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The research on IKEA (CHINA)'s supply chain management

Yingyan Yuan

World Maritime University

Shanghai, China

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The Research on IKEA (CHINA)'s Supply Chain Management

By

Yuan Yingyan

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MASTER OF SCIENCE

In

INTERNATIONAL TRANSPORT AND LOGISTICS

DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature):_____

(Date):_____

Supervised by
Professor Zhao Gang
Shanghai Maritime University

Assessor
World maritime university

Co-Assessor
Shanghai maritime university

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ABASTRACT

Title: **The Research on IKEA (CHINA)'s Supply Chain Management**

Degree: **Master of Science in International Transport and Logistics**

In China's furniture and home market, the most prominent may be the case from the IKEA of Sweden. When it entered China market in 1998, this furniture giant in the global market had experienced very slow business development in China over the first 7years. To be happy to know, it begins to speed up its expansion in China from now on. However, the Chinese competitors have grown up quickly in the past few years. If IKEA wants to have the majority market share in China or even extending to the whole Asia Pacific market, it has to build up its own high efficient supply chain to overall control the supply chain operation throughout the region. This article will focus on current market environment and development opportunity which IKEA is facing, by using supply chain management theory to optimize the company's supply chain system. By analyzing IKEA supply chain strategy (including pricing, sales forecast, purchasing, distribution and high flow/low flow strategy), and supply chain controlling process (including purchasing, inventory control and distribution network setup), I understand the advantage of IKEA supply chain and existing problems. With related supporting theory, I propose some inventory management method and system consolidation idea to make a balance between service level and stock level, and to solve current problem of high stock level and high cost in the IKEA supply chain.

Key words: IKEA, Supply Chain Management, High flow/Low flow strategy, Inventory management, Distribution Strategy

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LIST OF ABBREVIATIONS

SCM	Supply Chain Management
VMI	Vendor-managed inventory system
JIT	Just In Time
DC	Distribution Center
OEM	Original Equipment Manufacture
IoS	IKEA of Sweden
DD	Direct delivery

Chapter I. Introduction

1.1Research background, purpose and significance

In today's highly competitive marketplace, only improving the quality of services so that enterprises can gain more market share and profit. And improving service quality must forge closer links with the upstream and downstream members of the supply chain. In a sense, now the competition has changed from it among enterprises to it among the chains of supply chain. M. Christopher, a famous American supply chain expert, considers that 'the competition of the 21st century is not the competition between enterprises but the competition between supply chains', 'there is only supply chain in the market without any enterprise'. In 1997, an investigation(involving 165 enterprises of six industries) on SCM(supply chain management) from PRTM(Pittiglio Rabin Todd & McGrath) company indicated that through SCM, an enterprise can achieve the following benefits: (1)The total cost of SCM reduces by 10%(the percentage which the cost accounted for of the income); (2)On-Time Delivery of medium-sized enterprises increases by 15%; (3)The Lead Time of Order Fulfillment shortens 25%-35%; (4)The inventory of medium-sized companies decreases by 3% as well as it reduces by 15% in blue-chip companies. (5)The performance of the Financial Operations in blue-chip companies improves by more than 10%. (6)Blue-chip companies have the advantage that their cash flow turn-around time is 40-65 days less than that of average companies.

As a multinational company, IKEA is one of the world's largest furniture & furnishing retailers. It has 273 retail shopping malls in total, carries out business in 40 countries and manages product lines including about 9500 kinds of household products, about one-third to be updated every year. When people leisurely stroll in the IKEA shopping malls, they can select several favorite goods from the household goods placed in all sorts of 'model homes', such as BILLY bookshelf, take some time to assemble the 'flat packing' together at home. They can also do not buy anything, just taste small snacks in Nordic-style at the IKEA restaurant or simply sitting on the sofa of model home for a few hours as a pastime. People go to IKEA Mall as one of the leisure items during holiday spare time. IKEA brand has gained recognition.

IKEA business management profoundly embodied the concept of control of own-brand: IKEA not only has one of the world's largest furniture & furnishing sales channels, but also hope to span the globe by its own brand. Based on this concept, IKEA has been insisting all products by the self-designed, and it has thousands of suppliers. In order to minimize manufacturing cost, 45 trade offices in 31 countries are simultaneously responsible for communication with suppliers and product quality supervision. The goods produced by a number of suppliers are separately stored in

different commodity distribution centers across the world through international procurement methods. Finally, according to the orders of shopping malls in the world, different types of products are distributed together to every quarter of the globe in distribution centers.

With the rising IKEA business, it is beginning to show through the problems of its SCM system, such as inaccurate sales forecasts, much high total inventory cost and the low level of information integration and etc. This cause IKEA needs to rescan its SCM system, in order to protect normal operation and development of its global business, and maintain its cheap and fashionable brand image in the global market.

1.2 Main research contents and research framework

IKEA has 45 trade companies located in 31 countries and 1350 suppliers located in 50 countries around the world. IKEA puts core product design department in Sweden, which designs 1000 kinds of household goods every year. The manufacture of furniture is using outsourcing, and suppliers are required to produce in accordance with the drawings. Whether in China, Poland or Sweden, manufacturers have to guarantee that they follow IKEA‘s design and quality standards. In order to maintain an efficient low-cost commercial value chain, the inner IKEA operates a very complex, huge SCM system..

This article will focus on current market environment and development opportunity which IKEA is facing, by using supply chain management theory to optimize the company’s supply chain system. By analyzing IKEA supply chain strategy(including pricing, sales forecast, purchasing, distribution and high flow/low flow strategy), and supply chain controlling process(including purchasing, inventory control and distribution network setup),I understand the advantage of IKEA supply chain and existing problems. With related supporting theory, I propose some inventory management method and system consolidation idea to make a balance between service level and stock level, and to solve current problem of high stock level and high cost in the IKEA supply chain.

Full text is divided into five parts, as shown in Figure 1.1

1.3 Literature Review

1.3.1 The concept and structural model of supply chain

The concept of supply chain earliest developed from the concept of ‘value chain’ which was proposed in the book ‘Competitive Advantage’ written by Michael Porter in 1980, who is a famous enterprise strategy management expert and a well-known professor of Harvard University. It is a structure model of functional network chain that connects suppliers, manufacturers, distributors, retailers, even until the end-users

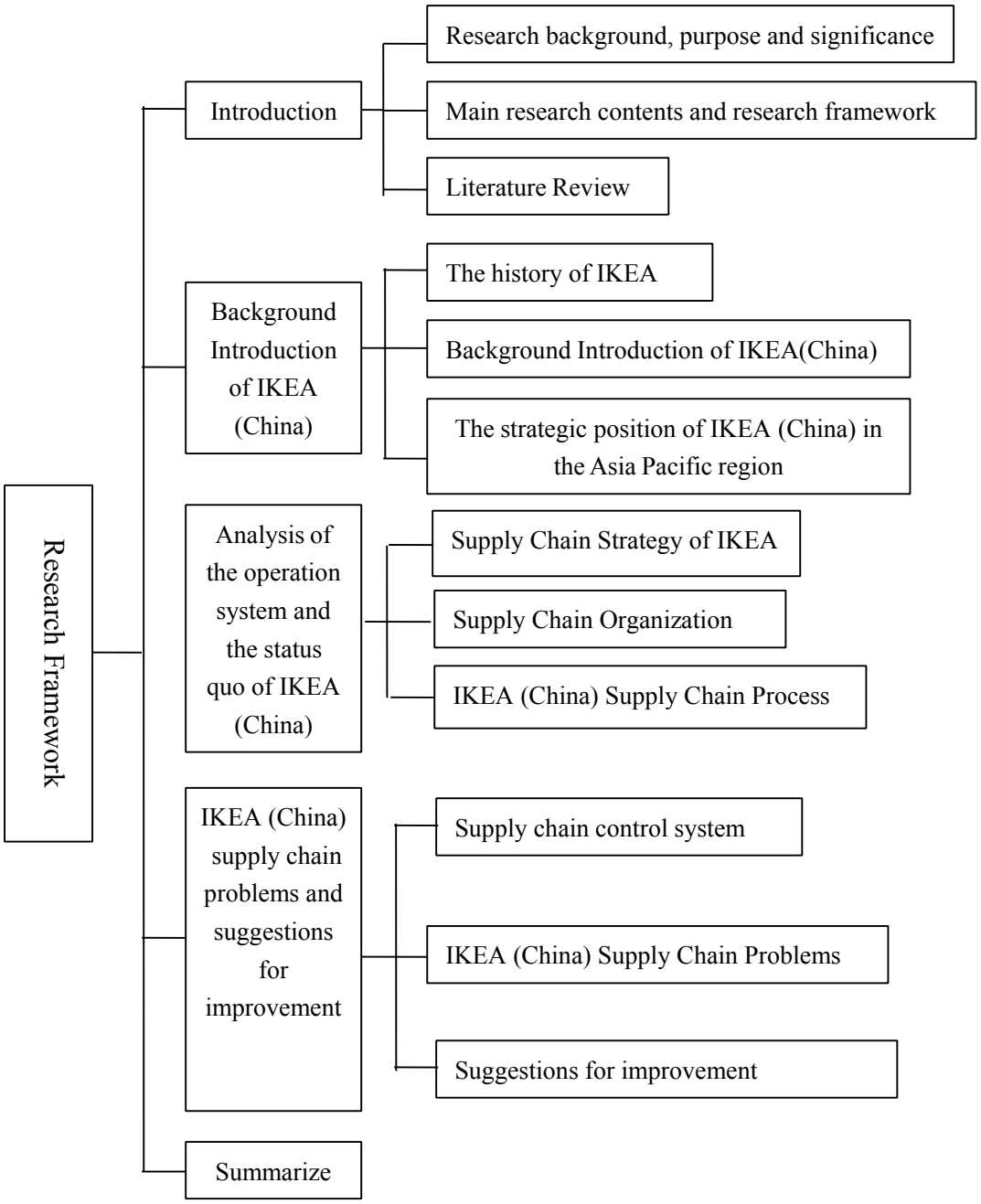

Figure 1.1 Research Frameworks

as a whole, which is focusing on core business, through the control of information, logistics and capital flow, beginning with the procurement of raw materials, then made into intermediate products and final products, finally, the products are delivered to consumers by sale network. It is a wider range of enterprise structure model and contains all joining nodes enterprises, from the supply of raw materials, through manufacturing, processing, packaging, distribution, etc. of different enterprises of the chain, till the end-users. It is not only a material chain, information chain or capital chain that connects supplier to user, but also a value-added chain, that materials increase their value due to processing, packaging, transport and other processes of the

supply chain to generate revenue for the relevant enterprises.

Based on the above definition of the supply chain, its structure can be simply summarized as the model showed in Figure 1.2.

As shown in Figure 1.2, supply chain consists of all joining node enterprises. Generally, there is a core enterprise (may be a manufacturing enterprise or a large-scale retail enterprise, such as Wal-Mart of America). Node enterprises increase the value constantly of the whole supply chain in a move for information demand through cooperation and division of labor of the functions of supply chain, taking capital flow, logistics and / or service flow as mediums.

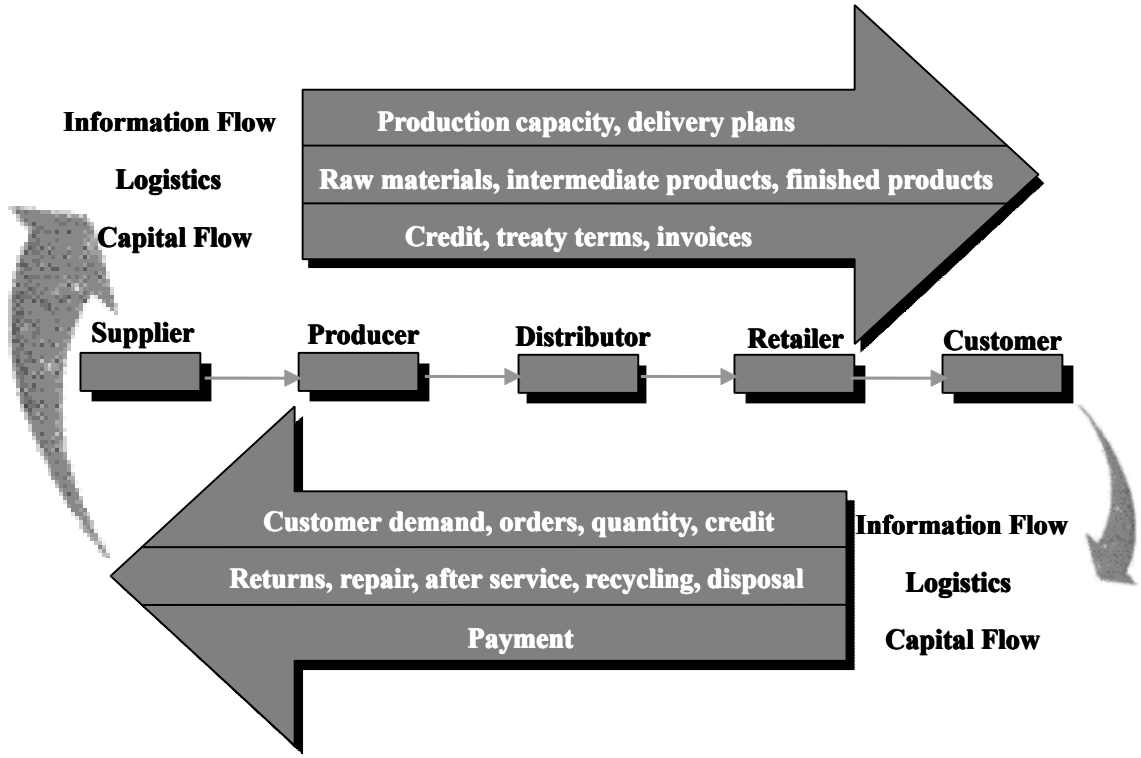

Figure1.2 Figure of supply chain network structure

1.3.2 Demand of supply chain management

1.3.2.1 What was the purpose of supply chain management?

When companies find new technologies and strategies to enable enterprises to reduce costs, and better participate in different markets to competition. These strategies (such as the timely manufacturing, Kanban management, lean manufacturing, total quality management, etc.) have become very popular, so companies put a lot of resources to implement these strategies. However, in as much as possible to reduce manufacturing costs, these companies found to further increase their profits and expand market share is also a need for an effective supply chain management. Found that many businesses that exist in the supply chain due to excess inventory, non-efficient transport and waste

strategies and other practices to enable enterprises to invest in the logistics area contains a lot of unnecessary costs. Therefore, in the supply chain there are many opportunities to reduce costs. Through effective supply chain management can significantly increase revenue or reduce costs.

1.3.2.2 Key issues and trade-offs related to decision-making

1) The structure of Sales Network

Consider a number of plant products to serve a group of geographically dispersed retailers such a problem. At present, a group of storage is considered inappropriate, the management wanted to re-design of organizations and distribution network. For example, this may be due to changes in demand patterns, or as a result of a number of existing warehouse lease contract termination. In addition, changes in demand patterns may require changes in the level of production plants; choose a new supplier of goods in the distribution network design of the new flow. Management needs to be considered is how to minimize the total production, inventory, transportation costs and service levels to meet the conditions, the selection of warehouse location and capacity of each plant to determine the level of production, the arrangements between the facilities (from the factory to from warehouse to warehouse or retailer) of the transport flow.

2) Inventory Control

Consider a retailer of products for a particular stock holding such a problem. Because customer needs change over time, retailers can only use historical data to forecast demand. Retailer's goal is to decide what point in the re-ordered some products, as well as ordered to minimize inventory and custody costs, the number of products should be set. More fundamental question is why retailers want to keep inventory? Because of the uncertainty of customer demand, supply uncertainty, or some other reasons? If it is because of the uncertainty of customer demand, then the possibility of adopting certain measures to reduce this uncertainty? Retailer’s order quantity should be greater than, less than or equal to the forecast demand? Finally, how much inventory turns should be used? Whether different industries have different inventory turns?

3) Distribution strategy

Distribution system planning including business objectives, logistics strategy, logistics, tactical and physical operation of the planning, supply chain planning is specific as the center of the freight planning, transport system planning, vehicle routing and mobilization as well as storage planning. Supply Chain Planning includes factories and distribution centers to determine the location, size and composition of the internal structure, the broad distribution and transportation plans, capital goods suppliers and

customers to determine the source of the determination. Planning is a cargo supply chain scheduling transportation arrangements, including the set mode of transport for goods and choice. Transportation system planning includes the identification of the location, size and composition of the transport infrastructure, and the fleet size and transport network planning. Routing and scheduling of vehicles including vehicles, drivers, and so on scheduling, but also may include the dynamics of the goods sent, the customer service area and determine the frequency distribution. Warehousing facilities planning includes distribution center design and the design of the operation of the store and picking of the layout. Distribution system goal is: high delivery quality, high delivery efficiency, low distribution costs and high service levels.

The distribution center based on the mode of operation of the supply chain is an advanced management mode, which supplies logistics to abandon the traditional mode of operation of the shortcomings of poor sub-block, all the supply chain logistics activities to the cooperative or joint distribution centers to deal with, distribution center using the integrated logistics management, greatly reducing the logistics costs and improve the operational efficiency of the supply chain.

4) Supply chain integration and strategic partnership

As a result of the dynamics of the supply chain itself, as well as different agencies and partners have conflicting goals, to supply chain integration is very difficult. In any case, integrated supply chain is not only possible, but it can-to-business market share performance and have a tremendous impact. However, in today's highly competitive market, most companies have no choice; they are forced to integrate their supply chains and strategic partnering busy. This kind of pressure is from their customers and supply chain partners. How the success of integration? Clearly, information sharing and operational success of the integration plan is the key to the supply chain. But what information should be shared? How to share? Information on how the impact of supply chain design and operation? In the organization of internal and external co-operation between the levels of integration required? Finally, the implementation of the types of partnerships, as well as in a given circumstances, should be the type of partnership?

5) Product Design

Efficient design in the supply chain plays a key role in several aspects. The most obvious is that the design of certain products compared to other designs will increase the cost of keeping inventory or transportation costs, while others may be beneficial to shorten the design lead-time manufacturing. Unfortunately, the product re-design is usually costly. When the product should be redesigned to reduce costs or shorten the logistics supply chain lead-time? Adopted the role of product design, customer needs to make up for the non-block characterization feasible? Strategy can lead to cost savings quantified rated? Order to take advantage of new product design, supply chain should be on what kind of changes? Finally, the new concepts such as a large number

of customization become more and more popular, in the process of the successful implementation of these new concepts; what a role is supply chain management plays!

6) Information technology and decision support system

Information technology is to achieve effective supply chain management the key factor. In fact, the current supply chain management for a number of interest because of the opportunities arising from a large amount of data, as well as through the analysis of these data is complicated by the cost savings can be achieved inspired. Supply chain management is not a question of whether the basic access to data, but rather what should be the data transfer. What are the data that is supply chain management is important, what data can be ignored? How to proceed with data analysis and utilization? What is the impact of the Internet? What is the role of e-commerce 7 in-house and supply chain partners need to what kind of infrastructure? Finally, since access to information technology and decision support systems, these technologies can be used to access the market as the main tool for competitive advantage? If you can, then what factors are to prevent other companies using the same technology?

All of the above decision-making on key issues related to how the supply chain in the process of working out a balanced grasp of these issues is essential.

1.3.3 The need for supply chain management and the potential benefits

Supply chain is an organization across businesses, which transmits products or services to customers. Supply chain combines with the upstream and downstream businesses, together responsible for procurement, manufacturing, distribution and other commercial activities. SCM is mainly directed against the changes of market demand, providing accurate predictive capability, so that enterprises can be early identification and deployment, real-time decision-making, real-time supply, and keeping pace with market demand.

The effectiveness of supply chain is as follows:

- Reduce cost and inventory.
- Improve the accuracy of delivery.
- Enhance overall productivity.
- Provide accurate forecasts
- Share risk and reward.

1.3.4 Supply chain management strategies, tactics, and operational issues

1.3.4.1 Important strategic decision-making

1) Determine the appropriate number of warehouses

We assume that the geographical location of factories and retail stores the same. Our aim is to build or re-design the logistics network to meet the service level required under the conditions so that the system was to minimize the total cost, total system cost including the cost of production and procurement, inventory keeping costs, institutional costs (storage, handling and fixed costs), as well as transportation costs. Attention to another key decision-making, that is, the choice of mode of transport (such as truck, rail).

In such circumstances, the trade-off relationship is very clear. Increase in the number of storage usually results in:

① Due to the shortened transit time, increased the level of service
② Because of safety stock (one for each warehouse in order to prevent the uncertainty of customer demand and inventory holding) increase, resulting in an increase in inventory costs.
③ Management fees and preparation costs.
④ Outward transport costs (from the warehouse to the customer's transportation costs) decline.
⑤ To transportation costs (from the suppliers and / or manufacturer to the warehouse transportation costs) were seen.

In essence, enterprises must set up a new warehouse close to the customer the cost and benefits of trade-offs between. Therefore, the storage layout of the supply chain decision-making is to decide whether it is an effective channel for selling their products due to demand the key.

2) Storage cost

Warehouses and distribution centers, including the cost of three main parts:

① Handling costs. This includes the cost of labor utilization, and storage of these costs in proportion to the annual flow.
② Fixed costs. This includes all of the material through the warehouse out of proportion to the number of the cost of the project. Usually associated with the storage of fixed size (capacity) is proportional to. But it is not linear.
③ Storage costs. This means keeping inventory costs, inventory levels and the average proportion.

3) Inventory Management

In order to protect the company avoid unpredictable changes in customer needs. Always difficult to predict customer needs, and because of the following reasons, the uncertainty of customer demand to increase.

① Product life cycle continues to shorten. This means that if the customer needs the historical data may not be able to access or very limited.
② Emerging market of new competitive products. Products so that the forecast increase in demand for a particular product has become increasingly difficult. In fact, despite the forecast product group (that is, predict the same market competing demand for all products) is relatively easy, but the forecast demand for a single product on the much more difficult.

In many cases, the quantity and quality of supply, suppliers, cost and delivery time, if there is a lot of uncertainty.

What is the main factor that impact inventory strategy?
① First, customer needs. This may be known, or it may be random. In the latter case, if you have access to historical data to estimate the customer's needs and the needs of the average volatility (standard commonly used to indicate poor fishy). Then we can use prediction tools to predict demand.
② The lead-time inventory replenishment. This may be when we have issued orders is known, or it may be uncertain.
③ The number of product categories of warehouse storage.
④ The length of plan.
⑤ Costs include ordering cost and inventory carrying cost. In general, the ordering cost consists of two parts: product costs and transportation costs.
⑥ Level of service needs. Uncertainty in customer demand, it is necessary to fully meet customer orders is often not possible, management need to determine an acceptable level of service.

We can see to improve inventory turnover slaughter, to reduce average inventory levels, which is defined as follows;

Inventory turns = annual sales / average inventory levels

Higher level and therefore the movement of goods, the risk of outdated merchandise smaller, lower inventory investment. Of course, the low inventory levels themselves are not always suitable, because of low inventories increased the risk of lost sales opportunities.

4) Distribution strategy

To consider the supply chain began in manufacturers and suppliers (the case of retail goods) to the final customer - the part of retailers, usually you can use three different distribution strategies outward.

① Direct transportation, in the strategy. Of goods transport from suppliers to retailers directly, bypassing distribution centers
② Storage, this is a classic strategy, strategy in the warehouse inventory and

preservation of customer needs in accordance with the provision of goods

③ Direct transfer, in the strategy, product constantly from suppliers to customers through warehouse distribution. However, the warehouse is almost time for the preservation of goods does not exceed 10-15 hours.

We have been thoroughly debated over the traditional strategy for warehousing. Here to discuss the direct transport and direct transfer.

◆ Direct transport

Direct transport strategy does not refer to transport through warehouses and distribution centers. Transport manufacturers or suppliers to deliver the goods to retail stores. Such a strategy has the advantage of being:

① Retail distribution centers to avoid the cost of the operation.

② Shorter lead time.

This distribution strategy also has several shortcomings;

① Negative effects of risk-sharing, because there is no central warehouse.

② Manufacturers and distributors of transportation costs increased. As to send a smaller truck delivery to more places.

For these reasons, the needs of retail stores when the goods vehicle, which means that the warehouse did not help reduce transportation costs, when direct transport is correct. Direct transport from powerful retailers often requires the use of, or in the critical early period of use. Sometimes, manufacturers do not want to participate in the direct transport, but have no choice in order to obtain business. Direct transport in the grocery industry has become very popular. In the grocery industry in the early period is very crucial because some goods are perishable.

◆ Direct transit

Direct transit is well-known because of Wal-Mart. In this system, warehouse inventory to serve as focal points, rather than inventory storage point. In a typical direct transfer system, the goods arrived at the warehouse from the manufacturer, and then transferred to serve the retailer's vehicle, and then as soon as possible shipped to retailers. Of goods in warehouses stay a short period of time - usually not more than 12 hours. In this way save time by shortening limits the inventory costs and shorter lead time.

Wal-Mart's huge market growth highlights the effective coordination of inventory replenishment and transportation strategies. Wal-Mart is the world's largest and most profitable retailers, its competitive strategy in many ways a key role in its success, but perhaps most important to balance the direct transfer. Wal-Mart's use of the direct transfer is about 85% of the technical delivery of the goods, with its competitors, only 50% of Kmart. In order to implement the direct transshipment, Wal-Mart's use of a

private satellite communications system, which Wal-Mart suppliers to send point-of-sale data to enable a clear understanding of the supplier's sales stores. In addition, Wal-Mart has a fleet of 2000 trucks, shops twice a week on average added goods. Wal-Mart is through a direct transfer to enable vehicle access to the economies of scale in procurement. Wal-Mart to reduce the required safety stock, compared with the industry average of 3% reduces the cost of sales, this is a major factor why so many high profits of Wal-Mart.

Of course, the direct transfer approach requires a huge investment to start and difficult to manage because:

① Distribution centers, retailers and suppliers are required to use advanced information system, to ensure that the required time frame to complete the selection of commodities and transportation.

② In order to directly operate transit systems, there must be a rapid reaction of the transport system.

③ Forecast is critical, the need for information sharing.

④ Only at any time and the large number of vehicles to the transit agencies direct delivery and sorting of large-scale distribution systems, direct transfer strategy is effective. In such a system, every day, enough to allow the number of goods from suppliers to warehouses full car transport. Because these systems usually include a number of retailers, and thus the demand is enormous, and it arrived in a direct transit agencies to ensure that goods vehicles can be immediately transported to the number of retail stores.

It's very rare for large retailers to adopt only one kind of these strategies. Generally speaking, in different ways for different products, it is necessary to analyze the supply chain and to identify specific products or product categories and identify the appropriate way. In order to assess these concepts, need to understand a simple question: the factors that affect the distribution strategy for what? Clearly, the customer needs and location, service level, cost (including transportation cost and inventory cost) all play a role. Analysis of inventory costs and transportation costs of the interaction is very important, transport costs and inventory costs depend on the size of transport, but the effect is the opposite. Increase in the number of volume reduction of transport, so that traffic of the shipper to use price discounts, thus reducing transportation costs. However, large quantities of goods per unit of increase in inventory costs because goods in the consumer retained in the warehouse prior to longer period of time.

Changes in the demand have the same influence on the distribution strategy. In fact, the demand changes have an enormous impact on the cost. Changing the greater, the need for safety stock is more. Therefore, preservation of warehouse inventory to prevent changes in demand and uncertainty, and there is a risk due to concentration effect, the distributor will have more storage, the required safety stock you have. Conversely, if storage is not used to store inventory (such as direct transport strategy) or no storage

(such as direct transport), the distribution system needs more safety stock. This is correct, because in both cases, each store needs to retain sufficient safety stock. However, we can be able to better demand forecasts and safety stock requirements and lower marketing strategies will be described below, the diversion of strategic commodities to reduce this impact. Different strategies to evaluate the lead time must be taken into account, the number of different requirements and capital investment programs.

Table 1.1 summary and comparison of three marketing strategies. Storage refers to storage strategies to retain the inventory warehouse distribution strategy classic. Table "distribution line" means different products need to be allocated to different time of retail stores. It is clear that the direct transport. The allocation of decision-making must be earlier than the other two strategies, so the need for a longer period of the forecast period.

Strategy	Direct shipment	Cross-docking	Warehouse inventory reservation
Risk sharing			Use of concentration of risk
Transportation cost		Reduce inside cost	Reduce inside cost
Carrying Cost	No storage costs	No carrying cost	
Distribution		Delay	Delay

Table 1.1 Distribution Strategies

5) Transhipment

Rapid transportation and advanced information systems to enable the development of transit as a strategic option for the supply of enough to take into account an important option. Transfer means in order to meet some emergency needs, the supply chain of the same level between different agencies of goods transport.

Transfer the retail level, often considered an option. Such as mentioned earlier, the transport capacity will enable retailers to other retailers' inventory to meet customer demands. In order to achieve this, retailers need to understand what other retailers stock and must be able to quickly bring their products to stores or customers at home. These requirements can only be resolved through high-level information systems to meet. Senior information systems allow retailers to know what other retailers, inventory, and to promote rapid transit between retailers.

If there are appropriate information systems, reasonable transportation costs, as well as all the retailers are living in the same owner, and then the transfer is meaningful. Under

such circumstances, even in the absence of the central warehouse, the system can focus on effective use of the idea of risk, because we can not ask in a retail store as the inventory is a huge part of a single warehouse.

All independent and independent retailers could avoid the transfer because the transfer would help their competitors.

6) Center institutions and local institutions

Another supply chain design is the key to the decision-making involving the use of centralized production and storage or local agencies. Summarize here the important considerations:

① Safety stock. Warehouse merger will enable both the distributors to focus on the use of risk. Generally speaking, this means more focus on operations, security, lower inventory levels.

② Management costs. Operating economies of scale indicate that a few large central warehouse operation in relation to the occurrence of many small warehouses lower total cost of management.

③ Economies of scale. In many manufacturing industries, if the manufacturers to merge, then get economies of scale. Usually the total annual production capacity in the same conditions, the operation of many small manufacturing organizations spends more costs than operation of a few large institutions.

④ Lead-time. If many warehouses are located in areas close to the market, then the market in general lead time can be shortened.

⑤ Services. It depends on how the definition of services. As mentioned above. Centralized storage to take advantage of risk-sharing. This means that the total use of lower inventory levels in order to meet more; but on the other hand, from the warehouse to the retailers, the transportation time will be longer.

⑥ Transportation costs. Transportation costs and the number used is directly related to the warehouse. With the increase in the number of warehouses, production agencies and the transportation costs between warehouses will increase, because the increase of the total distance and, more importantly, the number of discount the possibility of using even smaller. However, from the warehouse to the retailers may reduce the transportation costs, because the storage and market close.

Of course, in an effective distribution strategy, some products may be stored in the central body, and other products stored in local warehouses. For example, extremely expensive, the customer is not high demand for goods can be stored in central warehouses and low cost, high demand products that can be stored in a number of local warehouses. In addition, the use of centralized or local production or warehouse-type institutions may not necessarily be a non-that is, decision-making. Local operations and focus on the issue of an extent, due to varying degrees have given varying degrees

of advantages and shortcomings. Finally, the senior information systems of all types of systems in favor of other types of systems have some advantages. For example, senior information systems to the warehouse at the same time carefully in advance to shorten the duration and reduce the safety of the local warehouse inventory.

1.3.5 Setup of Supply Chain Performance Evaluation System

Holmberg (1997) the first time had explicitly put forward the "supply chain evaluation system development model" from the perspective of organizational performance in the supply chain. Focus of attention is vertical integration of the evaluation system of organizations from supply chain to supply chain members. Domestic and foreign scholars on supply chain performance evaluation indicators set focus and from their different starting point, the index system is also complex and varied. Davis (1993)[1] analyzed environmental impact factors of supply chain performance evaluation from the theoretical level, and put forward the three key indicators of supply chain performance evaluation: demand uncertainty, supply uncertainty and technical uncertainty. Narasimhan, Jayaram (1998)[2] used structural equation from four indicators including the resources of the decision-making, manufacturing goals, customer responsiveness and manufacturing performance to analyze its impacts on the reliability, flexibility, cost and quality of supply chain integration. BradleyHull (2005)[3] from the perspective of supply and demand flexibility of supply chain, analyzed empirically supply chain performance evaluation questions, and sets up four evaluation indicators: ①Supply chain responsiveness to market shifts; ②Capacity utilization; ③ Allocation problems; ④ Quantity impact of price discounts or cost increases. Professor Roger (1999)[4] evaluates supply chain performance from 10 aspects: ① Tangibles;②Reliability;③Responsiveness;④Competence;⑤Courtesy;⑥Credibility; ⑦Security;⑧Access;⑨Communication;⑩Understanding the Consumer.

The study made by chinese scholars on the supply chain performance evaluation focused on the measurement of the overall operation of the supply chain, cooperative relations between supply chain members, as well as the supply chain enterprises, performance evaluation focused on the choice of indicators can appropriately reflect the overall supply chain operations, as well as operation relationships among up and down node enterprises, rather than alone in the evaluation of a supplier's operations. MA Shihua earlier study of supply chain performance evaluation problem, consider the performance of the supply chain in general from three aspects to consider: First, internal performance metrics, and the other is the external performance measurement, three is integrated supply chain performance metrics. Chang Liangfeng[5] considered

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[1] Davis T. Effective supply chain management [J].Sloan Mnagement Review, 1993, (2): 35-46.

[2] Narasimhan R, Jayaram J. Causal linkages in supply chain management: an exploratory study of North American manufacturing firms [J]. Decision Sciences, 1998,29 (3): 579-605.

[3] BradleyHul,l The role of elasticity in supply chain performance [J]. Int. J. Production Economics, 2005,(98): 301-314

[4] Roger D.Blackwell, Professor of Ohio State University, enjoys a high reputation in SCM

[5] Chang Liangfeng. Supply chain optimization and the main problem from the Applied Research Strategies [D]. Northeastern University, 2003

that supply chain performance evaluation indicators could be designed for four levels: as the following table,

Layer	Index required evaluation
Base Layer	Product quality, price, flexibility, delivery time and lead time, etc.
Compatibility Testing	Compatibility between the partners
Ability Layer	Market share, technology level, production capacity and sales network, etc.
Input Layer	Confirm the input intent of partners

Table 1.2 Supply chain performance evaluation indicators

In a word, setup of supply chain performance evaluation indicators based on the differences of supply-oriented and demand-oriented to build a different supply chain strategies, and should be the point of view of overall supply chain rather than from a single enterprise or department. Attention should be paid to the supply chain between enterprises, enterprises with the overall supply chain interaction between the performance of its evaluation, which should be based on supply chain processes and activities, a key factor in the competition to evaluate and support continuous improvement. Attention paid to stress evaluation index system is feasible and effective.

1.3.6 Operation

1.3.6.1 VMI (Vendor-managed inventory system)

VMI is a decision-making agent model of supply chain integrative operation. It makes the user's inventory decision-making power to the supplier agents, and the supplier agents, wholesalers and distributors use inventory decision-making powers. This inventory management strategy breaks the traditional pattern that they managed themselves respectively, which reflects the thinking of integrated supply chain management and adapts to the requirements of changing market. It can also break through the traditional fragmented inventory management model, use a systematic, integrated management idea to manage inventory, so that supply chain systems can be synchronized operation, which reflects the integrated management thought of supply chain.

VMI key measures are mainly embodied in the following principles:
(l) The spirit of cooperation (the principle of cooperation). In the implementation of the strategy, mutual trust and transparency of information is very important. All of suppliers and customers (retailers) should have a better spirit of cooperation, so that it is able to maintain better mutual cooperation.

(2) Minimize the cost of the two sides (the principle of reciprocity). VMI is not about how to allocate the cost or who is going to pay, but problems on reducing costs. The adoption of the strategy can reduce the cost of the two sides.

(3) Framework Agreement (Target consistency principle). Both sides understand their respective responsibilities and reach a consensus on the goals to the concept. For example, stock where, when paid, whether or not charge management fees, how much should cost and other issues, all above should be answered and embodied in the framework agreement.

(4) The principle of continuous improvement. It enables both sides of supply and demand to share interests and eliminate waste. The main idea of VMI is that suppliers set up inventory under the user's permission, determine the inventory levels and replenishment strategy, with inventory control power.

The VMI system with careful design and development, not only can reduce the inventory levels of supply chain and reduce costs. But also users can have access to a high level of service, improve cash flow, share the transparency of the changing needs with suppliers and acquire a higher degree of user confidence.

1.3.6.2 JIT (Just In Time)

JIT is originated from Toyota Production System. The main purpose is to "Completely rule out the waste". Waste is defined as "the factors only increase the cost of production". Basic mean of the strategy is: timely and adequate production. That is, when required according to the amount needed to produce products with the use of the "pull"-style production management mode that "post-process to receive",
The basic idea of JIT production mode is that "only when necessary, according to the volume of the needs to produce needed products", namely, the pursuit of a non-inventory, or the production system that achieves minimized inventory. The basic idea of JIT is production planning and control and inventory management.
JIT production mode takes production on time as the starting point, first of all, to expose excessive production and other wastes, and then to eliminate and rectify the equipments, personnel, etc. in order to reduce costs, simplify the planning and enhance control. In terms of the control technology in production field, JIT basic principle is at the right time, to produce the right number of parts or products, namely, just in time. It changes the delivery of goods from front-end production to back-end production during the traditional process, to the delivery of goods from back-end production to front-end production according to ‘Kanban’. Kanban system is the core of control technology in JIT production field, but the JIT is not just Kanban management.

One of the JIT bases is balanced production, namely average manufactured products, so that the logistics can move in balance and equilibrium between the operations, the

lines, the processes and the plants. In order to achieve a balance, month plan and day plan are adopted in JIT, and the plans are adjusted in time in accordance with the changing needs.

JIT promotes the adoption of the layout of target's specialization, to reduce queuing time, transport time and preparation time. At the factory, the first-level adoption of the layout of target's specialization can make the workpieces move smoothly among operation areas and workplaces to reduce the transit time; At production line and work centers, the first-level adoption of the layout of micro-target's specialization can reduce the transit time.

JIT can make rational use of productive resources, including the flexibility of labor and equipments. When the market demand fluctuates, it is required that labor resources also be adjusted accordingly. When the increase of demand is not much, it can be completed by adjusting properly the operations of the operators who have multi-type technologies. When the demand decreases, it can adopt the operations of reducing production schedules, dismissal of temporary workers, allocating extra operators to maintenance and repair equipments. This is the meaning of the flexibility of labor. While the flexibility of equipments refers to considering processing problems when design products and developing multifunctional devices.

JIT placed emphasis on total quality management and the goal is to eliminate substandard goods. To eliminate the root that may lead to substandard goods and try to solve the problems, JIT also contains many factors conducive to improving the quality, such as small quantities, spare parts soon move to the next process, early detection of the quality problems and so on.

1.3.6.3 Bullwhip Effect

The bullwhip effect is the magnification of demand fluctuations, not the magnification of demand. The bullwhip effect is evident in a supply chain when demand increases and decreases. The effect is that these increases and decreases are exaggerated up the supply chain. The essence of the bullwhip effect is that orders to suppliers tend to have larger variance than sales to the buyer. The more chains in the supply chain the more complex this issue becomes. This distortion of demand is amplified the farther demand is passed up the supply chain.

"Bullwhip effect" is a prevalent high-risk phenomenon among marketing activities. It causes by demand forecast updating, order batching, price fluctuation, rationing and shortage gaming and so on. The bullwhip effect increases the instability of production, supply, and inventory management and marking of suppliers, directly improves the supply and inventory risk of suppliers, even disturbs the schedule plan and marketing management order of producers and eventually causes the confusion of production, supply and marketing. Companies can circumvent or resolve the impact of demand

amplification from 6 aspects， including order management at different levels; to strengthen warehousing management, and share inventory responsibilities with reason; to shorten the lead time, and carry out outsourcing services; to circumvent the Game Behavior under the shortage situation; reference to historical data, appropriate amendment of reduction, and to sent in batches.

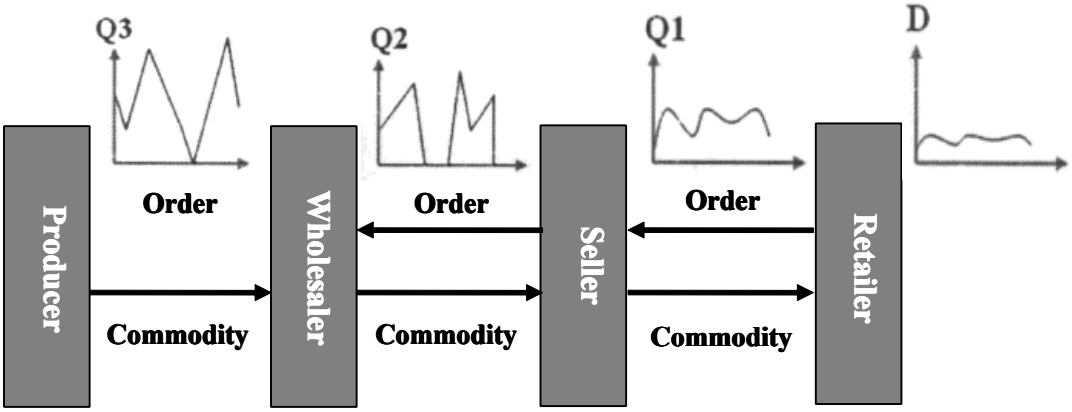


Figure 1.3 Bullwhip effect diagram

Chapter II. Background Introduction of IKEA (China)

2.1 The history of IKEA

This large commercial institution was founded in 1943. At that time, the 17-year-old founder, Ingvar Kamprad, with the original intention of ' want to earn pocket money ', found the IKEA beginning from mail orders of pencils. In Sweden of the day, in a period of rapid economic development, the rural population declined rapidly but it of city was growing and expanding, and radiation development to the outskirts. Youth cried for finding a place to live down; it is necessary for them to decorate new houses as cheap as possible. Then, the suggestions on the use of furniture from the Swedish government are: Facilitate the livelihood, but also conducive to health. Ingvar kept his gaze upon the furniture industry.

In 1948, Ingvar put out of the first AD of furniture merchandise. This advertisement vigorously publicized a kind of nursing chair with no handrails and a kind of coffee table. He named the chair ‘Ruth’. He feels that there is too much trouble for customers to note down the serial number of each commodity. From then on, named for each piece of furniture has become the IKEA tradition, which has been retained to the present.

The AD evoked strong repercussion; these two pieces of furniture sold to many. So Ingvar issued to publish a kind of brochure called 'IKEA communications' for the regular customers, which is the rudiment of the merchandise catalog of IKEA. Ingvar added a lot of new promotional merchandise on the brochure, such as a sofa bed and glass chandelier. People ordered from him, and he stared at the factory delivery on

time. All goes well. But this is just the beginning and tentative stage. At this time of the IKEA company only one person ... him ... although his family were all his helpers.

Gradually the company's business is on track. However, the competition of mail-order industry is increasingly fierce. Vicious price competition with each other IKEA for a new life is very negative, how can customers trust in our products? Ingvar came up with a good way: holding long-term exhibition and sale of furniture, let people see IKEA furniture. The company bought a building, the furniture were placed in the two-storey level, at the same time, a little cheaper and a little of your products together with a view to different customers on the quality of their price comparison. Sure enough, most customers were expected as the company wisely chose the more expensive kind of commodity.

This approach combined order and furniture shopping malls is the first IKEA. It succeeded. In 1958, the first IKEA opened shopping centers in Sweden, Ingvar born at Emlhult, a small town in southern Sweden. It was Scandinavia's largest furniture showcase sites. IKEA soon followed by the development of Norway, Denmark and Switzerland; in 1974, IKEA has opened up the world's largest market - Germany; and then into Canada, the Netherlands; the success of 1987 and 1985 to enter the United Kingdom and the United States, and develop into IKEA Group II, three major markets.

2.2 Background Introduction of IKEA(China)

In 1998, the IKEA in China's first retail store was opened in Beijing. But in this decade, the development of IKEA in China is a fairly slow pace, at present, only Beijing, Shanghai, Guangzhou, Chengdu, four stores, which China and the entire Asian market, in the IKEA around the world share of sales also too small (for fiscal year 2007 global revenue of 19.8 billion Euros, and the whole of Asia including Australia, however the proportion of three percent, but annual sales growth rate as high as 30% -40%, IKEA has become the world's fastest-growing sales region I).

The current strategy of IKEA is eastward expansion, the Asia-Pacific region; especially the rapid growth in China has given a lot of confidence in the management of IKEA. 2015 financial year, the IKEA is expected to set up shopping malls in China to reach the number 25, the total procurement in China, IKEA global procurement volume from the current 30% to 50%.

To provide affordable products that people have been the purpose of the sale of IKEA, and IKEA in the U.S. and European markets is also a low price strategy to capture the market. Through large-scale procurement, to establish their own logistics network, customer demand in the market to reduce the use of the service shop, the use of flat packing furniture to save transportation costs and so on, to succeed in their product prices fell less than similar products, the low - IKEA price strategy so that the market

in Europe and the United States made the absolute superiority. In China, apparently not so easy to take cheap, IKEA has just entered China, a considerable number of products in foreign production, transportation and warehousing costs and higher import tariffs, only four decades the number of stores can not scale advantage, resulting in higher costs of logistics and management, resulting in a lack of price competitive advantage. As a result, the IKEA products in the Chinese market is often difficult to be received by ordinary consumers, it will become elementary class status symbol to flaunt.

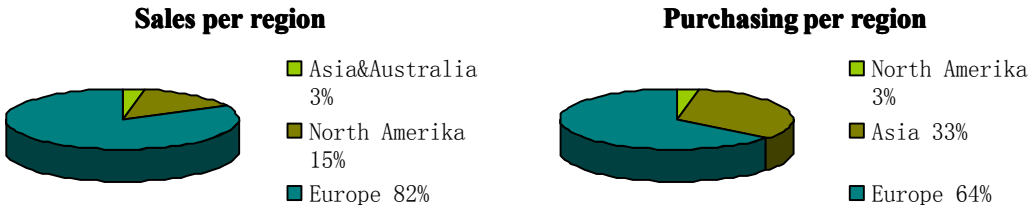


Figure 2.1 IKEA Group Sales & Procurement data (as of fiscal year 2007)

How do? Lower prices? But price is not simple, often behind a strategy means, then how to price? Is there any room for price cuts? What price? On the one hand, increase in the number of stores to reach economies of scale in order to give full play to the logistics, supply chain to reduce the effects of cost, on the other hand, increase local procurement in China amounted to price cuts to take the initiative, together with the Progressive years, China's import tariffs dropped substantially for the product price possible precondition for the most critical or through the implementation of efficient supply chain system is to achieve long-term low-cost effective method.

2.3 The strategic position of IKEA (China) in the Asia Pacific region

According to the report, China will become the second largest consumer market only after the United States in 2014, whose share of world gross domestic product 3.8% consumption. China's total consumption of household products market will reach 3.7 trillion U.S. dollars in the next 8 years, accounting for the total world consumption of 11%. Under the current pace of development in China, China's consumption of home appliances will soon be more than Italy and France, more than Japan in 2014.Although overall sales for IKEA, IKEA (China) can occupy a considerable proportion of the world take a long period of time, the IKEA Group is still very optimistic about the huge business opportunities in the Chinese market.

IKEA planning by 2015 in the Asia-Pacific region has 72 stores, including in China, set up 25 shopping malls, the establishment of 4-5 regional distribution warehouse, from Shanghai, China, Malaysia and the development of a distribution center in Japan

Australia each have a regional distribution warehouse, as well as a shopping mall covering the entire Asia-Pacific Central Warehouse, that is, Fengxian district in Shanghai to reach the construction area of 80,000 square meters of warehouses. Regional distribution warehouse to serve the countries in the Asia-Pacific retail stores, the most direct delivery of best-selling products in shopping malls in order to reduce the delivery cycle, is a more flexible and efficient market-oriented distribution strategy. The unification of the central distribution warehouses will be used in shopping malls is relatively low turnover rate of products, logistics and distribution as a way of differentiation, to improve the efficiency of the supply chain operation.

2007 IKEA finally opened in Japan's retail stores, to the rapid occupation of the Japanese market, so that time management is the question whether the shortage of ready access to products? We know that increase in storage products can be used to increase the value of this area, that is, storage products closer to customers, delivery time will be shortened or often makes the supply can be anywhere, anytime. Japan is currently responsible for distribution from the shopping center's main distribution area of Songjiang Shanghai warehouse. Shanghai Fengxian is located in the future of a unified central distribution warehouses will be used in shopping malls is relatively low turnover rate of products, including shopping centers in Japan, while Japan will also establish its own regional distribution warehouse, to make our products closer to the retail stores.

IKEA planned by 2015 in the Asia Pacific region, including 72 stores in the Asia Pacific region will be the development of new retail States, including South Korea, Thailand, New Zealand and other countries. At the same time, IKEA is that even if the existing Asia-Pacific countries, the retail business also is far from reaching saturation, there is still much room for development. In the development of the main cities of the first-line, the next step is to develop second and third line cities, on the other hand, the size of the expansion of existing shopping centers. For example, in China, after Beijing, Shanghai, Guangzhou, Chengdu, there are shopping centers in four cities after the full advance, such as IKEA, Shenzhen, Nanjing, Dalian, Wuxi and other second and third line cities, will further expand the coverage, coverage will also further enhance the density. IKEA to see because of the limited retail outlets in the current site a substantial proportion of non-local customers get engaged in the business that is, purchasing large quantities from the field to meet the needs of the retail business in areas not covered by the strong desire of the consumer.

With the IKEA in the Asia Pacific region continued to increase the pace of expansion, China will in the IKEA Group, the strategic layout of the Asia-Pacific region occupied a pivotal position in the next five to ten years, IKEA China will play in the whole group a core role.

Chapter III. Analysis of the operation system and the status quo of IKEA (China)

3.1 IKEA Supply Chain Strategy

IKEA in the world there are 45 trading companies located in 31 countries, there are 1350 suppliers in 50 different countries. IKEA to the core product design departments in Sweden, the annual design of 1000 kinds of different types of household items. Furniture manufacturers are using outsourcing, suppliers are required to produce in accordance with the drawings, whether in China, Poland or Sweden, the manufacturer must be followed to ensure that the design of IKEA and IKEA's quality standards. How to maintain a highly efficient low-cost commercial value chain, behind the same is bound to the operation of a highly efficient supply chain system supply chain IKEA is such a huge and very complex system.

3.1.1 Set price

For their own products can control costs, made the initial pricing, and control of the upstream industry chain (to know, many retailers are stores full of goods from different suppliers to provide brand-name products, they want to control prices often not so easy), IKEA has been insisting all products designed and patented. Its "low price" strategy is also reflected in the "price tag from the beginning of the design of" the unique method of pricing. For many domestic companies, the general design processes is often the product first, and then calculate the target price. But for hope, "to provide the lowest possible price" of IKEA, prices are the first to be taken into account. Senior managers from the global product strategy, composed of the Committee, based on customer spending habits of the monitoring results for the IKEA product development team to develop the direction of the development. Then, in this direction has been communicated to the product manager for IKEA by use of the "price matrix" method, to confirm the market's future competitive product line, that is, the price of new products. When determining the price, the IKEA global search for suitable manufacturers. After the completion of the process before the design stage into the real - IKEA use of in-house designers to select a competitive basis, in order to find the final product design. All more than 100 designers in the design of new products when the fierce competition, price competition on the same products, "Who designs at lower costs." All the product design is established, ultimately to determine which supplier can ensure the quality and the lowest cost, the production of these products to ensure the realization of low-cost production workshop began.

At the same time, IKEA has also adopted a "modular" design approach (IKEA furniture assembly are split shipment, the product is divided into different modules,

sub-block design. The module can be different in different regions according to the cost of production; At the same time, some furniture in different modules can also be inter-generic), such as: the desktop products of GALANT, Vicat-byske purchase from different countries of Europe, and supporting these different Desktop Table Foot size or material is produced in China. This will not only reduce the cost of design, and the total cost of products can also be reduced.

3.1.2 Sales forecasting

Done in the IKEA sales forecasts are considered an effective supply chain organizations, the foundation have also helped improve the production plan. Sales forecasts were divided into top-down strategy and bottom-up global sales in all retail sales from the State plan, and sales forecasts based on different product groups (Business Area) has been further broken down. These data updated three times a year. Sales plans for each region, from history and the sales and market demand for analysis. Through analysis of past sales, it can be found seasonal changes in the law of specific commodities. Therefore, in quarter sales forecast, it must ignore the past sales is particularly high and particularly low, such as China sales forecast, it is important to determine the true trend, and from random events to try to isolate the real demand for the Golden Week sales change can not be considered to be the month or quarter change in real demand. Sales forecasting is a scientific guide effective production and maintenance of high standard of service, optimize inventory, reduce the overall cost of a prerequisite.

Marketing strategy is usually the next 5 years IKEA sales expected to determine, based on the current market situation and the future development of the global market expectations and expansion plans within IKEA.

Short-term marketing plans for the shopping mall of the day-to-day replenishment shopping malls; Analysis of market demand is enslaved to the short, medium and long-term capacity of the supply chain of the region. And market demand and regional supply chain capacity deviations sometimes occur; the supply chain analysts noted that it should be timely. Sales plans for the management of supply chain performance measurement in the actual production plan for, as well as a product of a place to find the best and most appropriate market. At the same time, the capacity of the existing supply chain by the real-time monitoring, in accordance with the actual market demand, so as soon as possible, be adjusted accordingly. Once the new formulation of the capacity, it needs to find the best procurement market in order to ensure the future of the smooth implementation of the supply chain.

3.1.3 Purchase

A greater degree in order to reduce costs, IKEA increasing procurement efforts in China, in 2001, IKEA's procurement in China accounts for its share of global sourcing for 14%, and by 2007 this figure has reached 22%, replacing IKEA in Poland to

become the most important supplier of finished products. IKEA in China is currently a total of more than 370 suppliers and three of their factories, and gradually gained a price advantage.

IKEA further is for customers to become their partners, by the customers own their own transport and assemble their own products in exchange for lower prices. Follow this line of thinking; IKEA developed its own unique style. In the IKEA shopping center, household items and everything, it all kinds of goods into a model of different styles, the most of each commodity to the scene to show the effect of inspiration and stimulates people to purchase, all to encourage customers to experience their own. "To IKEA to DIY" has gradually become a popular trend in the world.

3.1.4 Logistics

Specific to the logistics operations, reflected in the global logistics center, the IKEA global market is divided into eight regions, all have 28 distribution centers located in 17 countries, including 19 European distribution centers, the United States 5, the sea in Asia, Malaysia has a varied.

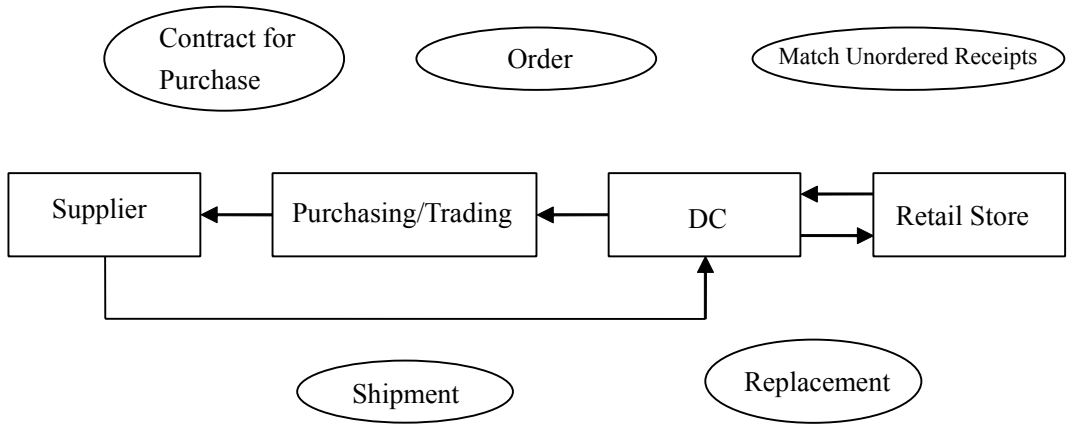


Figure 3.1 Distribution and logistics flow chart

IKEA to nearly 28 distribution centers and warehouses are mostly concentrated in the central air traffic hub, in order to save time. All goods are shipped to warehouses around the world and the central distribution center, IKEA scientific basis, to determine which products in the manufacture and sale of local and which are exported to overseas shops. At the same time, each "IKEA stores," according to their own needs of the trading company to IKEA to buy these products. Therefore, the functioning of the whole supply chain, from each store to provide real-time sales records began, back to the product design, R & D institutions, to trade agencies, OEM manufacturers, logistics companies, storage centers, until the switch back to store, IKEA strict control

over every aspect of logistics to ensure the lowest cost.

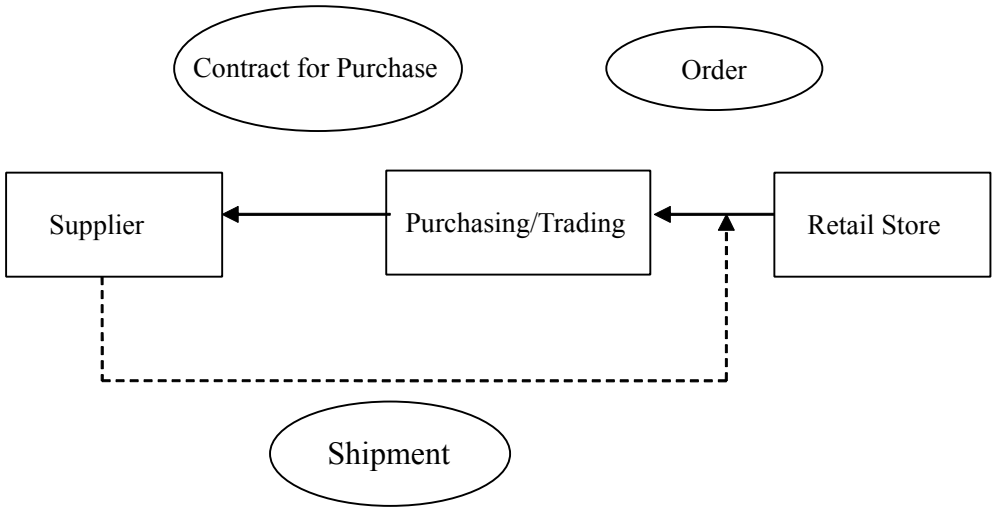


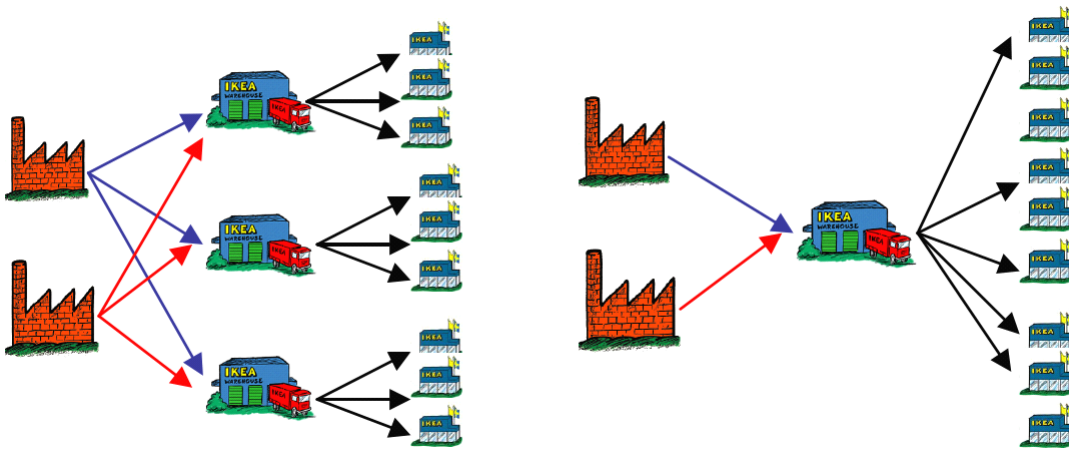
Figure 3.2 Logistics flow chart of the direct delivery model of suppliers

So far in 1956 launched the "flat packed" all the products are customer made parts and components can be easily installed, and thus produce the "removable furniture," the production of the more damaged in transit is less, the lower the freight cost of the conclusions, to avoid unnecessary air transportation to transport to greatly improve the efficiency of transport, but also savings in the cost of assembly, which is of utmost importance to maintain the role of low-cost. To further reduce transportation costs, the company has continued to make an issue of products, including a large number of transport pallets for the cup, or deprived of the air pillow.

3.1.5 High-flow, Low-flow strategy

In order to improve the efficiency of distribution, we can not all products with the same distribution methods, sales of products classified in accordance with is a way to improve efficiency, because we can see that 80% of the sales performance and flow of goods from the only all product line 20% of the products, how to make a distinction between the supply chain in high-volume products (high flow articles) products and low-flow (low flow articles), so that more effective supply chain operation, close to the establishment of a central warehouse and distribution to warehouse sales. Treasury is particularly necessary. Facts have proved that to the store, the shorter the delivery of products to enhance the level of services more effective. IKEA in the Asia-Pacific region is one of the supply chain strategy to re-adjust the structure of the supply chain in China, the establishment of the Asia-Pacific region in the low-flow Central Warehouse (low flow DC), covering the entire Asia-Pacific area malls, each selling in local markets around the country to establish a high-volume distribution warehouse (high flow DC), so that the warehouse is located in Shanghai's Songjiang future shopping centers on the charge of distribution in China cargo Materials, Nagoya, Japan

is responsible for the warehouse sales in shopping centers throughout Japan, also in charge of a warehouse in Kuala Lumpur, Malaysia and Singapore shopping malls, distribution warehouse in Australia is also building the future, responsible for distribution of local high-flow products.(see Figure 3.1)



High volume articles are sent to market DC

Low volume articles are sent to central DC

Figure 3.3

The benefits of the product categories are:

(1) from the shopping malls:

① Were scattered in all the selling to concentrate on the low-flow products stored in a central warehouse for inventory management.

② High volume of products, the entire supply chain is important in 3000-4000 almost around the sale of products in storage, reducing the probability of out of stock, selling goods to raise the standard of service.

③ Successfully launched more new products each quarter

④ According to the nearest convenience store shopping center to guide the sale of goods, more flexible control over service levels

⑤ Make coordination more convenient shopping malls out-of-season clearance of goods, rather than a significant price reduction to clearing.

(2) from a financial point:

① In the warehouse around the 60-70% reduction in each of the low flow of goods stored, it will cause the storage capacity of the region as a whole fell 8-10% and brought 75 million Euros is the construction cost savings.

② Concentration of low-flow of goods after storage significantly reduce logistics costs

③ A substantial reduction in inventory costs

④ Logistics operation in terms of reducing the level of each warehouse work loading and unloading cargo.

⑤ Low-flow will be focused on the procurement of goods to the central warehouse, more conducive to the development of suppliers, and bargaining with the space

But the risk is obvious:

① Most IKEA products will be stored in a centralized location, the risk is very high
② Distinction between product line itself is a complex project.
③ Two areas in a distribution structure, from the operational level in terms of very complex
④ The lack of a complete system to support
⑤ May result in excess inventory
⑥ Containers loaded with the rate will be reduced
⑦ States import and export and transport of local unpredictability of policy changes, thereby affecting the efficiency of distribution

3.2 Supply Chain Organization

3.2.1 Purchasing Department / suppliers

IKEA products are from suppliers around the world by production, and by the duly authorized to carry out the exclusive distributor retailer IKEA. IKEA logistics services through an integrated system (that is, in order to reduce freight and operating costs), to procurement from suppliers of IKEA products are optimized distribution. IKEA 31 countries in 45 trade Service Company, with distribution in 50 countries and regions, 1,350 IKEA suppliers' home business contacts.

IKEA's purchasing department and suppliers to maintain real-time contact to ensure that production capacity, price and quality; tracking of orders from the reach of the whole process of delivery; at the same time, the development of new suppliers, and communication with headquarters.

IKEA has been seeking to work with suppliers to establish long-term strategic partnership of cooperation. IKEA suppliers in the global development of a more unique is the principle of market access in the region are often more difficult to find suppliers of low-cost production, due to the failure of many colleagues as competitors are willing to take risks to try IKEA. Of course, IKEA's internal procurement staff have been inculcated with the idea, try to choose low-cost manufacturing countries, local procurement of raw materials may be no need to import, in addition to the cost of production and distribution there are no other additional costs, and so on.

3.2.2 Distribution Center

IKEA logistics service center on the three basic requirements: First, to ensure that the region covered by the furniture store has adequate volume, and the other is to ensure that companies continue to expand IKEA development needs, the three to ensure the efficiency of logistics and the lowest cost of operation.

Distribution center is divided into two parts by function, in part, DC (Distribution Center), is mainly responsible for sales of goods distribution, and is part of CDC (Customer Distribution Center), is in line with online sales, direct-to-door delivery services to customers of the distribution center. IKEA currently in 16 countries have 31 distribution centers and 11 customer distribution center.

IKEA has not been set up in China CDC, only DC logistics distribution center, located in Shanghai's Songjiang district occupies an area of 1 400 acres, storage capacity of 200,000 cubic meters, including both bonded and non-bonded in the reservoir area to replace the Malaysian the central warehouse, IKEA Asia-Pacific region is the largest logistics distribution center, is mainly responsible for the Asia-Pacific region including China's domestic supply of retail shopping malls.

IKEA in Shanghai before the distribution center of its own, Malaysia's central warehouse IKEA Asia-Pacific region was the only of its own distribution center. Malaysia is a DC about 110,000 cubic meters storage capacity at the Port Free Trade Zone, Kuala Lumpur, and the distribution warehouse. Founded in 1999, was conducted by a third party management of Maersk Logistics, by the end of 2003 in order to further improve service quality, and speed up the delivery time to the store, the management will consider the operation of the warehouse taken over by the hands from Maersk, which took over the process was finally completed in the summer of 2004. Malaysia is now DC is a shelf area of low (conventional) and high-shelf areas (high bay Silo), composed of a maximum capacity of 118,000 pallet distribution warehouse, still in the Asia-Pacific region for 17 malls goods.

In the absence of the establishment of China's distribution center, all products shipped to China shopping mall must be shipped to Malaysia, China's retail stores for such a cost in terms of higher, especially for larger furniture such goods, the freight in the entire cost of 30 percent to reach a direct impact on final pricing. As the Asian market, especially China's market share expanding IKEA is the increasing number of products or order products on the part of the production of the Asian region, which will greatly reduce the cost of freight on the impact of the implementation of the retail IKEA choice of plan choice on the part of shopping centers, including China products from Chinese suppliers of production, and then to malls. This scheme has proved very successful.

IKEA currently Fengxian District in Shanghai in the construction of a larger distribution center logistics, covering 580 acres, storage capacity of more than 300,000 cubic meters, not only the Asia Pacific region will be IKEA's largest logistics hub, but will also To date, China's largest foreign warehouses. This layout will further reduce the cost of China. At the same time to establish the strategic position of the logistics DC in Fengxian to be the low-flow central warehouse for the future of the Asia-Pacific region.

IKEA has been established as a logistics warehouse in Shanghai Center, the Asia-Pacific region for the IKEA business unified procurement, storage, and distribution sales to the Asia-Pacific region, the Group's companies.

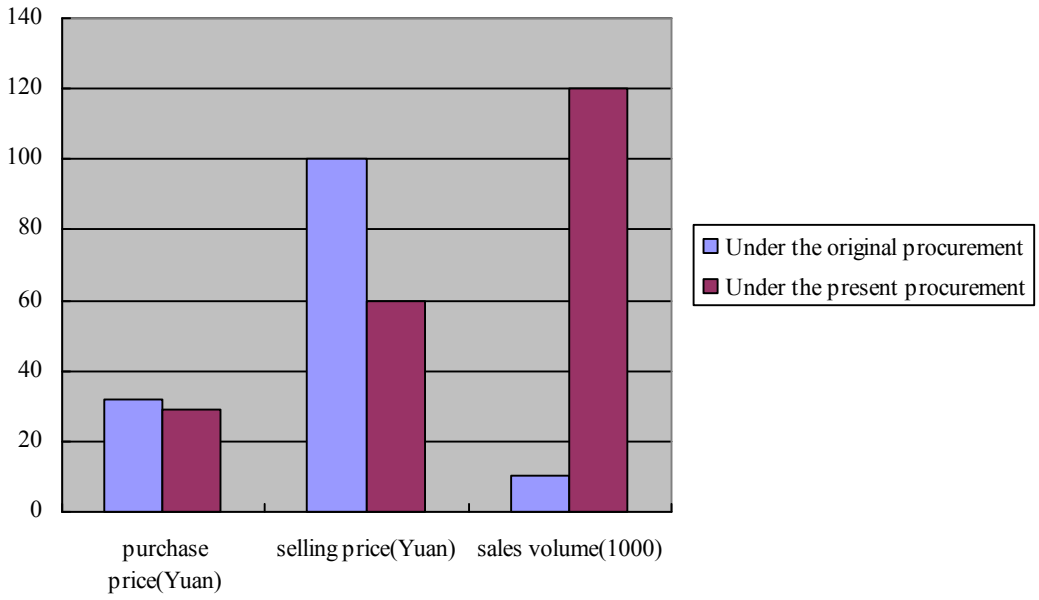


Figure 3.4 Changes in procurement methods brought about by changes in other indicators

3.2.3 Central Warehouse

As mentioned above, the central warehouse stores throughout the region covered by sales, the future of Shanghai's central warehouse in Fengxian district is responsible for a region-wide low-flow of goods distribution center.

3.2.4 Transport

IKEA as a result of the creation of the famous "flat packing", from the logistics point of view, not only can be achieved in the process of commodity storage and transport container unit, and reduced transportation costs, and field operations in the logistics center is also greatly enhanced loading and unloading efficiency, but also made it possible to automate storage.

IKEA adopt container transport both in the global procurement and sales process. In the process of loading and unloading containers, if the use of tray operation, each time loading and unloading containers need only 30-40 minutes; do not use trays, then, it would take 3-4 hours, the use of pallets is no doubt greatly reduces the cost of integrated logistics. The use of pallet logistics center is the basis for highly efficient operation. In fact the use of a logistics center is also very multi-tray specification,

management is also very detailed.

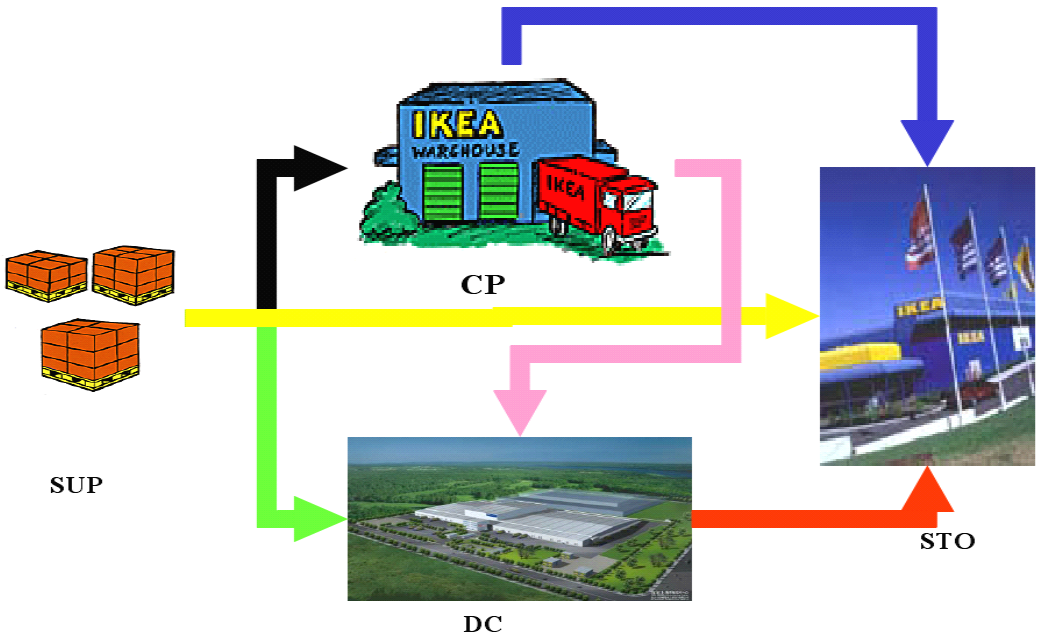


Figure 3.5 Transport Strategy

IKEA flat-panel based on the transport of bulk goods characteristics, IKEA is usually the most common transport network, the main mode of transport are as follows: 60% highway, 20% rail, 20% of shipping, "1% of air (at least used because of its expensive usually more than IKEA value of the goods themselves).

IKEA in China, the procurement of goods, if directly in China and Asia-Pacific sales, then IKEA suppliers of goods will be delivered directly to large from the nearest IKEA store or distribution center that is IKEA distribution center in Shanghai; if these goods for sale in Europe or North America, then the goods will be transported to a local distribution center the most suitable, and then delivered to the IKEA shopping center.

Typically, the structure of transportation rates (in particular the rate of cut-off point) may affect the use of storage facilities. If more sources of supply of goods, the establishment of a concentration of goods (such as warehouse or freight station) method may be more economical, this can be scattered into a larger bulk cargo transport unit, reducing overall transportation costs. IKEA set of goods used in the method of hard-point is a typical example.

Transported to Europe or North America, from suppliers of goods are usually shipped directly (in the IKEA-house to become DD, direct delivery), and DD providers of transport is divided into two modes, one is filled with a whole container shipments directly (the true sense of the DD), there is a delivery of goods to the point set together (CP, consolidation point), and other suppliers of goods to send a unified, that is, will

come from different suppliers into larger cargo sporadic bulk transport units.

IKEA in China there are eight hard points, the transport set, which are located in Harbin, Dalian, Tianjin, Qingdao, Shanghai, Xiamen, Shekou, and Taipei. Because suppliers of goods less hair, small enough container filled with a whole cabinet, the use of set points, a good fight is to save transportation costs and improve turnaround time of goods. IKEA in China set to fight at the 19,000 containers a year to deal with the transport, delivery of goods in China accounted for the entire 19 percent of total procurement, at the same time, including exports and domestic transport.

3.2.5 Retail Shopping Center

Retail shopping centers are also part of the supply chain, supply chain relies on other parts. It requires high standards of quality products, low purchase price, the planning accuracy, cost-effective and reliable distribution services.

IKEA stores and distribution within the service sector has also signed a service agreement, the agreement provides for distribution of service delivery cycle, the container loaded with the rate of the volume of orders in the most economical, transportation arrangements, as well as the quality of cargo requirements, and so on.
Shopping malls under the orders or to the distribution center or directly to the supplier, are in advance in the system have been set. The volume of orders delivery depends on the cycle (including production and transportation cycle), a certain time frame, as well as the sale of security within the store inventory. To pre-order, shopping centers should have sufficient inventory. At the same time, the implementation of the orders in as little as possible to meet the needs of the middle part of the principle of operation, that is, from production to sales sites to avoid unnecessary intermediate links in order to reduce costs.

Typically, the retail aspect of the level of customer service impact on sales, product management in the level of service refers to the availability of goods. Wal-Mart's senior management who once said: "Unless you are a time when consumers need the provision of goods, otherwise you have nothing to sell." Obviously the higher the level of service shops, customer satisfaction with more high, but this time needed more inventory investment.

Manufacturers of finished products warehouse in a shortage at the same time does not mean that the retailers out of stock, for which, it must be clear out of stock of the ultimate customers of the response mode. When a product out of stock, customers may purchase the same brands of products with different specifications and may buy another brand of similar products, or simply look for a shop. Homogenization of the products tends to become increasingly clear today, customers of "non-it does not buy" the phenomenon has become less and less. So retailers have to pay attention to the order cycle, in particular, to meet the rate of supply, transportation, etc., try to avoid the

phenomenon of the retail aspect of the occurrence of out of stock.

In order to reduce the out-of-stock rate of IKEA products in the market all the products sold are divided into four kinds of service levels (service level). S1, which is the best-selling products, the requirements in its retail stores will continue to goods, is the core product line variety, to ensure that 99% of the level of service; S2, in addition to S1 other than selling products, to ensure that 95% the level of service; S3, the remaining list of products, 90 percent in order to maintain service levels. In the fourth grade and S4, the impact of out-of-stock can be neglected. IKEA shopping centers all around the world implement the same standards of service.

Grade of service level	Grade 1	Grade 2	Grade 3	Grade 4
Standard of service level	99%	95%	90%	Not calculated

Table 3.1 Standards of IKEA service level

For important products, IKEA to determine the level of service than other commodities; and for some secondary products, then do not consider whether out-of-stock. The level of different services has different levels of security goods inventories, this shopping center to maximize the funds were used to ensure the supply of key commodities.

When the goods arrive in the goods shopping mall, the mall is not as simple as unloading, delivery of goods to the shopping malls to the different regions, including the value of the district, customer self-reference zone warehouse shopping centers, and other special areas (food stores and restaurants in Sweden) At the same time every day in the market shut down and prior to the opening price to do the work of replenishment.

3.3 IKEA China Supply Chain Process

IKEA China's supply chain process is divided into two parts: the promotion process and driving the process. The planning departments of the headquarters in Sweden (IKEA of Sweden, IoS) stores throughout the year on sales is expected to start to promote the reaction process, and store sales for the week to start pulling process. Driven processes in the implementation process, the demand is known, identified, and in promoting the process of the implementation process, the demand is unknown, it is necessary to predict.

Promote the process may be regarded as speculative process. According to the IoS area expected annual sales of existing products in the system parameters in accordance with good set of orders issued, there are various procurement offices to confirm the whereabouts of the supplier and the implementation of orders.

Shopping Center for their weekly sales are expected to be more accurate, and can be construed as a response to customer demand, reactive process. According to their own safety stock and decide the number of orders.

Although the stores and distribution centers have a relationship of interdependence, but there is always among conflicting objectives. Warehouse distribution center in order to ensure efficient internal operations, I hope the shopping center took orders from its warehouse of goods throughout the tray, tray not wish to purchase zero-down, in spite of certain commodities in the system as a result of collection of packaging can be ordered to allow decentralized; and shopping malls in response to customer demand and to respond flexibly to changes in demand, often do not wish to purchase the whole of the goods entrusted to so many.

Distribution Center will regularly supply chain planning to the region to provide a warehouse of surplus goods entrusted to the non-integer (no pick list), request to intervene in the system through the shopping mall the next order to eliminate it. However, supply chain planning staff will make a judge, when a commodity rather than selling goods, purchase of goods entrusted to spend the entire shopping center to a long time to eliminate the inventory, they will not be mandatory in the system to do this kind of intervention.

3.4 Supply chain control system

3.4.1 Purchasing Control

IKEA in the supply chain of a strong dominant position, it purchases the economies of scale, increase its supplier negotiations and the ability to keep the prices down to ensure that its low-cost procurement. IKEA this year continued to increase procurement in China, and local suppliers in order to encourage more orders, often fierce price competition. While at the same time IKEA suppliers and examination of the strictly controlled to ensure that the supply of high efficiency and high quality.

IKEA for it in order to create an effective supply chain, from procurement of the source on the right to carry out the following principles:

1) Focus on functional products (to avoid over-mechanized)
2) Use of the most abundant supply, the most economical materials
3) Continue to explore new production techniques
4) Choose the most beneficial procurement market
5) The highly competitive bidding process
6) The selection of suppliers can focus on their production rather than its mode of production
7) The pursuit of a large number of production (economies of scale)
8) Optimization of continuous innovation and the conditions of production capacity in

order to increase productivity
9) The maximum utilization of raw materials
10) Near the base of raw materials to invest in production facilities in special
11) Flat-panel transport in order to reduce logistics costs
12) To ensure that the retail stores and factories in the information transmission between the fast and efficient, so that suppliers can produce according to plan, avoid shopping malls selling products out of stock rate
13) Continued to streamline operations in all aspects of business processes

In supplier selection, the IKEA those inclined to grant orders for the whole measure of the manufacturers with lower prices - IKEA product selection for the supplier when considering the overall lowest total cost. Computing products that arrive in the central warehouse or distribution center costs as a benchmark, and then according to each sales region, sales to select potential suppliers, taking into account the quality of its products, other factors such as production capacity.

IKEA and work closely with suppliers in two aspects: First, in the product design process, the design team and work closely with suppliers, there may even be cheaper to find alternative materials to reduce costs more easily shape, size, etc. Second, in the production process, the IKEA supplier commit to a certain number of orders, so manufacturers are willing to invest in the necessary equipment. IKEA on the run, it will also save the investment.

At the same time, IKEA and the supplier have a certain amount of constraint relations. IKEA and the supplier signed a long-term exclusive distribution contracts, and provide them with technical advice and equipment rental in order to control suppliers, the realization of low-cost outsourcing. And unique patented product designed to control the supply of IKEA's another magic weapon.

3.4.2 Inventory Management

As operators and hope that their rapid turnover of stock to avoid a backlog, and only keep the real situation in order to inventory for future management decisions. To maintain a healthy stock structure, need to consider the following points:

1) Overstock refers to the order, taking into account the lead time and safety stock needs extra storage after the company stock. IKEA will be the week over 15 weeks is defined as the sale of excess inventory stocks. At the same time, also provides that each shopping center the ratio of excess inventory over the same period should not exceed 20% of inventory. It is clear not only taking up the excess inventory of funds and space for a short period of time can not sales, so the lower the ratio, the healthier the stock structure. Led to a surplus of inventory are many reasons, such as sales forecasts too optimistic, or obtained as a result of IKEA suppliers commitment to rapidly increase the production capacity, which led to increase the proportion of sales

is not the same, such as ordering errors.

2) Concrete stock to continue for some time means that there is no inventory for sale. IKEA will not sell for four weeks of inventory stock is defined as death, and death should not exceed the ratio of inventory stocks in the same period of 6%. The lower the ratio is the same. It should be noted that some people often confuse the excess inventory and dead stock. In fact, very simple, only one is still selling too much inventory, the other is not selling. In general a surplus of inventory over time will gradually solve the inventory for the dead if we do not take certain measures will not change.

3) Outgoing for household goods retailers will have an annual sale of new goods, while goods will be eliminated old. Old goods is not necessarily a bad product sales, but in order to be able to continue to new shopping centers, continue to have rich and fresh products to attract customers, IKEA each year over the next quarter and make great efforts to clear the goods. If you take up a lot of merchandise out of the display area and inventory space, it is bound to affect the sales of new products and display. IKEA for each shopping mall in the new financial year beginning quarter of the entire shopping center had the type of goods should not be more than 50.

Thus, the use of distribution centers managing inventory is to make it a lock, and continuously to adjust the water level inside the gate, even if the operation of the operation of capital to maintain a good level, but also is used to store expensive products on display, rather than to inventory. While retailers can obtain from the vendor account period, and the free use of inventory, but if the product can be transferred free of charge several times, then the greater the profit; retailers can completely be sold by ordering, inventory and working capital increased, so did the purpose of distribution centers can be fully realized. Otherwise, the distribution center will be an additional inventory of the region, but will increase the burden on enterprises. This logistics center will be like a double-edged sword, it can be more efficient, reduce costs, and errors can also be enlarged in multiples of the same, the additional cost and affect sales.

IKEA around the world transport hub and the central warehouse distribution centers to provide a sufficient safety stock, in order to provide a strong marketing protection. Improved supply chain efficiency and responsiveness. At the same time reducing the overall deployment cost, out-of-stock costs.

IKEA has been created as a result of the famous "flat packing", from the logistics point of view, not only can be achieved in the process of storage and transportation of goods assembled in modules, and increased the rate of loaded containers (usually the full rate of 75%), thereby reducing the transportation costs, and field operations in the logistics center is also greatly enhanced the working efficiency, but also made it possible to automate storage.

IKEA is widely used in container transportation in the global procurement and sales process. In the process of loading and unloading containers, if the use of tray operation, each time loading and unloading containers need only 30-40 minutes; do not use trays, then, it would take 3-4 hours, the use of pallets is no doubt greatly reduces the cost of integrated logistics. The use of pallet logistics center is the basis for highly efficient operation. In fact the use of distribution centers is also very multi-tray specification, management is also very detailed.

IKEA as a result of all the goods and are based on the way pallet handling, the European standard system tray of 10 different specifications according to different specifications of goods, you can select the appropriate size of the tray. IKEA storage rack frame of the structure and size of the tray in accordance with the different design specifications. In addition to the European standard system of 10 kinds of specifications, the IKEA is also planning its own pallet standards it is based on standard pallets in Europe, combined with the development of IKEA's own circumstances, and in size there are some fine-tuning. IKEA warehouse in the majority of goods are on the European standard tray and the tray on the IKEA standards. IKEA warehouse management of pallets is with strict quality requirements. IKEA warehouse in every pallet of goods, whether it is the European standard tray or the tray or the European super-special IKEA pallet load of goods, only the use of forklift trucks to enter the container or board to carry out loading and unloading cargo.

Songjiang Shanghai distribution center, 100,000 square meters of which is used in automated warehouses, and the remaining 200,000 square meters of ordinary warehouse shelves. Distribution center to deal with every day more than 1000 orders a day, there will be about 60 trucks, starting from the distribution center by road or sea transport mode of delivery to the Asia-Pacific region in various shopping malls.
Automated distribution center of a three-dimensional database has the shelves 30 meters high, with 12 stacker, 24 roadway, and storage of goods with 8000-9000 species. Three-dimensional database of the automated operation, no one from the stacking machine according to the system automatically orders the goods to the designated library storage spaces. In fact due to the stability of crane operation, basic maintenance does not require special duty officers are only responsible for resolving incidents.

IKEA's logistics center in the commodity turnover rate is a very important indicator. Warehouse management system scheduling and on-site indicators in accordance with reasonable arrangements for the goods storage area and the line in order to minimize the distance from transport and improve efficiency and reduce costs. Speed flow of goods to be classified as an index, flow rate of less than eight weeks, as close as possible out of the reservoir area, flow rate of 8-16 weeks followed by the goods, commodities stored in the DC maximum time limit of two years. The whole center can be stored about 60,000 pallets a year, are 4-5 times turnover.

The logistics center is located in Songjiang 60 purchase with doors, 60 shipping doors. Purchase through the distinction between the door and the door is shipped in order to further reduce the total distance of the carriage of goods, improve the efficiency of the overall operation of the warehouse.

Logistics center is also very high storage efficiency. Under normal circumstances, each stacker access from a cargo storage time up to 2 minutes, and the shortest only 10 seconds. Here also there is a reasonable allocation of the natural process reflecting the high efficiency.

Logistics center is a one side of the loading and unloading by one unit, equipped with a complete closure of the loading door, awning, sliding door. Container trucks can interface with the smooth, you can enter the container forklift operation will be unloading cargo containers to the Buffer, and then piled high by the battery forklift unloading containers from the cargo, in accordance with the cargo space behind the information distributed to more than 10 meters high shelves.

3.4.3 Selection of logistics portfolio

According to real-time retail sales record store and decided to logistics flows. Is a direct supplier of the supplier or the distribution center after the implementation of the allocation of blending, or to the central warehouse for transit after blending? This series of highly efficient, agile, low-cost supply chain management has become the core of IKEA.

IKEA shopping center on the case of China, more than half of the goods flow from suppliers directly to the shopping mall is more than that of DD shipment, while the remaining cargo from warehouses in Malaysia and Shanghai Songjiang supply warehouse at the same time. (Flowchart sees Figure 3.6)

LCL cargo needs to send to the distribution center, so more effective. Without a distribution center from directly from suppliers of goods to the shopping mall is a large quantity of those orders, sales in shopping malls, and fast flow of goods, the supply of sufficient inventory to ship FCL. Usually only have large orders, and the quality of stable, short production cycle suppliers, direct delivery to the shopping malls. Availability, which means suppliers are from the regional supply chain planner in the system pre-set parameters, shopping malls under the orders, the system automatically pre-configured in accordance with the implementation of, and supply chain planning staff will also keep track of orders to observe the implementation of the situation, and sale of shopping centers and make the necessary changes in time.

Supply chain suppliers to adopt the benefits of direct delivery are fast response time, response to changes in sales more quickly. Shopping malls can be a day under the

orders to suppliers, the delivery cycle is reduced to 1.5-3 weeks, and shopping malls can be retained within the reserve more inventory, supply chain IKEA sector measured continuously in the background of the optimal replenishment shopping malls, Availability way.

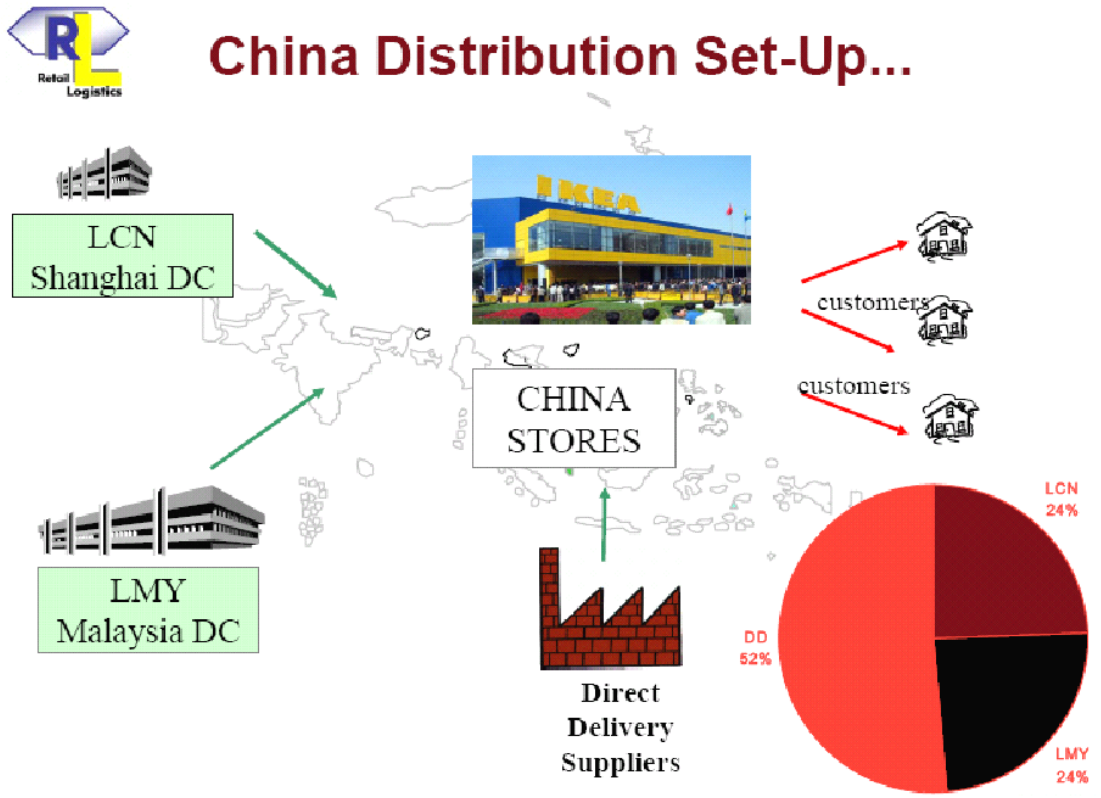


Figure 3.6

At the same time, 80% of Chinese suppliers to send goods straight (DD shipment) or sent to overseas shopping malls DC (the latter is less because of this consideration of the order cycle), 20% of the DD go through set-point (CP) delivered to the foreign because the volume of suppliers of goods is not big enough.

3.4.4 Supply Chain System

IKEA has a comprehensive and complex internal supply chain management system, including the basis of the data, transportation management systems, order management systems, customs systems, financial systems, purchasing systems, supplier management systems and warehouse management systems.

1) The retail order system

Orders from the beginning, shopping malls the basis of weekly sales, forecast future

sales and shopping malls combined with the current inventory, orders issued in the system. When the actual sales better than forecast, the personnel responsible for orders plan projections will be revised accordingly. Shopping centers in the system pre-orders for the supply of a good way, or sent directly to the local logistics distribution center, or sent to the procurement system of the orders directly to suppliers under the one (if this order parameter is the selection of suppliers direct way to send the case). At the same time, all supply chain planning area will also observe the real-time tracking of orders, the implementation of the state, etc., when found in a shopping mall in order to meet the season to snatch the inventory distribution centers, the program can also interfere with the implementation of a moratorium on the implementation of orders.

2) Warehouse Management System

When the flow of orders for distribution center, distribution center also has a comprehensive coordinated with the computer system, it is the core of the operation of distribution centers. The system is IKEA and software suppliers with the development of "tailored" to a large extent the system is adapted to the characteristics of IKEA.

First of all, automatic ordering system. When the shop orders to be confirmed, the system will pass the information to data warehouse management systems, warehouse control system computer will automatically pick up order fulfillment operations, the entire ordering process does not require human intervention.

Followed by the replenishment information from the supplier when the transport vehicle arrived at the former warehouse, the warehouse receipt of the ERP system will notify the corresponding, of course, first of all, the information input by the supplier, through the procurement system, transportation management system, such as transmission to the ERP system, the information including waybill number, container number / license plate number, order number, name of goods, the supplier name and number delivery. When the vehicle arrived at the warehouse, staff will conduct an inventory of goods, and registered in the system accurately the situation of the goods actually received, so that the warehouse management system (ASTRO) will result in a tray as a unit of the memory cell, each memory cell will contain the following information: name of goods, the supplier name, the production cycle, the number of pallets, pallet weight, waybill number, order number, tray, etc.. One tray has its date of receipt of goods, warehouse receipt and the order code of the tray can be used to determine its date of receipt of goods.

Finished goods inventory and systems to be registered, the system will automatically arranged in accordance with the logic of the corresponding digital repository and the system tray bar code through digital scanning and database to verify the confirmation code to ensure consistent systems and in-kind, once the goods have been put the corresponding bit of the Treasury, the system will automatically create a tray and place the link library, so just know that its tray can be found on the tray.

IKEA's warehouse management system (ASTRO) function is a very sound and stable operation, the world's IKEA stores are in the use of the system. The operation of the warehouse system is highly dependent on, if a problem in the system, it will paralyze the entire warehouse management.

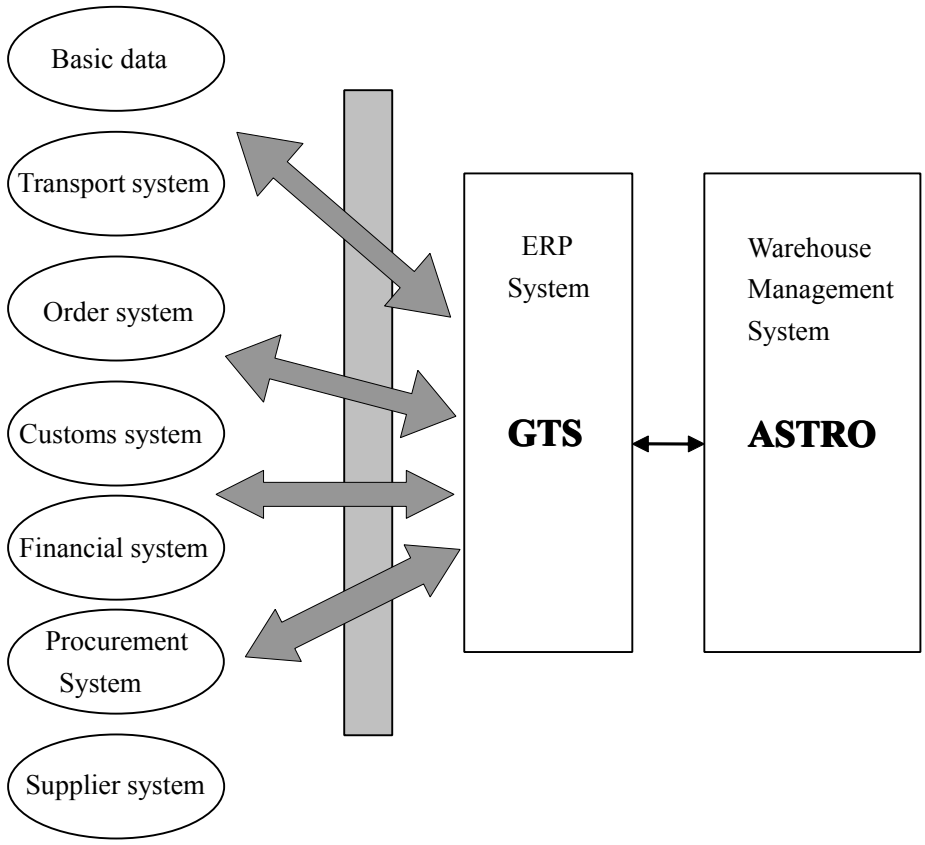


Figure 3.7 IKEA System Environments

For shipping, shopping malls in the system of orders received, plans will also arrange for the shipment of vehicles, the system in accordance with the principle of giving priority to efficiency-bit units by the pallet picking tasks, forklift drivers will be in accordance with its mandate to show the interface picking tray, the corresponding code will be validated to ensure that drivers get the correct tray.

In addition, there is a perfect storage warehouse operation a safety management system. System errors in the operating process, the corresponding warning issued. For example, pallets are not placed on the bit or not, the system will be shown a red warning light or beep sound alerts. It is in order to ensure accurate and efficient operation of the site.

IKEA warehouse management system is another important role in good management of the inventory area. System will be a storage location for each of ID, which facilitate

the rapid and accurate through the computer to find the specified location, in order to ensure proper flow rate, the system will remain conscious of the space of 15%. And the system will be based on a different partition number of goods inventory management, due to the nature of the goods, as well as the needs of different customers, the system will be in accordance with the relevant information and data system algorithm, to distinguish between the priorities of the goods out of the Treasury, through the most suitable system configuration storage location, thus ensuring the warehouse is a high level of stock ownership, but also take into account the speed of a faster turnover.

IKEA warehouse loading and unloading of the scene is the control center through the warehouse control. Each forklift is equipped with on-board terminals, warehousing operations, they need to read the rack number and bar code information to check the goods; ship, the same check to reverse the corresponding information, can be shipped. And the system will also be able to manage the process of loading and unloading forklift functions. Load through the system to control vehicle weight, but also can adjust the focus of loading the goods in order to ensure the safety of operations.

Warehousing operations in the role of control center is very important, system-related information in accordance with the report that the truck ahead of time to enter the warehouse, dispatch center can be calculated in advance by the truck load of goods for goods needed and the exact location of the median and on-site operation of the region, issued at the scene ahead of the operating instructions and vehicle scheduling information at the scene, the whole process is automated through the procedure, the corresponding command will be sent to the forklift trucks and truck terminal on the data in the system control center with a simple to distinguish between the various figures of the state of warehousing operations. For example: "02" that the truck has not yet arrived at the warehouse door; "20", said the truck arrived at the warehouse at the door; "30", said the start of loading; "70" that the goods have been loaded, and vehicles out of the Treasury. A process in the arrangements, the system will immediately enter the next course of preparation.

In fact, the warehouse management system from time to time there were some failures, which have corresponding countermeasures IKEA, for example, IKEA's computer system data is backed up at any time in order to ensure data security.

3) Other related systems

In addition, the transport sector also provides storage system used to transport companies or shipping companies to transport vehicles or containers reservations of space. When the transports file back from the shipping company, followed by transport planners to update the system to facilitate acceptance of the shopping mall to be accurate flight information and transport documents.

There is also related customs clearance information system, used to produce the customs declaration documents, such as invoices and so on packing list. When the warehouse has

finished loading, close the door the moment the container, packing information is automatically transmitted to the customs information system, according to the declarations produced at the same time be the recipient of financial invoices generated.

All of these IKEA systems are interrelated and connected.

Chapter IV. IKEA (China) supply chain problems and suggestions for improvement

4.1 IKEA (China) Supply Chain Problems

In order to maintain an efficient low-cost commercial value chain, behind the same is bound to need a highly efficient supply chain system as a support, the supply chain IKEA is such a huge and very complex system. However, the pace of rapid expansion, the original of the supply chain does not highlight problems at the moment on the show, and its impact has been magnified exponentially.

4.1.1 Inaccurate sales forecasts

Mainly because of long lead time for orders, it results in prediction is very difficult and many safety stock. At the same time, uncertainty of many local markets causes the difficulties of prediction, thereby maintaining the IKEA cooperation between the various divisions have a lot of challenging.

Table 4.1 is the summary of three weeks sale and prediction in the first half of this year at IKEA Asia-Pacific region; we can see that prediction and the deviation between the sales values are high rate.

Asia-Pacific region	IKEA stores	Franchise stores	Total
Predicted value	$26,902,761	$13,739,971	$40,642,732
Sales value	$23,803,565	$14,335,692	$38,139,257
D-value	$5,714,283	$3,587,052	$9,301,336
D-value/Predicted value	21.2%	26.1%	22.9%
Sales value/ Predicted value	88.5%	104.3%	93.8%
Predicted value/ Sales value	113.0%	95.8%	106.6%

Table 4.1

4.1.2 The total cost of inventory is too high

IKEA supply chain management is committed to efficient integration and control in a network structure composed of suppliers, manufacturers, vendors and customers.

Therefore is a complex, agile and efficient supply chain, which IKEA has also maintained a deal with its own unique way. At present, supply chain management as an important trend is to reduce inventory as much as possible, and maximize the proportion of in-transit inventory.

But IKEA total inventory levels are very high, because IKEA's purchasing volume and sales too often in order to cope with uncertainty and the expansion of inventory holdings. Because IKEA worried in-transit inventory can not be well positioned to meet the needs of IKEA stores, low inventory will increase the risk of lost sales opportunities, maintain a certain level of inventory to avoid the risk of more trouble out of stock. Therefore, whether in shopping centers, or in distribution centers, central stores all maintain a considerable amount of inventory.

4.1.3 A low degree of information integration

Because of IKEA huge institutions , from product design of the headquarters, to place orders to suppliers, to transportation, to shopping malls orders, warehouse management and so on, the internal has a total of no less than four to five hundred of complex systems, more needless to say the systems run by other supporting departments themselves. System database, which did not integrate well together, go their own ways, without a unified communications platform, resulting in separation of information, inability to concentrate information sharing, the low quality of information transmission is not conducive to the efficient functioning of the supply chain.

4.2 Suggestions for improvement

4.2.1 Stock turnover innovation

The core meaning of Inventory control is to make efforts to ensure the smooth flow of business objects. The significance of inventory control: retail sales of the existence of uncertainty is the root cause of inventory for inventory control can effectively eliminate waste and to deal with the uncertainty of demand; Inventory supply chain management is a balancing mechanism, do inventory control, for the ultimate level of customer service as the center lay the foundation for supply chain management.

IKEA given the low accuracy rate as a result of the sales forecasting and lead to high inventories and high logistics costs, immediately begin to improve is the stock structure, while reducing inventory costs. And I think to resolve a variety of ways, which is, using a variety of logistics portfolio.

1) The expansion of suppliers to share shopping centers straight to shorten delivery lead time, reduce uncertainty.

At present, over half of China's shopping malls flow of goods sent directly from the supplier, this ratio can be further expanded. As the goods directly from suppliers, IKEA does not have the corresponding inventory in the distribution centers do not have to maintain the safety stock. Orders sent from the reach to shopping malls, delivery cycle will be very short and easy to control. At the same time, also reduce the damage rate of goods, due to a reduction of intermediate processes, and ultimately a corresponding increase in the level of service malls.

Of course, in the choice of which goods can be sent straight to expand the supplier of the range must be very careful when, stability must be in line with the sales, sales, and can often supply the goods, at the same time the supplier must also be long-term cooperation with IKEA, manufacturing product quality stable and secure in the scope of consideration. It must be the work of the classification of suppliers, with a top 20 or 30 suppliers, and then analyzed. In considering the expansion of the proportion of direct delivery at the same time can be set to fight trans-shipment point play function, so as to achieve direct supplier delivery flexibility strategy function.

Suppliers by expanding the share of direct delivery to the shopping center brought an additional advantage is that the shopping centers to reduce the purchase price down, the reasons for the distribution center is to skip this part of the operation.

Of course, even if the supplier of the quality of the production of stable and secure, and the product itself is also in line with sales of large and stable conditions, we still should be the cost of transportation conditions and take into account, as a result of inappropriate mode of transport caused by high costs, this categories of goods are still not taken into account.

2) VMI management strategy

A long time, the stock in circulation is the co-ordination and circulation of each of their respective departments to manage their own inventory, retailers, wholesalers, suppliers have their own inventory, all supply chain inventory control has its own strategy. Because of their different inventory control strategies, it is inevitable that the distortions arising from the demand, the so-called phenomenon of demand amplification, suppliers to quickly respond to the needs of users, but it led to excessive inventory. In supply chain management environment, all aspects of supply chain activities should be carried out simultaneously, while traditional inventory control methods can not meet this requirement.

VMI (Vendor Managed Inventory) concept of the major suppliers based on actual sales and safety stock needs, on behalf of his clients or replenishment orders, and actual sales is the demand from suppliers based on each customers on the inventory and sales data and statistical estimates, such as from the entire operation is usually a set of

supplier management has to do to deal with the system. VMI to break the traditional pattern of their own inventory management, supply chain integration is an operation mode of decision-making agent, which is to adapt to changing market requirements and is a new representative thinking on inventory management. VMI in order to obtain the lowest cost to both sides as the goal, in the framework agreement on a common stock under the decision-making power of the user agent to the vendor, by suppliers or distributors wholesalers agents to exercise decision-making power of stocks, and through the framework agreement regular monitoring and inventory management have been amended to enable continuous improvement.

Because of this, I think that IKEA can also choose a number of long-term and stable cooperation in carrying out VMI supplier management strategy. Suppliers have their own orders in accordance with the safety of shopping center inventory and sales data. This approach will greatly improve supplier IKEA shopping center on the response time, and the earlier information that the market actually sell, and lower the center due to unnecessary changes in the market, stocks, and further advance the introduction of production market commodities, reducing out-of-stock rate. The adoption of the strategy causes the cost of the two sides been reduced.

For IKEA, the benefits of the implementation of VMI are:

First of all, the suppliers of bulk orders have a clear understanding and ability to control the demand amplification. Shopping centers to provide information make orders for suppliers and full control of decision-making changes in order quantity. Suppliers can reduce the uncertainty of forecasts, and better coordination of production and distribution, to reduce safety stock and the cost of storage and delivery, thereby enhancing the service levels.

Secondly, for the establishment of retail shopping malls IKEA - a strategic alliance supplier provides a good opportunity. For example, you can order the elimination of redundant departments, so that artificial task automation, to products such as tags and design work can look to the efficiency of system-wide re-arrangement, it can be removed from the process control step is not necessary.

Of course, in the implementation of the strategy, mutual trust and information transparency is very important, suppliers and IKEA shopping center must have a good spirit of cooperation in order to maintain a good mutual cooperation. IKEA is not only the supply chain to reduce inventory levels, reduce costs, and access to a high level of service, improve cash flow, and with suppliers to share the changing needs of transparency and a higher degree of customer confidence.

3) Cross-stop distribution strategy

Consider the existing distribution center IKEA traditional mode of operation, that is the basis of

orders and shipments, you can use a stop-off mode of operation (cross-docking), this is a cost-effective (to reduce inventory and control area distribution center, etc.) to improve the operational efficiency of a very effective approach. Many foreign companies, such as the well-known retail giant Wal-Mart frequently used, that is, just unloaded in the cargo warehouse order processing after a short period of time, or within 24 hours immediately transferred to the shipping door to send, and without going through the warehouse shelf . It has two advantages: no inventory and no need to use the operation of a large area (as opposed to the operation of inventory), and thus less cost of delivery. However, the level of its operation, the system (including orders for systems, warehouse management system, and other related systems, etc.) and meet the requirements of suppliers is very high.

In this manner, the process of distribution centers to serve as the regulation of supply and suppliers from outside the order station, and does not retain its own stock or stock with fewer reservations. This can also be referred to as the warehouse direct trans-shipment points. But the question is: Does the strategy of direct transshipment warehouse holds more than a classic strategy of superior stock? Therefore, I have considered this model through the use of a combination of a variety of logistics, distribution over-stop strategy to keep inventory in the warehouse distribution strategy classic, along with the product directly from the supplier to send straight to the store strategy, the logistics operations in order to achieve of flexibility and low cost.

4) High volume, low-flow strategy

IKEA mentioned earlier is currently considering the high-flow, low-flow strategy is the IKEA Group in the Asia-Pacific supply chain strategy of structural adjustment in China, the Asia-Pacific region to establish a central warehouse low-flow (low flow DC), covering shopping centers throughout the Asia-Pacific region, and the establishment in each country close to the local retail market of high-volume distribution warehouse (high flow DC). This adjustment means that the supply chain is more compact, so that the entire region a significant reduction in inventory. Warehouse area of specialization by the (low flow DC) to sales and distribution in accordance with the classification of goods, the lower operating costs, while at the same time close to the retail market through the warehouse (high flow DC) distribution can significantly reduce the malls orders delivery cycles, reduce inventory malls.
So my suggestion is in the overall strategy established under the premise of the analysis of deeper changes in the demand for the entire region, scientifically measured the flow in this region strategy. For example: the level of service is the products S1 has high capacity storage on their own, especially those who spend part of products such as complete sets of kitchen equipment, even if the number up from the low-flow should be classified products. Another example: a country is usually to special order goods for sale only in the country, of course, should be stored in the sale of the country, but when the flow of such goods is less than a certain size parameters, or regional considerations on the low flow DC. Resolve this problem through the above proposal by the direct transfer to solve, that is, low flow DC from shipment of goods to the local high flow

DC and assembled with the goods to the shopping malls. There is also a matter of principle is to ensure that the products low-flow is only a single supplier of production, to improve efficiency.

4.2.2 Improved sales forecasting

IKEA has been troubling for the sales forecasting problem of too large deviations from the prediction method and means of connection, I propose the following improvements:

1) In the past sales

Further in-depth analysis of past sales and found that specific changes of seasonal merchandise. Sales forecast, it is important to determine the real trend and random events to try to be separated from real changes in demand. Therefore, in quarter sales forecast, it must ignore the past sales is particularly high and particularly low data.

2) The collection of economic information in public

Adjustments to the sales trend of the forecast are based on the region's economic development trends. For example, the Annual Report of China's economy as well as national authorities released demographic data and annual sales data, consumer demand reports, which can also be purchased from a consulting firm, where relevant data.

3) Collect customer information

On the one hand, through sales of goods to measure a reflection of our customers, on the other hand, can be directly asked about the situation of customers of the commodity in order to obtain customer information. Understanding what customers want to buy today, they will want to predict what is helpful.

4) The supplier

IKEA has always been committed to the development of long-term, stable supplier cooperation for strategic partnership and the supplier market is an excellent source of information on the global market that they know what products are selling, so the supplier to obtain information on the expected future sales is also a very effective way.

4.2.3 Integration of supply chain system

IKEA need to logistics management, systems management, supplier orders, inventory management, data processing, third-party logistics management, and stores the co-ordination to manage a wide range of systems engineering is not an easy task. The effectiveness of the current supply chain system with the company's investment is linked to a number of retailers in the pre-development system is often not the supply

chain and logistics needs to enter the ERP system, resulting in systematic bias in the selection of the above and the corresponding supply chain and logistics system of the second development, which is very time-consuming and laborious; so if the parties in the supply chain can not have a strong platform for the exchange of operational efficiency will be greatly reduced, the expected return on investment will not be ideal.

So I do not think IKEA in urgent need of system integration in the supply chain to spend a great investment, great efforts will be the integration of their internal business processes, achieve information sharing, especially in transportation, warehousing, information integration, inventory management, order processing, purchasing and other core functions, and ultimately to achieve the production, procurement, inventory, sales, and financial and human resources management, fully integrated, so that logistics, information flow , to maximize the effectiveness of capital flow, the ideal operation of the supply chain into a reality.

At the same time, upstream suppliers and to create synergies, through the upstream suppliers to enter into supply chain management system, IKEA can be achieved within the new online check, electronic ordering, appointment shall end, on-line reconciliation and other functions; through and inventory and sales The combination of data analysis, the system can help achieve the volume of orders, products, inventory and distribution of automatic prompt support.

In addition, supply chain management system should also support the IKEA with suppliers to form strategic partnership. Shared with suppliers through the sale of goods, inventory, billing, promotions and other information, so that IKEA and suppliers to conduct joint marketing, consumer analysis, suppliers, inventory management, quick response to customers, while reducing out-of-stock merchandise and keep the backlog severed shelf situation and help IKEA to increase revenue, more quickly respond to customer needs and realize the scientific management of the external supply chain.
Supply chain management system can also help to establish IKEA supplier relationship management system to enable enterprises to speed from the supply, quality merchandise, credit, etc., the evaluation and selection of the preferred supplier or strategic.

Chapter V. Summarize

In this paper, the use of the transportation supply chain management theory and the rationale for strategy and tactics, including building a logistics network strategy, strategic inventory management, distribution strategies, diversion of strategic commodities and so on, to carry out targeted research, including inventory turnover innovation, supply chain information systems and so on in order to achieve the level of customer service, low prices, fast delivery and a high degree of target customers to make products in China, IKEA furniture and home market more competitive advantage.

Multi-way through the proposed combination of a wide range of logistics services to handle the level and the inventory levels of these two interdependent and mutually contradictory relationship, on the one hand, IKEA China to reduce internal logistics costs (warehousing costs, procurement costs, transportation costs, the cost of out-of-stock losses, etc.), on the other hand so that the upstream suppliers better, lower cost IKEA to meet demand for retail goods.

At the same time, the proposed product design, suppliers, distribution network, retail shopping centers through information technology can create a door-to-door to share the network system. The formation of products, marketing and logistics information sharing, so that was beneficial to IKEA information superiority, and reduce its product development, production and marketing aspects of the risks and logistics, information flow, capital flow to maximize efficiency, the ideal the operation of the supply chain into a reality.

At the same time, the depth and understanding of the limitations of data collection, analysis and comments in the inevitability of the existence of one-sided phenomenon of errors and omissions, the existence of different enterprises in different deep-seated problems, this article only IKEA in the status quo in China the state of supply chain research, hoping to learn from some of the enterprises.

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