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## Study on Systematic Construction Process and Implementation Strategy of Common Delivery

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**Abstract:** Common delivery is a cooperated carrying mode which is operated by several shippers or carriers together via the distribution center or other confederate organization. Its essence lies in constructing the enterprise alliance by resources sharing. At present, the proportion of logistics charge to total cost of product is still quite high. Common delivery is an important way to pursue rationalization and efficiency of logistics. So it becomes a type and a trend of delivery. More and more logistics enterprises have recognized that common delivery can bring about cost saving, efficiency improvement, trade harmony, resource integration etc. There is further demand to discuss how common delivery will be put into operation successfully. From the standpoint of decision-making organization, participant enterprises and government department respectively, this paper puts forward relevant strategies and noticeable points about the execution of common delivery. It describes the system frame and implementation process of common delivery with flow chart in detail. As a result, the interior and exterior favorable conditions are created for this advanced delivery mode. It can instruct common delivery to be performed systematically.

**Key words:** Common delivery, logistics efficiency, implementation strategy, systematic construction

### INTRODUCTION

Common delivery is also named as synergy delivery. It originated in Japan to cope with the delivery problems among the scattered convenience stores. It is a kind of delivery mode that some enterprises unite together to collect or deliver goods in order to improve logistics efficiency. Its essence lies in constructing the enterprise alliance by resources sharing. The participants of common delivery can mutually use their respective storage and transport facilities to increase utilization ratio. The carrying distance and haul cycle are shortened by enterprises supplement each other. Common delivery may well lead to considerable cost saving, credible service assurance and high service level by means of flexible and rational organizing. So it becomes an important means to go after large scale and high efficiency of logistics. From an investigation for setting up logistics system published by former transportation department of Japan, it can be shown that the amount of vehicle driver reduced by 18 to 19 percent, the carrying distance had a decrease of 47 to 83 percent and the average quantity of delivery every day rose by 1.31 to 9.6 times. All of these are the result of executing common delivery and establishing common logistics centres for the retailers and wholesalers (Fu *et al.*, 2007).

After experiencing a long-term process of exploration and development, common delivery has been regarded as one of rationalization modes in logistics field. From the

whole and long viewpoint, the economic benefits induced by common delivery are obvious. But its short-term effect is not always prominent. It is difficult to organize and extend the cooperation of delivery. From an inquiry of the small and medium-sized wholesale and retail business in Tokyo 1993, the proportion of enterprises carrying out common delivery to all inquired samples is only 12%. Among the divers reasons that enterprises wouldn't like to adopt the common idea, the percentage of the three reasons mentioned above is 14, 18 and 17 respectively. In addition, they also bring forward that the cooperation lacks main instruction and participants aren't able to avoid competition with associates and so on (DLRI, 2005).

As far as it goes, China still lies in the primary stage of logistics. The implementation of common delivery in china not only faces above problems, but also needs to experience multiple challenges. On the one hand, it is attributed to the traditional system. Common delivery usually involves the inter-departments cooperation. But the complicated situation, such as the function of government and the enterprises can't be made a clear distinction and the logistics facilities belong to different departments absolutely, becomes the obstacle of communication and coordination. On the other hand, it is attributed to the immature logistics environment. In the beginning, because the social demand has not yet reached the comparative economic scale, the application of common delivery would result in so higher delivery price that customers can hardly accept this kind of mode.

It would also bring some anxiety to customers that the delivery service is not enough perfect and the process is not fully creditable and satisfactory. Therefore there are lots of urgent issues to further discuss to execute common delivery successfully (Zhang *et al.*, 2007).

DLRI (2005) categorized the common delivery into five types and studied it on the preconditions to put in action, the characteristics of decision-making organization and the associative mechanism and content. They treated small and medium-sized enterprises as the main object of common delivery. It was necessary to unify the concept and coordinate the benefit relationship of the internal members. The standardizing information system and government support in administration should be available. Xu *et al.* (2006a) generalized the development modes of common delivery from the point of horizontal and vertical supply chain. They raised some noticeable problems about it and held the view that the delivery community ought to be established with system theory scientifically.

#### **THE IMPLEMENTATION STRATEGY OF COMMON DELIVERY**

Concerning the difficulties and challenges of common delivery, this paper puts forward the following advice and strategy from three aspects.

##### **For decision-making organization**

**Adapt to the market demand and variety:** According to the customers' actuality and requirement, the decision-maker ought to lay an operable plan for common service items. It is necessary to communicate with customers and evaluate the market capacity so that the alliance can launch the service style to conform the demand and variety. The community will make good use of its more comprehensive function and advantage to integrate the customer resource, facility resource and information resource.

**Strengthen the leadership of decision-making organization:** It's very difficult to give attention to the desire of each member in alliance. In general, the decision-making organization will choose the optimal scheme to set in action after synthetically analyzing various opinions of every participator. So the leadership and reconciliation function of the organization is crucial. It must win the full trust and advocacy of all participant enterprises. Besides, with regard to personnel arrangement, the decision-making organization calls for some clerks, who are familiar with logistics business and possess much practice experience and innovation consciousness. If necessary, it may also invite a few experts to give counsel at a more indifferent and objective angle.

##### **Maintain the interest of every participant enterprise:**

Although there have been a certain cooperative relationship, every participant enterprise is still a rational individual in actual economic operation. Pursuing profit maximization is their insistent principle all the while. Therefore, it is inevitable that some phenomena like jobbery, speculation, deceit etc. happen to the alliance. As a result, the community should intensify the surveillance and transparency of assets' input, use and partition in organization interior, should perfect and open the method of cost apportionment and the rule of benefit sharing, should ask participants to sign quite stable cooperation contracts in which their respective right and obligation must be defined strictly. All of members have to equally observe and execute what the decision-making organization determined (Fu *et al.*, 2009).

##### **Unify and modernize the information handling process:**

Common delivery doesn't merely imply several shipper or carrier deliver the goods by one same vehicle. Its operation requires the support of Management System and other Information Technology. The community has to unify the order transmittal system and document format to combine and optimize large numbers of orders. At the same time, the community had better adopt some accessorial measures to advance the operation efficiency. Such as constructing the internal network platform, promoting the Value Added Network based on Electronic Data Interchange, inducting the Office Automation System, utilizing the scanning and bar code technology, providing the Radio Frequency equipment and handheld radio unit and so on.

##### **For participant enterprises**

##### **Enhance the enterprises' self-knowledge and cooperative consciousness:**

Common delivery is a kind of interdependent and mutual-beneficial development strategy. In the process of formation of this mode, there are several points which participants need pay attention to. For one thing, they are supposed to clearly recognize their own condition, position, demand and object. For another thing, they ought to consolidate inner management and administration, otherwise the inter-enterprises cooperation possibly encounter numerous obstacles. Finally, every department that belongs to the participant enterprise must reach an agreement on implementing common delivery. Especially in the same industry, each of them should have the notion that horizontal competition is just a kind of competing in sale, whereas the cooperation in logistics delivery is absolutely feasible (Xu *et al.*, 2006b) which will be of advantage to integrate supply chain and promote the growth of enterprises.

**Extract the similarity from diverse delivery businesses:** In the delivery system of different industries,

goods appearance, packaging, destination, delivery frequency, carrying requirement etc. are various, owing to a great diversity of industry characteristic and product form. Even if within the same industry, this situation may occur too. Unless the participant enterprises coordinate or dispose of the variety carefully, common delivery will cause that logistics cost mount up rapidly and delivery efficiency cut down sharply. Thus they have to look for relatively stable delivery businesses and extract similarity from them before cooperation is brought into effect. What's more, the similarity should be utilized fully to bring up favorable collaborative foundation.

**Avoid revealing the commercial secrets in community:** It is well-known that an enterprise will suffer inestimable loss once its commercial secret is revealed to the competitor of a trade. To a certain extent, this risk is likely to exit in common delivery. Consequently the participants ought to comprehensively evaluate the impact upon enterprises managing strategy which the intra-industry cooperation brings about. If they think running the considerable risk is unworthy, enterprises are also able to take into account the inter-industries cooperation. The business scope of different industry isn't apt to overlap or conflict after all, so the competition will be less violent than the former. What the participants worry about will be weakened naturally. Additionally, the community and every participant enterprise should be liable for keeping all their commercial secrets. Effective prevention and supervision measures ought to be taken so that they sternly control and manage the important information referring to the enterprise privacy. It is advisable for them to give clear indication of secrecy terms in cooperation contracts in advance which prescribe the aspect need keeping confidential.

**Ensure the safety of delivered goods:** In common delivery, all kinds of goods which belong to two or three shippers will probably be carried by only one truck to different receiving spot. The product with different values would be mingled and delivered together. Compared with separate delivery, the safety of goods seems more observable. If let participants or shippers trustfully give their goods over to community which they carried by themselves previously, the perfect safeguard had better be employed to prevent goods from damaging, losing, cheating etc. For instance, establish the credit evaluation system for vehicle owner which records the detailed information of vehicles and drivers to make provision for tracing clues. Strictly execute the regulation about participant enterprises' qualification review and interior vehicles' security management. Personally speaking, the enterprise or shipper may insure delivered goods against accident, may as well assess an amount of deposit from carrier and sign the specific transport contract. If

circumstances permit, the advanced Global Position System can be installed to dynamically track and monitor the delivery vehicles and valuable goods during the full distance. It's the most effective and ultimate way to resolve the problem of transport safety.

**Attach importance to attracting talent and training staff:** Common delivery can be looked upon as a sort of logistics system reengineering in a wider scope. It urgently wants equipping with professionals who have mastered modern technology and operational skill in many respects, from data collection, system simulation, facilities maintenance to processing business information, designing the delivery scheme, settling account with participants. Along with the maturity and unification of cooperation, the customary regulation and procedure of every participant enterprise will get a series of change. In order to update knowledge structure, it is indispensable for staff to receive the short-term training and long-term education. Moreover, the enterprise should make much account of attracting talent to improve the staff quality.

For government department

The development of new things is always related with the impulse and support of society. Common delivery is considered as a type of advanced delivery mode which can both bring forth enterprise profit and give rise to social benefit. It goes without saying that government should approve and lead this mode positively and should remove the enterprise's anxiety of carrying it into effect as far as possible.

**Intensify the concept propaganda and technology consultation:**

- Refer to advanced and successful experience about common delivery at home and abroad. The government has responsibility to propagandize the cooperative concept by way of panel discussion, academic conference, case analysis etc (Liu *et al.*, 2012). It's also necessary for them to understand the thought and demand of domestic enterprise, to smooth circulation channel and to institute the regulation and policy on promoting common delivery
- Set up a special consulting organization to offer a set of directional and technical guidance. The motive is to provide a definite basis for the enterprises that are ready to implement common delivery. It would be best that they can obtain appropriate subsidy and preference from government department to inspire their enthusiasm and initiative. As well as, the organization may select a few representative enterprises as experimental units of common delivery. In this way, the enterprises both can accumulate practice experience and can act as typical demonstration

**Revise and perfect related statutes:**

- Review and revise present statutes about land acquisition, administrative examination and approval, tax and fee collection etc. As far as the enterprises participating in common delivery are concerned, government may give a certain support policy from above aspects
- Accelerate to institute the standard of logistics trade. Government need to construct uniform and scientific standard system in order that enterprises enjoy an impartial competition environment (Fu *et al.*, 2009)

Strengthen the communication and coordination among the different government departments to propel

the development of common delivery together. Establish and perfect credit security institution and contract management method so that related agency investigate responsibility and punish beach of contract with a heavy hand.

**THE CONSTRUCTION OF COMMON DELIVERY SYSTEM**

Common delivery is an organic whole made up of several enterprises. The cooperation should be fairly developed on the principle of pursuing mutual benefit, promoting efficiency, sharing resources and eliminating self-centered consciousness. Its process of systematic construction can be shown in Fig. 1.

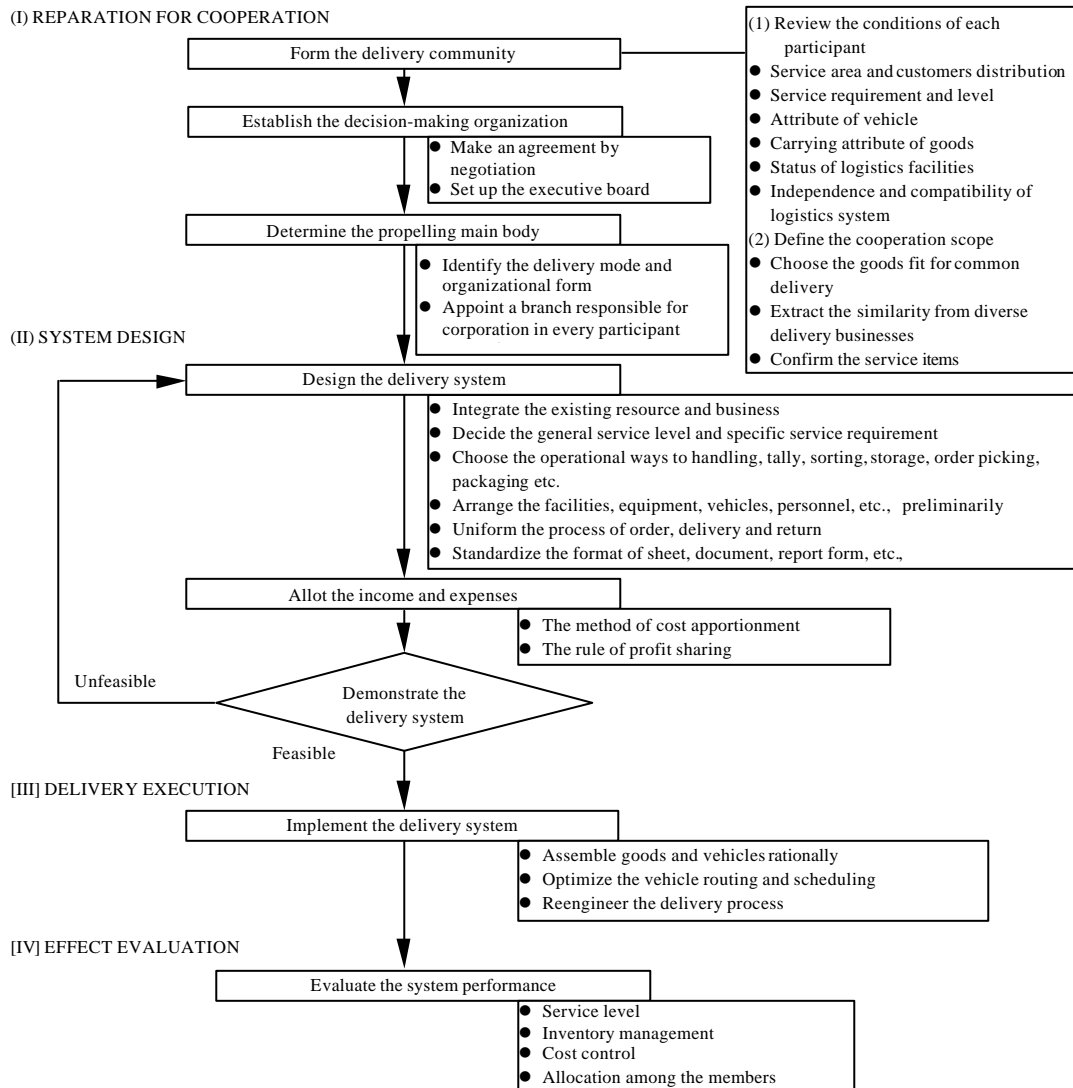


Fig. 1: System frame and implementation process of common delivery

## CONCLUSION

Common delivery requires the decision-making organization to take various concrete requests into consideration and give attention to the interest of every participant. Its degree of socialization and diversification is much higher than separate delivery's. Thereby common delivery is of complex logistics activity, in which the benefit allocation is one of the most essential and remarkable problems. This study took advantage of Shapley value as cost apportionment method which is similarly fit for profit sharing of course and that every participant could be satisfied with the computed result of this method. Even so, there is a quite difficulty in defining the utility function. It turns into the key to avail of the method of Shapley value.

In light of the existing experience, this paper represented the implementation process and strategy of common delivery in ordinary condition. It will provide some reference for the advanced delivery mode, but it is unlikely to possess universal feasibility and applicability. In course of development, common delivery still has many aspects to improve and perfect.

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