

## **Research on the application of logistics management in integrated supply chain management system**

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**Abstract.** Supply chain management is an effective management method, and logistics management is an important part of supply chain management. Logistics is a physical activity that makes the material to be from the producers to the consumers for the value of goods. Logistics management in supply chain management system is a unified planning logistics system. It has the characteristics of supply chain and the advantages of integration. It further brought the agility of logistics system and improved the operation efficiency of enterprises more effectively and make it possible to create more profit for enterprises. This article first expounds the basic concepts of supply chain management and logistics management, analyzes the logistics management in supply chain management system, This paper describes the basic concepts of supply chain management and logistics management, analyzes the supply chain management system and points out the problems that we should pay attention to.

### **Introduction**

In the 1980 s, the integration of logistics integration by the enterprise internal logistics activity across the border from enterprise collaboration between different enterprises, Supply Chain Management (Supply Chain Management, SCM) concept arises at the historic moment. To really know and firstly to put forward the concept of supply chain management is also some with rich management experience and advanced logistics management level of world-class enterprises. These companies found in the research process of enterprise development strategy that facing increasingly fierce market competition, it is difficult to occupy the advantage only by a business or a product, the enterprise must be with raw material suppliers, product distributors and third-party logistics services to form lasting and strong alliances, joint construction of high efficiency and low cost of the supply chain, can calm in the face of market competition and win.

### **Logistics management**

#### **The concept of logistics management**

Logistics management has a narrow and broad difference. Special logistics management refers to the materials procurement, transportation, warehousing and distribution activities, is a kind of logistics activities between enterprises. Generalized logistics management includes the material transformation process in the process of production, based on the generalized logistics management, supply chain management is often considered by people is logistics management. Logistics management and supply chain management have similarities, but there are differences in the scope of management, management angle, the relationship between the organization and a significant. Thus it can be seen that the supply chain management is the result of logistics management, logistics management is an important content of supply chain management, the efficiency of supply chain management depends largely on the procurement, transportation, warehousing and distribution logistics operation links such as the management and operation conditions. Therefore, the logistics management is the premise and foundation of supply chain management play the whole efficiency.

#### **Classification of logistics management**

Manufacturing logistics can be divided into purchasing logistics and logistics, distribution logistics, return logistics in factory, waste recycling logistics.

(1) Purchasing logistics. Carry the procurement raw materials, spare parts from suppliers into factory, including the recycling containers, repeated use of returned logistics.

(2) The plant logistics. Let the purchased raw material and parts be inventory, storage, dispatch. Carry the products (goods) to the logistics center, factory or other factory warehouse. Logistics center and factory warehouse let this product inventory, storage, dispatch and there is a series of products flow called plant logistics, logistics in plant also included in the logistics center and the factory warehouse for transport packaging, distribution processing, etc.

(3) The distribution logistics. Moving goods from the factory, the logistics development or other units of the warehouse to the hands of wholesalers, retailers or consumers of transportation, the distribution is called the distribution logistics. Distribution logistics include transportation and distribution unit outside to send goods to warehouse.

(4) Return logistics. Transportation, acceptance and filing about the return goods.

(5) Waste recycling logistics. Acceptance, storage and output about waste packaging containers, packaging materials and other waste transportation,

#### **Six s development tages of "logistics".**

(1) The first stage: the early stage of the logistics. The logistics contact each other according to different functions and different locations separately According to the requirements of the production and the sales department to do the storage and transportation.

(2) The second stage: the individual management. The emergence of the logistics cost consciousness, at this time only the department or shipping department takes care of in an effort to reduce the cost.

(3) The third stage. Comprehensive management, as an independent business logistics management department began to be set up. Take measures to solve problems of optimum combination of various logistics functions. Production and sales are the precondition of logistics.

(4) The fourth stage. Expand the fields. The stage of that the logistics affect the production and sales. For the production department they should consider problems in the product design stage from the angle of the logistics. Require in the logistics efficiency, unified packaging specification, the respect such as the flexibility of production planning; For the sales department, a planned order, the number of units to the order and delivery time and so on should be requested. At this stage, the pursuit of "the third profit source" enterprise become more and this stage is used to seen as the ultimate stage.

(5) The fifth stage: the whole system period. Logistics went into a new era of small batch and many varieties delivery, it is a new logistics. The company must obtain a consensus. This stage based on the production and the sales staff has been more members, in order to run the main leadership of the chairman of the committee system. Setting up this system, logistics will become the contents of a production and sales, logistics department just need to establish the logistics system using knowledge and information of logistics.

(6) The sixth stage: production, marketing, logistics integration period. As a first step, compare the different conditions of the sale of goods, delivery, out of stock, inventory and stock situation with the sales plan and production plan. Compare existing inventory with baseline inventory (stock plan),do the work on a regular basis. Find out the difference between plan and actual situation, and put forward solutions. Revised production plan and the related purchasing plan and on the logistics plan based on production and sales plan. This revision is appropriate to the various periods and sales, including the revision of the production and logistics operation of the enterprise as a whole, that is what we call the establishment of the integration of logistics information as the core of the system. This revision is appropriate to the various periods and sales, including the revision of the production and logistics operation of the enterprise as a whole, that is what we call the establishment of the integration of logistics information as the core of the system.

## **The supply chain management**

### **The basic concept of supply chain management**

Basic idea of supply chain management is that to meet the desired service level and at the same

time, make the system under the target of minimum cost to combine the suppliers, manufacturers, distributors, retailers and customers effectively into an organic whole to produce goods, and carry the appropriate quantity of goods to the right place at the right time.

### **The principles of supply chain management**

It can be seen from the analysis of the relation that no matter which kind of type of supply chain has two basic things in common: the first one, cooperation in the supply chain members should be positive to provide benefits for the partners with passing information, information sharing, planning, business joint; the second one, the cooperative way of members has positive significance to eliminate the bottleneck of supply chain risk sharing, achieve cooperation interests.

(1) The supply chain is a one-way process, every link in the chain is not divided each other, but is as a whole through the connection of chain.

(2) Supply chain management is the whole process strategic management, must from the overall to considerate, if only depends on the part of the link information, it may be due to the limitations or distortion of the information, leads to the failure of the plan.

(3) Different inventory view on the different link, in the logistics supply chain management, don't take measures as to maintain the production and sales of inventory, it is regarded as the balance of the supply chain mechanism.

(4) Supply chain management adopt new management methods, such as: use the overall comprehensive method instead of the interface methods: removing the weakest chain to seek the overall balance; Use a simplified supply chain method to prevent the accumulation of signal amplification: the economic cybernetics method is used to implement control and so on.

Supply chain management is more prevalent in Europe, it is relative to the understanding of logistics. In the European concept of logistics, always emphasize the idea of comprehensive and little emphasis on the idea of separation. Britain adopted the new concept of integrated logistics emphasis on the overall strategic target, rather than a to advanced link, it is in the leading position in this respect.

## **The fourth party logistics under the management of supply chain logistics management**

### **The concept of fourth party logistics**

The Accenture first puts forward the concept of fourth party logistics, according to the content of the definition business: the fourth party logistics provider is a supply chain integrator, it has different resources, capabilities, and technology integration and management to the company internal and complementary service providers, providing a complete set of supply chain solutions. Abroad has arisen research and test of the fourth party logistics in recent years,.

### **The basic content of the fourth party logistics management**

(1) Execute: take multiple functions and processes of the supply chain operation. 4pl starts to undertake responsibility multiple functions and processes of the supply chain operation. Its scope of work of transportation is far beyond the traditional third party logistics management and operation of the warehouse management, including manufacturing, purchasing, inventory management, supply chain information technology, demand forecasting, network management, customer service management, and administrative management. Although a company can outsource all supply chain activities to 4pl, usually 4pl is engaged in the supply chain function and some key parts of the process.

(2) Implement, process integration, system integration and operation. A fourth party logistics service provides new business plan to help customers implement, including the business process optimization, system integration between client companies and service providers, and transfer the business operations to the 4pl project operation team. Project implementation process should be more careful to organizational change, because the "people" factor is often the key of success or failure in the business to the management of 4 pl. The biggest target is to avoid a very good strategy designed becoming very ineffective process implementation, and thus limit the effectiveness of the scheme, affect the expected outcomes of the project.

(3) Change. Through the new technology to realize strengthening of various functions of the

supply chain, change efforts focused on improving the supply chain of a specific function. Including sales and operations planning, distribution management, purchasing strategy and customer support. At this level, supply chain management technology become crucial in the success or failure of the scheme. Leading and sophisticated technology, combined with strategic thinking, process reengineering and organization change management, to form the best solution, integrate and improve supply chain activities and processes.

(4) Reengineering. The process of supply chain collaboration, and supply chain of the redesign. The highest level of the fourth party logistics solution is reengineering. Real significant improvement in the process of supply chain, it is through each link program and the operation of the coordinated, it is through the various participants work together to achieve. Reengineering process is based on the traditional supply chain management consulting skill, making the company's business strategy and strategy of supply chain coordination. At the same time, the technology in the process also have the effect of the catalyst, integrate and optimize the internal supply chain and the cross of the performance of a supply chain.

#### **The characteristics of the fourth party logistics**

(1) High degree with information.

The fourth party logistics information system is provided by professional service providers, and information level is higher.

(2) Broad.

The fourth party logistics business involves the determination of the supply chain structure, supplier evaluation and selection, production planning, inventory and distribution management, marketing management and product development, which greatly exceeded the scope of business of third-party logistics.

(3) The fourth party logistics technology outsourcing is emphasized

The fourth party logistics outsourcing is mainly invisible technology, and the third party logistics outsourcing is primarily tangible logistics business.

(4) The quality requirement of the fourth party logistics to the employees is very high

Because of the fourth party logistics company is providing technical services consulting company, so the staff not only need the rich modern management skills and knowledge, but also need has a strong ability to foresee and strain capacity to change to the environment.

#### **The value of the fourth party logistics**

Fourth party logistics make full use the ability of a batch of service provider, including the third party logistics, information technology suppliers, contract logistics providers, call center, telecom value-added service providers, etc., combined with the customer's ability and the resistance of the fourth party logistics. In short, the fourth party logistics by providing a comprehensive supply chain solutions to meet demand of the broad and complex today's company facing.

#### **The application of logistics management under supply chain management**

##### **Applied in the logistics supply chain management of inevitability**

Logistics system is a social system, there are many factors that limit its development: customer condition and environment condition of different consumption area, shipping, logistics costs, inventory control, and so on. Applied in the logistics supply chain management is a kind of under the unified planning of logistics system, it has the characteristics of supply chain management and integration advantages. With the idea of business process reengineering, supply chain management makes the process ability of rapid restructuring greatly improve, promote the agility of logistics system, by eliminating unvalued the supply chain logistics system provides a basic guarantee to further reduce the cost and fine operation.

The supply chain is as a whole, cooperation and coordination are important features of the supply chain management. Logistics system in this environment also need seamless, its overall coordination should be strengthened, such as transportation of the goods to arrive on time, the needs

of the customers can be satisfied in a timely manner. Procurement of goods cannot be stuck on the way, to enhance collaborative supply chain, so supply chain logistics system to obtain a high degree of harmonization is to guarantee the success of a supply chain precondition.

Logistics management focuses on the function of enterprise internal integration, and supply chain management take all the node enterprises in supply chain as a whole, emphasizes the integration between enterprises and association between enterprises. Logistics management is the planning mechanism, and supply chain management is the consultation mechanism, is an open system, through the coordination of sharing the demand and inventory information in order to reduce or eliminate the buffer stock between supply chain members. The concept of supply chain management is not only a simple extension of logistics. Logistics management focuses on the optimization of "flow" in organization, and to supply chain management it is not enough to realize the importance of internal integration. So, logistics supply chain applied has not only optimize the traditional logistics system, but also make the logistics system to a higher level of development, make the logistics of the branched chain changed wide, make a best effect of supply chain management.

### **The characteristics of logistics management under the supply chain management system**

Logistics management is an important part of supply chain management, its marked characteristics is integrity. Information is very important in the process of supply chain management, the information transfer is carried out step by step between enterprises, deviation information is along the direction step by step, it is hard to avoid information distortion, information utilization ratio decreases. In addition, the general environment of the logistics management concept is lack of think of overall planning, each organization of the chain only care about their own resources, there is few communication and cooperation between each other. This often leads to the increasing inventory on one hand, on the other hand, when the market demanding it can't be met again, so enterprise inventory cost is very high, missing opportunities because of poor logistics system between enterprises. Under the supply chain management system, it is the strategic cooperation relationship between each link, with the interests of consistency, the exchange of information is not restricted by time and space, the flow of information increased, achieving the network transmission way of information, then the parties raised in the degree of information sharing, avoiding the information distortion. In addition, supply chain management under the system of logistics management has the following features.

(1) Improve the quick reaction capability of logistics system.

The Internet is a technology support to supply chain management, its members can obtain and process information in time, by eliminating unvalued program and time to further reduce the cost of the supply chain logistics system, provide basic protection in order to realize its agility, fine operation.

(2) To improve seamless connection of the logistics system.

Seamless connection is prerequisite to make supply chain coordination operation, without the seamless connection of logistics system, customer demand will is not timely meet, the increase of the tangible and intangible costs caused by materials purchase halfway up, and so on will make the value of the supply chain.

(3) Improve the customer satisfaction.

Under the supply chain management system, enterprises can quickly grasp the existing and potential special requirements of customers, make the enterprise change its activities according to the market demand and the supply. So that enterprises can supply goods or services to customers more faster and more economic than its competitors, greatly improving the service quality and customer satisfaction.

(4) The diversification of logistics service mode.

With the continuous development of modern information technology and logistics technology, logistics service mode, increasingly shows the characteristics of flexible and varied. In order to adapt to the requirement of international operation, specializing in logistics service of the third party logistics enterprise and the joint inventory management of distribution center appeared among

different countries in international logistics.

### **The function of the logistics management under supply chain management system**

(1) Inventory management. Through the inventory management to shorten the cycle of orders, transportation and payment, accelerate inventory turnover, reduce and eliminate the events of shortage, it is conducive to the whole supply chain coordination and operation.

(2) The order management. Order was issued orders to the supplier process, mainly including order supplier management, contract management and order management. Through the supply chain management, enterprise distribution of documents available on the entire supply network planning, and issue purchase order to automatically supply chain, through the contract management in the supply and demand both sides establish a long-term relationship, by checking the order quantity order form and submit it to the supplier and to pay for the goods that has been receiving.

(3) Distribution management. To goods and materials entering the distribution center, its management process basically has the following several aspects: the distribution, physical inventory management, transportation demand management team management, labor management, etc.

(4) The warehouse management. Warehouse management in addition to the feeder, acceptance, coding, storage of incoming goods and sorting, delivery, distribution, etc. for outbound goods, it also includes the purchase and sale agents, transportation, distribution processing, inventory control, etc.

### **How to coordinate the relationship between the supply chain management and logistics**

Logistics is an important part of the supply chain, and is throughout the supply chain, connecting each link in the supply chain, become the enterprise cooperation ties. In the process of making strategy of supply chain logistics, generally need to pay attention to the following problems: to segment with the customers, to determine the corresponding customer service levels for the different types of customers, such as ordering cycle, the mode of transportation equality; Grouped according to the sales of products, each product category can adopt different strategies. Order entry, order execution and delivery job process a large percentage of logistics activities, so we need to make the whole supply chain logistics process more efficient through technology and management, especially for the interface between member enterprises, by integrating can eliminate redundant workflow, improve the efficiency of the logistics. Each member enterprise should by improving the cooperation relations, the use of modern management methods and techniques to achieve accurate prediction and information sharing, to reduce the negative effects of uncertainty factors.

## **Conclusion**

Application in the logistics supply of chain management has been widely recognition, such as Wal-Mart sales distribution system planning, VMI program in Taiwan of nestle, the logistics under the supply chain management environment is more practical and productive. Enterprises through the logistics under the supply chain management environment to build a new enterprise management mode, overcame the defects of the traditional logistics, it is more adapt to enterprise development, more can reduce the cost and create profits for the enterprise.

## **References**

- [1] Zou Huixia. Supply chain logistics management. Tsinghua university press. 2004.
- [2] Zhou Qilei. Introduction to logistics. Tsinghua university press, 2005.
- [3] Japan research institute. Supply chain research, supply chain management. Citic publishing house, 2001.
- [4] Lin Yong, Ma Shihua, Supply chain management. Higher education press, 2006.
- [5] MeiShaoZu, Zhang Duo. E-commerce and logistics [M]. Tsinghua university press, 2000.