customer group consumes more goods and has plenty of time, they need door-to-door service. Thus, we know that it is difficult for the electronic supplier” last mile” logistics to use a unified model. The best distribution scheme is to pick out different distribution modes according to different customer groups to meet the needs of the same kind of group or different kind of group..

### **“Last mile” integrated distribution model**

According to the above analysis of different customer groups, it is apparent that the problems of the electronic supplier logistics exist. The reasons are as follows: the distribution cost, time difference and goods extraction convenience, combined with the comprehensive analysis of the last mile distribution status quo and logistics development. Study shows: set the comprehensive distribution mode of diversified and artificial intelligence delivery cabinet, manual receipt and direct delivery with door-to-door service. It optimizes the traditional distribution mode. The final distribution is mainly divided into three modes: first, artificial auxiliary delivery points; second, intelligent automatic delivery cabinets; third, door-to-door service.

In this paper, different customer groups have different demands on the "last mile" distribution mode. Even if the same type of customer groups have different service needs. So, the optimized “last mile” distribution mode basically summarizes the personalized needs of various customer groups in different application modes, taking advantage of flexible and effective methods to solve the distribution problem of customers and the “last mile” distribution. In the end, it changed the traditional single distribution mode to improve mutually beneficial comprehensive optimum distribution model.

The most important problem is the efficient use of resources, and the convenience of the customers' demand for receiving and dispatching the goods should be taken into account in the establishment of the intelligent indirect delivery mode. As a result, the distribution mode of this kind of intelligent self-service delivery cabinet and artificial auxiliary delivery plays an important role.

The core content of “The last mile” integrated distribution model is to benefit customers to meet the needs of different customer distribution, improving service quality. And on this basis, it optimizes the last mile logistics resources allocation to a large extent and reduces the cost of distribution, but also avoids the occurrence of the goods that are lost, took by mistake or distributed abnormally in the process of distribution. Electronic supplier logistics achieve the goal of the lowest cost of distribution. At the same time, customers also enjoy the best quality service. So, it will be easily adapted to the rapid development of China's electricity supplier logistics.

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