

Analysis on Optimal Management Measures of Logistics and Information Flow in Supply Chain

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Abstract: In the early stage of the rapid development of modern enterprises, enterprises began to pay more attention to their own internal optimization. And the wide application of supply chain management mode clearly points out that enterprises should not only internal optimization, but also strategic optimization in order to improve the overall competitiveness of enterprises.

1. Characteristics of logistics and information flow in supply chain

The logistics information effectively connects manufacturers, wholesalers, retailers, consumers, so it constitutes a complete supply chain. With the influence of modern logistics information technology, it will be an efficient supply chain. In a narrow sense, logistics information is derived from logistics activities that includes transportation information, distribution information, loading, unloading and handling information, storage information, circulation and processing information, etc. In a broad sense, logistics information includes not only the content of logistics information in a narrow sense, but also diversified information that related to and affecting logistics activities contains commodity procurement, production and sales diversified information, such as the raw material purchasing information, production, sales, processing information, payment information, etc^[1]. The logistics and information flow in the supply chain are shown in figure 1.

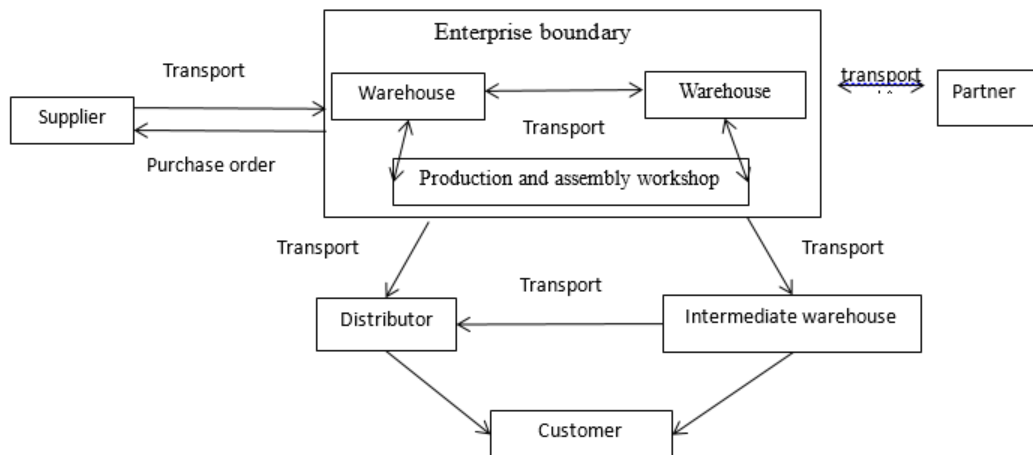


Figure 1. Logistics and Information Flow in the Supply Chain

2. Measures of Logistics Management in the Supply Chain

2.1. Inventory Replenishment

The inventory also consume a large amount of capital. If the inventory is too high, it will cause a direct impact on the normal and stable operation of the enterprise. According to their own actual situation, development scale, and production requirements, the enterprises control the inventory in scientific and reasonable standards.

2.1.1. Single-level Inventory Control Mode

There are various modes of single- level inventory control, and inventory control according to the number of economic orders is one of the main models. Employees firstly determine the specific area of the order, and then determine the order quantity. This control mode requires a comprehensive consideration of the ordering cost and post-ordering cost of the model. Generally speaking, according to the economic order quantity, effectively control of inventory is relatively simple. It mainly because the inventory demand is fixed under this mode, and the unit price of goods and order quantity are not affected each other. Another inventory model is the continuous periodic inventory model, which fully considers the inventory of time interval, but has no correlation with the order area. At present, single-level inventory model is more and more widely used, and it is favored because of its high practical value.

2.1.2. Multilevel Inventory Control Mode

In short, the base inventory is further expanded, which contains a series of restrictions. When the ordering, because of a variety of reasons it often appears a variety of changes, and demand fluctuation is also relatively large. Multilevel inventory control mode has been included the reducing the cost of product procurement. Although in this mode, the value of inventory items will change to some extent. This is mainly due to physical and chemical and other related factors, product quality and performance will inevitably change, resulting in depreciation phenomenon. Multilevel inventory control considers relatively comprehensive elements. so this mode can expand the value of inventory as much as possible, and avoid unnecessary economic losses.

2.2. Path Planning

The effective application of traffic management strategy aims to reduce traffic cost on the basis of ensuring adequate warehouse inventory. Once the geographical network is too complicated, it is bound to be optimized to reduce vehicle operation. However, traffic management needs to fully consider a large number of relevant factors, not only the traffic time and demand, but also a series of related variables. Therefore, in the process of vehicle route planning, relevant restrictive conditions should be fully considered to deeply the understanding of transportation in an all-round way. At present, some researchers have improved the accuracy and reliability of the algorithm to a large extent by using dynamic programming technology, thus easing the traffic cost.

2.3. Planning of Facility Locations

Strategic facilities are locations is various, i.e. factory and inventory locations, etc. Although only a few people pay close attention to the planning of facility location, it is of great practical significance for the reasonable planning of facility location in the process of supply chain logistics management. For logistics and information flow, the location of facilities and equipment is an

important basis. The factors influencing the location planning of facilities and equipment are various, including the distance between labor and suppliers. In general, the location of facilities and equipment is determined by the decision of the board of directors. The final location can be identified in a relatively simple way. The most commonly used is assessment method about location factor. These methods are relatively simple and can integrate diversified factors. However, this method is generally concluded through daily experience and is not scientific and rational enough.

On this basis, this paper makes a reasonable planning of strategic facilities and equipment locations by means of mathematical model. The location planning of facilities and equipment generally changes with the change of constraints and performance indicators. But no matter how it changes, the ultimate goal is to reduce the cost of logistics management. According to the number of facilities and equipment sites, the planning of facilities and sites is divided into two parts, namely, the planning of single facilities and the planning of multiple facilities. Among them, the single equipment location planning is based on the factory or warehouse, as the core, to promote other factors around this core to minimize. This planning method has very important practical significance, which embodies both academic and practical aspects. From the planning of individual facility locations, it is possible to extend the planning of multiple facility locations. The salient feature of multi-facility location planning model is that it can effectively solve the related problems of multiple equipment construction and so on. In terms of facility location, it can also be solved by static model or dynamic model. The static model makes the material flow as a constant. In other words, the facility location planning takes the model as a static model, and the model data is constant. But because the input data is difficult to effectively reflect the actual situation, so the static model is not consistent with the actual requirements. In addition, the dynamic facility location planning model mainly thinks the material flow as a variable. In different situations, there are significant differences between material flow, from which it can be seen that the facility location configuration is difficult to tend to the optimal degree in the long term.^[2-3]

3. Realization of logistics information value in supply chain

In order to realize the logistics information value, it is necessary to based on the information processing process of core enterprises in supply chain, and the core enterprises mainly carry out information processing through internal and external combination. Among them, external information processing is mainly based on processing technologies such as supplier, distributor, retailer and customer data. The supplier and distributor data is the main factor. Distributor data is transmitted layer by layer through the final customer and retailer, mainly for data information needed by the market. Supplier data is largely primary data information for direct transactions with enterprises, where higher levels of data information need to be transmitted to primary data providers in a layer-by-tier manner. In addition, internal information contains basic activity data and supporting activity data information within the enterprise. Through the processing of internal and external data information, the core enterprises constitute the logistics information of the supply chain, and the core enterprises can realize the real value of the information flow after it has been applied effectively.

4. Information flow management measures in supply chain

With the popularization of computer technology in various industries, the role of supply chain in logistics information has been brought into full play. The internal supply chain management of the enterprise should be integrated with the non-logistics functions covering engineering, quality, planning and so on in time. Product engineering determines the product function and structure to a large extent. In traditional mode, there is no correlation between it and supply chain management

functions. The Internet can better provide the market with unique customer-style products, and integrate engineering requirements with the traditional through serial processing of related issues. When the upstream and downstream functions are combined into the same work link, the integration of product engineering and supply chain management can be realized. Ensure that the supply chain in the concurrent engineering environment is involved in the early stages of product design and development by building interfaces and partnerships between designers and logistics staff. Product design solutions should be further planned on the basis of engineering and production factors, and the relevant factors of supply chain management should also be fully taken into account. The integration Logistics and product engineering allows they share knowledge with each other. Then they should take a comprehensive view of product development based on a unified perspective, which helps engineers to fully consider material acquisition, product packaging, storage and other issues from a product design perspective.

In addition, the integration product data management and supply chain management helps managers effectively achieve active cooperation with suppliers and other partners. Integration of supply chain management and quality control is also a critical stage. And the main factor of enterprise competitiveness is product quality, and quality control also plays an important role in supply chain management. The quality of the upstream nodes in the supply chain is closely related to the quality of downstream products. So in optimizing the quality, we should have effective cooperation and all-round quality control standards. Therefore, in the supply chain management, all enterprises should make use of compatible quality system and mode. The ISO 9000 Assessment standard is the ideal system for product consolidation and quality services in supply chain management. Therefore, selecting third-party company services according to this standard is necessary. ISO 9000 is an important guarantee that an acceptable product or service can be provided in an enterprise's supply chain^[5].

5. Conclusion

In a word, logistics and information flow Management in supply chain management is a complex and systematic project, and the need that we should consider is too complicated. Once the treatment is not in place, the effect of the supply chain management model will be greatly reduced. In order to obtain collective advantages, enterprises should also make rational use of diversification strategy, promote the complementary advantages of enterprises, so as to give full play to the overall role in the supply chain.

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