Pattern Construction of Rural E-commerce Logistics Distribution Based on Telpher Technology Plus

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Abstract. Firstly, a new distribution pattern of rural e-commerce logistics based on "telpher technology plus" is established in this paper. Secondly, an applied case of rural E-commerce logistics based on "telpher technology plus" is given. Finally, it is point out that the distribution pattern can effectively remove, under some circumstances, the problems of the rural logistics distribution "last one kilometer," etc.

Introduction

Rural E-commerce as a new industry which has changed the Chinese rural economic development mode and the farmer’s production and life styles plays the important role to promote the agricutrual modernization. With the advancement of the urbanization process, the rural network coverage has been constantly increasing, the result is that there are many rural E-commerce models such as Taobao model, JD model, Lecuntao model, etc. However, the development of rural E-commerce is also facing the severe challenges such as the rural backward infrastructure, the high operating cost of E-commerce logistics, the low large-scale and standardization and so on. Then logisitics that is the important carrier has become the weakest link of the rural E-commerce development, the main focuses are that the rural logistics system is not complete, the third-party logistics has not fully developed into the small towns and contrysides, the rural E-commerce logisitics is facing the strait of "long logistics chain plus low consumption density", meanwhile, the transportation infrastructure is inadequate, the current distribution model which does not adequately conform the social logistics resource cannot form the effective scale effect, the distribution "bottleneck" problem of the rural E-commerce logistics "last one kilometer" restricts the development of this industry. Actually, "cable car technology plus" is applied to remove the difficult problems in the rural e-commerce logistics, such as the distribution "bottleneck" of "last one kilometer".

The Construction of A Distribution Pattern for Rural E-commerce Logistics Based on Telpher Technology Plus

Telpher transportation is a kind of aerial transportation modes. The so-called "telpher technology plus" is the use, join or introduction of aerial cableway transportation (cableway distribution transportation or telpher distribution transportation) technology. Fig.1 is the layout diagram of logistics sub-centre, distribution sites and logistics corridor parts in villages, which is actually the core block diagram of rural e-commerce logistics distribution system based on “Telpher technology plus" for the current situations in some villages. And, the
important functions and concepts related with the parts in Fig. 1 are explained and illustrated:

①, ②, ③, and ④ in Fig. 1 are the serial numbers of the logistics corridor telpher routes. Generally, there are many telpher logistics corridor routes, there are four routes here. The logistics sub-centre 1 is set up in the logistics centre in the areas Picture 1, and the other areas also have their own logistics centre. The delivery method that the goods from the different areas are delivered to the logistics sub-centre 1 is the ground transportation mode using the road vehicles. This delivery mode that the distribution centres deliver the goods to the customer receiving centre is a more properly used transport mode in this area.

![Diagram of Rural E-commerce Logistics Distribution Based on Telpher Technology Plus](image)

Figure 1. A chart of Rural E-commerce Logistics Distribution Based on Telpher Technology Plus.

The distribution centres are combined the distribution sites with the supermarkets in villages, then they not only obviously reduce the investment in the construction of distribution centres but also help the logistics centres supply the goods to the supermarkets in villages. Actually, the logistics distribution system based on “telpher technology plus” of rural E-commerce logistics pattern in Picture 1 not only can complete the distribution but also accomplish the reversal logistics operation.
Applied Case of “Telpher Technology Plus” of Rural E-commerce Logistics Based on Cloud Distribution

Figure 2. Some Village and Its Landscapes in Fujian Province.

In order to efficiently solve the bottleneck problem of logistics distribution "last one kilometer" in the village illustrated in Fig.2, there are many methods, for example, using road transportation, using unmanned aerial vehicle and depending on aerial "telpher technology plus". The follow is the applied case of choosing "telpher technology plus" to solve the bottleneck problem of logistics distribution "last one kilometer" in this village. The construction planning program of the logistics distribution system depending on the aerial cableway in some village in Fujian province, as shown in Fig.3.

Figure 3. A-road, B-branch road, C1-route 1, C2-route 2, C3-route 2, C4-route 2, D1-village 1, D2-village4, D3-village 3, D4-village 4, E1-distribution site 1, E2-distribution site 2, E3-distribution site3, E4-distribution site 4, F1-logistics sub-centre 1, F2-logistics sub-centre 2, F3-logistics sub-centre 3, F4-logistics sub-centre 4, G-river.
Fig. 3 is logistics distribution system construction plan depending on aerial cableway mode of Fig. 2.

Route 1, Route 2, Route 3 and Route 4 in Fig. 3 are the logistics corridor route numbers of the aerial cableway. Generally speaking, there are many aerial cableway logistics corridor routes, here there are four routes, among them, Route 4 is the longest aerial cableway.

The 4 aerial cableway logistics corridor routes in Fig. 3 link the logistics sub-centre in this area to the different villages or the distribution centres in the different villages in this area. The linking advantage mainly helps reduce the construction cost and accomplishes the fast distribution.

In Fig. 3, the basic procedure of logistics distribution in logistics distribution system is that the goods distribution is delivered to the respective distribution centre with the fastest speed by the logistics sub-centre through the 4 aerial cableways. Then, the four distribution centres deliver the goods to the customers or put in the inboxes with the fastest speed through the most proper mode. The inboxes are generally set in or near the places of the customers’ receiving goods, and the goods put in the inboxes are taken by the customers themselves.

In Fig. 3, logistics distribution pattern can make the reversal logistics and also receive the produce. Additionally, it combines the businesses such as going out, traveling, etc.

Obviously, Fig. 3 is the construction planning program depending on the aerial cableway to solve the bottleneck problem of logistics distribution "last one kilometer" in this village.

Summary

In China, innovating or creating the rural tradition logistics distribution modes in rural areas depending on the advanced technologies such as telpher technology plus can effectively reduce the rural logistics distribution cost. And, under some circumstances, can also solve the problems of the rural logistics distribution "last one kilometer," etc.

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References


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