

Research on logistics distribution networks of online retailers

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Abstract: With the rapid development of the online retailer, the logistics more and more become its bottleneck. Because of lack of specialized third-party logistics entrepreneurs, the logistical cost of online retailers is high and the service quality is low. Which method of logistics the online retailer should select becomes the most important issue. Based on theories and practices, we aim to study the networks model of logistics distribution in our country.

Keywords: Online Retailer, Networks of Logistics Distribution, Self-Service Packstation

1. Introduction

As data show, the quantity of Chinese netizens will reach 4.57 billions, the quantity of the users who shopping online will reach 160510 thousands(2011). Shopping online is more and more famous to the network users. In the year of 2010, the quantity of Chinese online retail reached 513.1 billions yuan, which has doubled than the year of 2009, and which is approximately 3 percents of the total of social retail(Wen & Yu, 2009). Online retail is becoming an important power of economic development. However, a important complication of the users disgruntled to shopping online, is the existing mode of logistics distribution trail to the network retail trade development. In the research about disgruntled, 21.2 percent of users consider that the delivery time is too long, 15.7 percent of users consider that the couriers have bad service, and 10.8 percent of users consider that the charge of freight is too expensive(Shi & Cui, 2008). Online retailer urgent needs suitable mode of logistics distribution.

2. Trait of logistics distribution networks

Whether based on the shopping mind of users or based on the variety of retail commodity, online retailer which have trait of its own was different from traditional retailer. It decided that the trait of logistics distribution of online retailers is different from the trait of logistics distribution of traditional retailers (Milner & Kouvelis, 2007; Rangan & Jaikumar, 1991).

(1) Because of a great variety and small batch of the commodity, distribution produced economies of scale is difficult. It was harder for distribution and higher cost of distribution, that the commodity of online retailer is mostly composed of Consumer goods and daily supplies, and a great variety of the commodity and small batch of the commodity.

(2) It was difficult to dope out that the variety and amount of the commodity ordered, and it was harder for Inventory management. Because of the convenience and random of commodity ordered online, and separate users who shopping online, the requirement online was difficult to dope out accurately, debasing the cost of logistics was impacted.

(3) Because of pressed for time, it was difficult to advance the quality of distribution. It was a important key for winning users that distribute online commodity on time. It need saving, taking and setting commodity as soon as possible, and may take commodity laying waste and losing easily.

(4) It made the process of logistics distribution getting complex and beyond control, that the place of distributing commodity is separate and indeterminacy.

3. Summarize of Logistics Distribution Networks

Summarize of logistics distribution networks means: The main objects of distribution are distribution network sites, when the commodity arrive at distribution network site, commodity should consign to the users as the mode of terminal distribution which users choice. The basic distribution process is shown in Fig. 1.

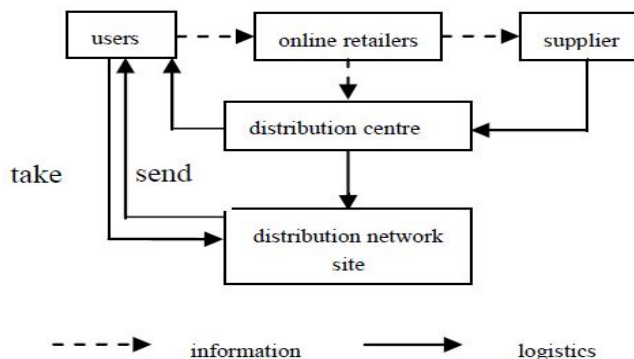


Fig. 1: Networks of logistic distribution flow chart

3.1. Trait of Logistics Distribution Networks

(1)The master of distribution was either online retailers or the third party of logistics company. It was chosen by distribution capacity of online retailers and demand of scale by users.

(2)There were two mode of terminal distribution which users can choice: the one was sending, means distribution network sites send the commodity to the place where the users appoint; the other was taking, means users take the commodity from distribution network sites on time.

(3) There were three mode of terminal distribution by online retailers: the first was sending the commodity to the place where the users appoint by distribution centre which don't need distribution network sites; The second was sending the commodity to distribution network sites, then sending the commodity to the place where the users appoint by distribution network sites; The third was sending the commodity to distribution network sites, then users take the commodity from distribution network sites on time

(4)There were three functions of distribution network sites. The first was information platform. The information from distribution network sites, distribution centre and suppliers can be shared, then actualized self-motion ordering commodity, Inventory and accounts settlement. The second was transferring by logistics. After users ordered commodity online, the commodity was sent from distribution centre to distribution network sites, then to the users, distribution was scale. The third was more service by logistics. The users can enjoy service like commodity show, cash on delivery, return and replacement commodity from distribution network sites.

(5) Distribution network sites can utilize the existing society resources like shop, florist, kiosk in the community, also can set up a special company which preside over distribution network sites. There were these conditions that distribution network sites choice the address(Netessine & Rudi,2006): The first was near the place where users live and work in order to easy to sent and take. The second was near the traffic place in order to convenience by distribution vehicles. The third was doing business as long as possible in order to take users more time.

3.2. Advantage of Logistics Distribution Networks

In contrast to existing mode of logistics distribution, the mode of logistics distribution networks have its own advantage.

(1) Reduced the cost of logistics distribution. Distribution network sites decreased terminal distribution, the distribution by vehicles only aimed at distribution network sites, advanced the efficiency of distribution vehicles,

reduced time and distance of transit deeply, reduced cost of transit. The mostly objects of distribution was distribution network site, averted sending time after time, economized the time of distribution. Unified the process of taking, return and replacement commodity, without returned commodity recycling specially, reduced the cost of commodity reclaimed.

(2) Advance quality of logistics distribution. It vehicleried out centralized distribution with the distribution network point as the distribution object, in this way, it will be propitious to intensify the controlling and intendency of the logistics distribution, reduce the mistake rate of distribution and enhance veracity of distribution. It is unnecessary to deliver the commodity in doors, can engendered miniature distribution by light-vans and microbus, abatement using non professional distribution vehicles such as bicycle and motorcycle, reduced the mangle rate of the commodity which delivered in transit, assure the commodity safely.

(3) Advance the users' satisfaction rate. Because of the mode which users taking commodity themselves, users was not critical of the time and place of distribution. When users taking commodity, they can choose return and replacement, the flow which was predigested advanced the trust rate by users. On account of using special transportation vehicles, the transportation vehicles information can be control more easily, convenient for users looking for the information of commodity on the way. Because of decreasing terminal distribution, the cost of distribution was reduced deeply, then, the commodity price was debased, and benefitted customers.

4. The Analysis of the Operational Approach of Distribution Network Point

There are two ways of the operation of distribution network point: the one is run business, which use of the existing social resources. For example, building a distribution network which close to the residents of life through supermarkets or newspaper stalls, etc. The successful case is 7-Elevenstore chain group from Japan through this way. Another one is the speciality stores, which set up the third party company or organization will be responsible for the operation of special distribution outlets, and getting profit with the professional operation. Under this way, the successful case is Germany DHL(2005) self-help package stand.

4.1. Sideline Ways--- Set up the Retailers like Convenience Stores as the Distribution Network Sites

Japanese 7-Elevenstore chain group carry out online retail business joint with many well-known enterprise. These stores open in the neighborhoods and operate the whole day that the customers are able to buy goods at any moment. There configured high speed computer workstation in the stores that the customers can choose or order the goods which have no ready stock, and they can also took delivery of the goods in any 7-Elevenstores. Hence, the stores become the media of online shopping and the logistics distribution terminal of online shopping goods.

There are several advantages as the stores to be distribution network point:

(1) Abundant network stores' resource. It's easy to find stores, supermarkets, flower shop and newspaper stands in the area of people's living and working. Whether in cities or in rural areas, whether in the community or out of the community, the small stores which are engaged in terminal retailing can be found.

(2) Close to the residents living. Retail shops usually open in the scope of the consumers' daily life and working area. Furthermore, most of them have rather long business time, especially, some stores open 24 hours a day. Therefore, with it based, can shorten the radius of distribution, reduce distribution costs, and facilitate clients to access goods by themselves.

(3) Save the investment cost of the fixed asset. Use existing social resources as the distribution network point, compared to construct the specialized distribution network point, will reduce the investment of the fixed asset and save the cost.

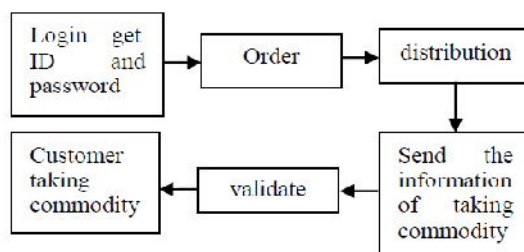
(4) Cut down the promo fees. Because the retail shops have approved by the consumers, they just need add new functionality to the existence, thereby, they can play the role of the distribution network point. And these shops are relatively easy to develop new business on account of owning fixed target customers.

(5) Supply the value-added services. The real shops as convenience stores can help the online retailers to sell commodities, show samples, deliver the commodities, collect the payment, change or return products and deliver goods to customers' door, which are value-added services.

4.2. Specialized Ways--- Set up the Specialized Organizations like Self-service Parcel Stations as the Distribution Network Point

The model is an innovative approach taken by the German DHL company in order to cope with the rapid growth of online shopping. Its basic meaning is: They set up self-service parcel stations in the densely populated and transportation convenience areas. Then install electronic locker with sufficient

quantity and enough capacity in the parcels stations, and configure the computers and other devices that can access to internet. The express companies deliver the goods that the consumers purchased to the lockers, and the parcel stations give transfer the lockers' number and opening code to the customers. With this code, the customers are able to accomplish the process of picking up the goods without any helps. It saves the cost of human resource on account of picking up the goods by customers. However, it requires higher technology because of complete automatic management. The distribution process of DHL self-service parcel stations as follow:



DHL built 2500 self-service parcel stations in the railway station, shopping mall and supermarket of Germany, which providing all-weather service. Specifically, the parcel stations located in well-planned sections, for instance, on the way work or home, and it save the time of customers taking parcels. Now there are 1.5millions customers register to become affiliates. With the rising of use rate of parcel stations, 5%-10% parcels are delivered through the parcel stations in DHL, and each parcel station delivered 10 parcels everyday.

Compare to the way of the retailers like convenience stores as the distribution network sites, it had some advantages that set up the specialized organizations like self-service parcel stations as the distribution network point.

(1)Intensify the control of the logistics distribution. They adopt information-based management, reducing the human element, cutting down the damage rate and enhance the accuracy of delivering the goods in the distribution.

(2)Save the cost of management. It reduce the cost of human resource on account of deliver the parcels by customers. At the same time, it cut down the communicational cost between the network retailing companies and the shops. Thereby, they can concentrate energy on the technology of deposit equipment in order to improve the security and automation degree.

5. The Application in China of the Logistics Distribution Networks

5.1. The Application Prospect of the Logistics Distribution Networks in China

There are huge quantity group of online shopping, according to the data of CECRC, the number of using the online retail is nearly 106 millions, still go upward. See figure 2(The value in the year 2011 and 2012 is expected)

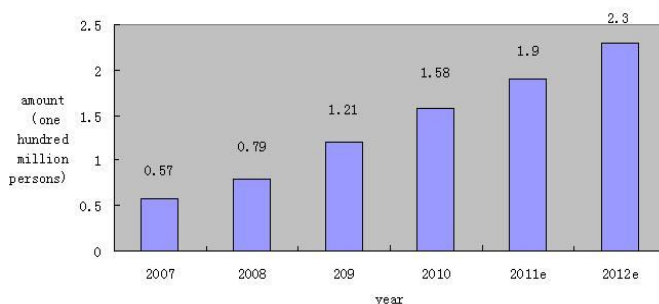


Fig. 2: Customer share of online retailers from 2007 to 2012

The quantity of the users who shopping online is growing every year, which is more than 5 percents of the quantity of Chinese online retail. See Fig. 3.

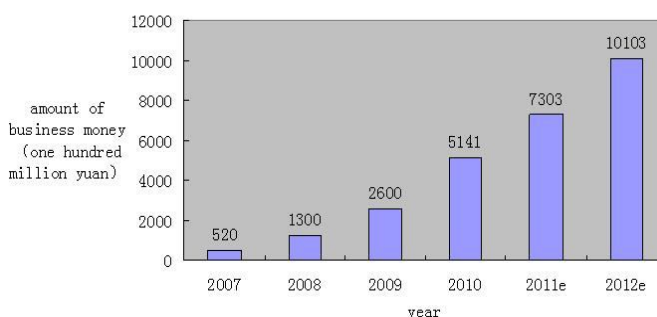


Fig. 3: Exchange scale of online retailers from 2007 to 2010

Data from: China Internet Network Information Center <http://www.cnnic.net.cn/>

5.2. The Problem of the Logistics Distribution Networks Based on the Convenience Stores

(1)It is difficult to carry out centralized management. It must become a multi-function service center integrated sell, show, logistics transfer and distribution service in order to play the role of the distribution net point, which need redesign the market strategy and Service concept.

(2)The scale of the shops is relatively small, haven't developed a network. Most of the chain enterprises that focused on regional markets mainly open convenience stores in large cities like Beijing, Shanghai, however, develop little cross-regional market. Therefore, there are little nationwide enterprises. And it is hard to carry out logistics distribution networks as there is no support of chain

stores in the area.

(3)The cooperation between the stores and online retailers exist venture. Online retail companies and stores share the information of order processing, payment settlement, change and return goods, to become an information hub and a logistics transfer area, which requires a large investment.

5.3. The Problem of the Logistics Distribution Networks Based on the Self-service Parcel Station

(1)Large investment on research and development, and long term on payback period. Self-service parcel station strictly required locker safely and expediently, it need higher standard to prevent any burglaries, perfect information systems and autocontrol systems, and achieved by the technical progress.

(2)It was hard to construct a distribution network site. This mode need construct many distribution network sites in the cities, so the address was chosen at the place which has more people and convenient traffic to unloading. Under these conditions, it was difficult to choose enough sites which according with the equal condition.

(3)It need definite time that users accept the self-service. It need change the conventional service mode which deliver commodity to the customers, and asked users taking commodity themselves by information systems. It need some time to adopt.

6. Conclusion

The rapid development of online retail, provided a good market environment and development space for network type logistics model. As innovative approaches to solve the distribution problem of the terminal, it should be appropriate to try and gradually introduced.

(1)Network type logistics model can be piloted in the economically developed areas. The online retail companies can try to select convenience stores as a strategic partner to conduct a joint distribution terminal service. That strength of the logistics enterprises, and the online retail business, or storage cabinet equipment manufacturer can try to establish a self-service parcel stations in densely populated areas, and gradually expand the distribution network.

(2)To attract government involvement in the network building. The construction of distribution network is not only the logistics cost savings for the online retail business, which have opened up new economic growth point for the convenience stores and other retail outlets, but also bring convenience to people's lives, to guide people to the formation of healthy life. Therefore it has a positive social. What' more, self-service parcel stations with the nature of the

universal service. On the other hand, the effective operation of the distribution network need a good infrastructure as a guarantee, the logistics infrastructure has strong nature of public goods and external economies, Therefore the Government should strengthen and attention to the construction and management of the logistics infrastructure.

(3)As new phenomena, the self-service parcel stations is an innovative way to solve the distribution problem of the terminal, this method has not caused widespread concern in the industry. But the rapid development of network retail made a large market potential for self-service parcel stations. Recommendations that the Government to encourage enterprises to invest in the construction of specialized distribution network through the guiding role of the policy.

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