

Joint Distribution Model Based Joint Logistics Services Platform

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Abstract

With the rapid development of e-commerce, joint distribution has been an irresistible trend in developed countries such as Japan and America. However, affected by the planned economy for a long time, Chinese logistics lies in a low social level. As the dispersion diversifies circulation, it is difficult to play the advantages of intensive management, which leads to not only low utilization of facilities, but also serious waste of money. In this research, the notion of joint logistics is proposed, additionally a joint logistics services platform JLSP is designed. It will take a unique approach, for horizontal integration, seeking common ground while reserving differences as well as sharing benefit. JLSP realizes comprehensive distribution through the issuance of the sources information, the use of multiple criteria, the selection of logistics companies upon multiple users and the arrangements for delivery time, the quantity of goods. The SWOT analysis result of JLSP is presented. The result indicates that JLSP can integrate social resources to improve the efficiency of logistics operations and reduce logistics costs.

Keywords : e-commerce, joint logistics, joint distribution, service platform

1. Introduction

The rapid development of e-commerce actively promote the steady development of the logistics industry, which makes big requirements of logistics service; on the other hand; it also give a broad space for Chinese logistics industry development. JLSP (Joint Logistics Service Platform) Just rely on this background, aiming at cooperating with logistics companies, freight forwarding companies, e-commerce businesses, individual shippers, together implementing a common distribution so that we can achieve win-win situation.

With the development of Chinese e-commerce logistics in recent years, China already has a considerable scale, but still cannot meet the general needs of the development of electronic commerce. Our logistics efficiency is not high and there is also a big gap between the advanced international level, the issues focus on the following aspects:

- (1) the backward of system of governance.
- (2) the low logistics information technology.
- (3) e-commerce logistics professionals is sorely lacking.

2013年11月28日受付

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1.1 Related work

Logistics service is an important issue in electronic commerce research^[1-3]. Much work was paid on improving logistics service level^[4-8]. Xu et al investigates how to build collection and delivery point CDP in China^[8]. The author designed the operation schemes of CDP and proposed the suggestion of adopting joint investment mode, building risk management mechanism. In the article^[9], Liu also advocates that setting up efficient logistics operation mode with the enterprise and saving logistics cost. In order to reduce the cost on the base of domestic and foreign research achievements. Duan^[10] introduced set pair analysis into the choice of coal enterprises logistic pattern, namely self-management, joint venture, and outsourcing, it constructs a comprehensive index system in order to make much better choices for coal enterprises. The joint logistics

Chen investigates an extended supply chain model with a supplier, a budget-constrained retailer, a bank and a 3PL firm^[11]. The analysis indicates that the control role model yields higher profits not only for the 3PL firm but also for the whole chain.

Besides joint logistics, reverse logistics is also a focus issue. The article^[12] compares three models of reverse logistics and analyses the causes of the reverse logistics, then presents recommendations for model selection of reverse logistics according to the characteristics of different types of enterprises.

As far as we know, there is little work paid on joint logistics and related platform design.

1.2 The purposes and business models of JLSP platform

"JLSP platform" is committed to providing professional logistics and distribution programs integrated logistics information platform. It has two business modes, B2C and C2C. The platform is based on a complete set of logistics information systems and database systems. It can provide a convenient and cost-effective logistics solutions for these two modes of each company. It not only helps customer save money but also can let the goods arrive in time.

After cooperation with the B2C platform, the buyers no longer need to select logistics companies when they are shopping online, instead, what they only need to do is to give an address for service as well as related personal information, the web platform will deal with the order information, sorting and processing after finishing the integration. Relative to the consumers, we have mastered the more comprehensive information so that we can make better judgments. Through the joint distribution, the website platform could save a lot of social resources while being convenient to logistics companies and reduce their unnecessary expenses. Relative to the shipping company, it can reduce the probability of return empty cars and improve the transport level.

2. Business processes of JLSP platform

JLSP platform provides two operations:

- (1) B2C mode: online merchants' and buyers' goods information is provided to logistics companies and the logistics company integrates them;
- (2) C2C mode: the individual shippers' and consignees' goods information is provided to logistics companies and the logistics company integrates them.

2.1 E-commerce logistics business processes in B2C mode

- (1) buyers shop online and submit their order online as well as fill in the recipient address;
- (2) Companies receive the order information, orders (including business address, the buyer's address, product size, number of goods, commodities, weight, time requirements, etc.) forward to the joint logistics services platform. In the meanwhile, the platform's background database will collect and integrate them;
- (3) The staffs of platform use the automatic data processing technology to classify goods;
- (4) The platform will use the way which similar to the tender, providing classified information to a number of logistics companies. In order to ensure fairness, the platform only provides ordered goods number and types of goods, instead of showing the specific address;
- (5) After logistics companies' information units received the cargo information, they can submit an application to the platform for distribution applies. The whole process will take the form of analog bidding;
- (6) After platform received the feedback of the logistics company's business units, the database will take into account the comprehensive capacity of the logistic company and collaborative assessment criteria, batch classification to choose a different home the successful logistics company providing multiple orders; Then send details of the order and the synergy of the best delivery routes to the various logistics company won the bid announcement;
- (7) After the successful logistics company accept delivery orders, they immediately move to the business office to process orders;
- (8) After picking-up, the successful logistics companies delivery goods by the specific circumstances of the place.

2.2 Logistics business processes under C2C e-commerce mode

This mode is shown in figure 2.

- (1) If an individual shipper has goods to be sent to B place, then he can login on this platform, fill in the order information (including shipping address, address for service, product size, product number, product type, and specific requirements);

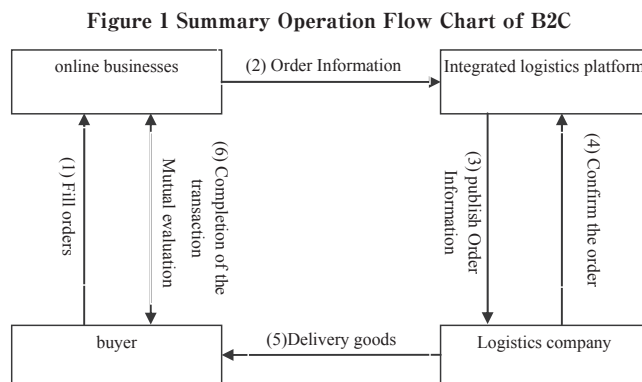
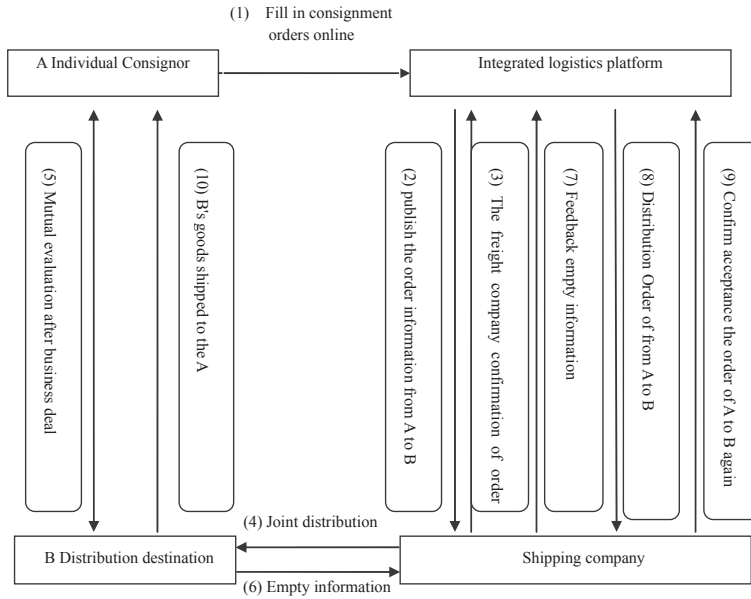


Figure 2 Operation Flow Chart of C2C



- (2) The JLSP platform receives the shipper information and classifies the orders according to the destination within the specified time, which need to be shipped the goods division B to the same orders;
- (3) Publish the classification integrated information to the selected freight company. The platform will sort the companies according to their registration time. They will receive carrier information. The rotation process is open and the freight company will supervise the platform.
- (4) Freight companies will collect the whole goods in A area in which the goods need to be sent to B area, concentrated loading and sent to B area;
- (5) When the goods arrive at B area, the freight company will send the empty car information to the platform, the platform will give them the goods information which should send form B area to A area. After they receive orders, they go to buyers' place to take those goods and return to A area;

2.1 Business Advantage

The existing logistics model is based on the distribution requirements, such as customer requirements and distribution delivered to some place, so that there will be a lot of problems. they are the low degree of socialization, logistics management system, institutional pluralism, and the main problem in term of the waste of logistics resources.

Let's make an assumption, there are 1,2,3,4,5 five different regions customers shopping online in A, B, C,, D, E, five merchants, these five merchants commissioned logistics company to delivery of goods to these five customer. According to the existing logistics model, A merchant will deliver goods to customer 1, 2, 3, 4, 5 everyone, B, C, D, E will do the same way.

Although they are delivered to 1, 2, 3, 4, 5 five customers, due to information is not shared between the A, B, C, D, E five businesses, there are five logistics companies to do the distribution, which actually only

need one logistics company. So it is a waste of resources and increased logistics costs.

By The JLSP platform, we can simplify the distribution routes from m^2 to $2m$. Through the computer's information integration capabilities, the platform classifies the orders according to the delivery address in order to achieve a joint distribution, this joint distribution is actually a common area distribution.

With JLSP platform, when the five customers 1, 2, 3, 4, 5 buy something online in A, B, C, D, E, five merchants, these five merchants can send the order information to JLSP platform. Then the platform will use the computer information integration features to classify these orders according to their destination. After that, the platform will publish the information online, after that logistics companies bid them. According to the bidding logistic company's time and score, the platform choose the appropriate logistics

Figure 3 The existing mode of traditional distribution map

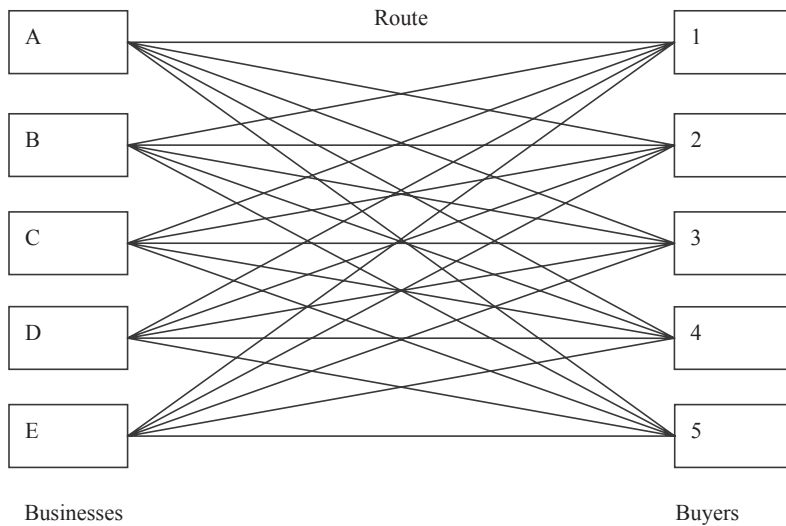
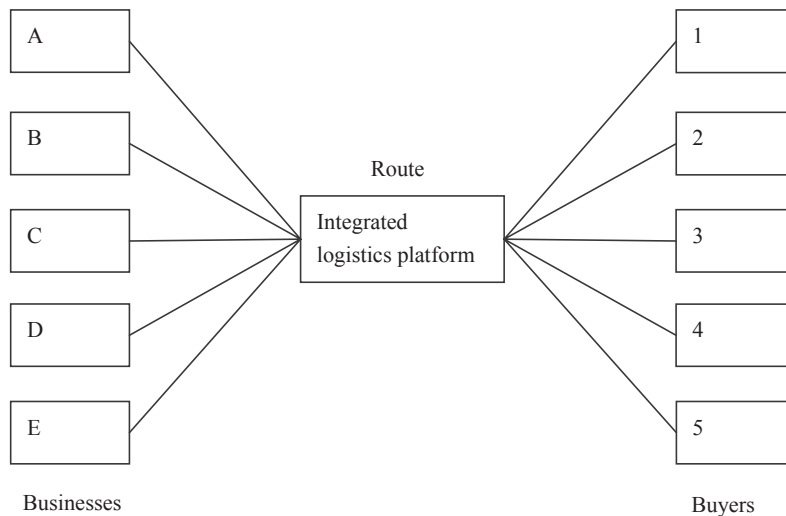


Figure 4 The JLSP platform joint distribution plans



company.

Through the platform, the original 25 times distribution turn into 10 times distribution, which can not only save logistics resources, but also greatly reduce the logistics cost.

See figure 3 for traditional model, and figure 4 for the JLSP platform. There are 25 lines and 10 lines in these two models respectively.

3. The function of JLSP platform

3.1 Information Integration

Under the B2C mode, online merchants send their order information to the joint logistics service platform, then the platform use the computer for classifying the goods, choosing a different mode of transport for different classification, as follows.

(1) The delivery of bulk goods starting point in the same area of the city A, their destination are in the same areas in city A, B or C and so on.

Mode of transport: One logistics company goes to A city to receive the goods, then directly sends a car to city B or C and so on, so that it can save the unnecessary stay between the beginning city and the end city's transfer station;

(2) The delivery of bulk goods starting point in the same area of the city A, but their destination are in the different areas in city A, B or C and so on.

Mode of transport: One logistics company goes to A city to receive the goods, then use some cars according to the different destinations, each car has only one destination, by doing this, it can save the unnecessary stay in the destination city's transfer station;

(3) The delivery of bulk goods starting point in the different cities, but their destination is in the same areas in city.

Mode of transport: One logistics company receives the goods from the different cities, then sends them to the destination city's transfer station and then distributes to the buyers.

3.2 Improving efficiency

(1) This platform can help merchants and shippers to share the current complicated logistics problems, reduce workload, improve delivery efficiency, let the delivery of goods become faster, improve the quality of service, make a contribution to a stable customer base.

(2) This platform can help businesses to have quickly response to market demands, for example, "Taobao" is one of the biggest client, and in order to fulfill orders fast, businesses will need to maintain adequate supply in the major commodity.

(3) Reduce the operating costs of the merchant or shipper, it is not necessary to invest a lot of money, equipment, land, and manpower to set up their own logistics system, leading to a better situation that we can focus on core business to promote their growth and spread faster.

3.3 Social function

For the whole society, the common distribution platform has two benefits. Firstly, it reduces the total amount of social traffic as well as the phenomenon of blocking traffic, contributing to improving traffic and transport situation. Secondly, with the centralized processing, it can not only improve vehicle loading

rate, save space and human resources of the logistics management, but also improve business logistics environment so that the overall quality of social life can be improved.

4. JLSP platform for market analysis and promotion strategy

4.1 Market demand analysis

The number of logistics companies oversupply now, they usually lack of service quality, and manage the logistics network with low level. Meanwhile, they are short of scientific and effective management. So, if there is one that can help freight companies and logistics companies to improve the efficiency and level of service Web site, enhancing the core competitiveness for their own development, there will be beneficial and harmless.

Furthermore, online merchants often encounter buyers' complaint that their goods were damaged during transport, so it will damage their reputation, if there is a comprehensive information platform for businessman, which can select logistics companies carefully, it can make the logistics company increase their service level, so that buyers will complain less about store hits naturally.

4.2 Risk Analysis

- (1) The problem of online merchants' trust and information confidentiality.
- (2) The coordination problem of the joint distribution logistics company.
- (3) The revenue distribution problem produced by cost.
- (4) Information services fall behind.
- (5) Lack of legal and policy support.

4.3 SWOT analysis

4.2.1 Strengths

(1) Platform is professional, and has the advantage of the information and service network. IT support capabilities can reduce logistics cost, so that the platform can get logistics companies and businesses' trust thus win large long-term orders.

(2) Platform establishes an effective computer-aided decision-making system which allows the program of activities to be done by this system, thus improving the decision-making efficiency.

(3) Reduce the total amount of social traffic, and improve transportation. It is valuable to promote "green logistics", especially at the present time.

4.2.2 Weaknesses

(1) Platform partners may distrust or worry about their goods or leakage of existing personal information;

(2) Lack of relevant laws and policy support in this area;

(3) Risk sharing. As an integrated logistics information platform, the platform's credibility is closely linked with the logistics company. Its quality of service will indirectly affect the image of JLSP platform for merchants and buyers;

4.2.3 Opportunities

(1) The rapid development of science and technology provides a good support for the transport system.

(2) The combination of online and offline operation, can fully play their respective strengths, complementing each other. It can achieve the efficient operation of the logistics enterprises so that they can obtain the maximum economic benefit.

(3) e-commerce logistics is a new and important development direction of modern logistics.

4.2.4 Threats

(1) Many e-commerce websites or companies created their own brands. They established their own logistics and distribution system, setting up their own logistics company, such as "Jingdong Mall "and" Amazon ". Themselves dominate the shipment delivery process. This is undoubtedly a major challenge for the future development of the platform.

(2) The platform's profit depends on advertising costs charged to the provision of logistics equipment, logistics company information costs and business release fee. At the beginning, it will be a great deal of uncertainly and obtain less profit.

(3) Today logistics companies have sprung up, they will change their cost to improve the quality of service and level. So platform must take advantage of different methods to improve and continuously update all the time in order to attract orders.

4.4 Promotion Strategy

In the early stages of development of the JLSP platform, we need to seek long-term cooperation with the logistics companies, freight companies, online merchants and individual shippers, which requires us to establish a corporate image thus promoting platform. Facing with the four partners, the JLSP platform has different promotion strategies.

(1) To the online merchants, small shippers: JLSP platform choose to advertise on various newspapers, magazines, and online advertising in order to promote the platform which can improve sales and bring benefits. Trying to find a break from small e-commerce site then solve them on a piecemeal basis. After we have a good reputation, we can cooperate with large e-commerce site such as "Taobao" and "Suning".

(2) To the logistics companies and freight companies: after the cooperation with businesses, we can have a large number of orders. Then we propaganda to the major logistics companies ones more and strive for advertisements in the newspapers and magazines on the logistics sector. In the face of the future sources of temptation and under the common distribution of the general trend, logistics companies and freight companies will participate in them.

(3) In addition, we will open up our own blog, use new and unique concept of logistics and increase blog traffic, thus to promote our JLSP platform in blog.

5. Risk assessment and control strategy

5.1 Technology

Ease to use, frame setting, aesthetics, plate management, data confidentiality are often critical to the success of the "Joint logistics services platform". In addition, how to send the orders to the logistics company with quickest and most satisfactory manner is a key to be considered.

The end-result of the control strategy is the management of the Platform develops personnel. We should adhere to fulfill their duties and deal with the problem with professional perspective. The same time, JLSP platform to establish the system of supervision eliminated during work, using the most reasonable allocation of the order issued.

5.2 Market

Whether the platform is able to be bigger and stronger depends on whether we can attract the attention and cooperation of business and logistics companies in a short time. There are some market risks. The platform will be less well known in the early time so that we can't quickly get back the funds. And there may be many competitors to occupy the market.

The control strategy is to implement platform' promoting strategies, especially pay attention to the propaganda of the corporate image.

5.3 Financial

The normal operations of the JLSP platform need to have sufficient funds, so at the beginning financial management and cost management are extremely difficult in operating JLSP platform. The control strategy is involved in standardization management and improves the literacy of the staff.

5.4 Operate

The biggest challenge that platform will face with is how to gain credibility from logistics companies.

The control strategy is to increase ads efforts so that logistics companies promote the brand image effectively.

6. Conclusion

The rapid development of electronic commerce promote the development of the logistics industry with independence. Although the development of logistics in China is very quickly, because of poor infrastructure and uneven development, the degree plans too much, coupled with China's vast territory, there is a certain gap between China's logistics and foreign countries's. Moreover, because of the explosive growth of online orders, China's logistics and distribution has been unable to meet the development of e-commerce, which become the bottlenecks and weaknesses of e-commerce development. Compared to the traditional distribution, the advantage of joint distribution is the ability to rationally use transport equipment, plan transport routes, and reduce the cost of logistics and transportation, furthermore, it can improve more logistics operation in time and space. JLSP platform will promote the popularization and development of logistics and joint distribution in China.

Acknowledgement

This research is supported by the Humanity and Social Science Youth foundation of Ministry of Education of China under Grant No. 12YJC870037, the Innovation Program of Shanghai Municipal Education Commission under Grant No. 12YZ103, the Research Fund for the Doctoral Program of Higher Education of Ministry of Education under Grant No. 20123120120004, and Innovation Plan for shanghai College Students under Grant No. 201210252055.

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