

China's Clothing Logistics: Problems and Solutions

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Abstract—In this paper, the specialities and status quo conditions of China's clothing industry and clothing logistics are analyzed; the logistics cost of the clothing industry is higher comparing to the same industry in the developed countries. From the viewpoint of the whole manufacturing logistics chain, all the problems existed in clothing logistics system are discussed. The processes and solutions, including the model of e-pos optimization are developed in this paper. This study demonstrates that China's clothing logistics system exist a lot of problems which leads to a higher cost and a lower efficiency. If all these problems could be resolved through the methods and solutions mentioned in this paper, China's clothing industry will be more concentrated on its core competence and will improve its competitiveness in the near future.

Key Words—Clothing logistics; Production logistics system; Inventory pressure; E-pos optimization

I. INTRODUCTION

Clothing industry in China is in speedy development now.

According to China State Statistical Bureau, scaled clothing enterprises, i.e. enterprises with its annual production value 5 million yuan up, finished output of 17 billion pieces/sets in 2006, which is 11.86% higher than 2005. The whole China clothing industry yielded 51.2 billion pieces/sets in 2006 with a growth rate of 10.54%. From the data of the China Customs Head Office, China's textile and clothing export reached 1.47 trillion U.S. dollars in 2006, which is 25.14% higher than 2005 and took 15.18% of the China total export value.

As clothing industry develops so fast these years in China, Clothing logistics is characterized by its own specialties. Logistics in China now is in a period of turmoil, as we have large-scale, computerized and automated facilities in modern distribution centers, simultaneously, we also have simply man-powered warehouses all over the country. Clothing industry in China is low value-added, e.g. the average export price for a piece of cloth is 2.94 U.S.D. in 2006, with the raw material purchasing accounting for the highest ratio in total cost. In the whole logistics system, all processes, such as planning and developing, designing, raw material purchasing, producing, depositing, transporting, and selling and are highly related. Among them, logistics handling quantity is very huge,

as only 5% of the total cost is used upon manufacturing and the remaining 95% is used for storing, loading and unloading, waiting for processing and transportation. Obviously, this situation will enforce enterprises to invest more in manpower, logistics facilities and cash flow for inventory, thus leads to a high clothing logistics cost. If China's clothing enterprises could take advantage of modern logistics science, they may reduce 50 ~ 60% of nowadays logistics cost. These latent cost saving surely will play a decisive role in the reinforcement of their competitive advantage.

The clothing industry, known as "timeliness", with the characteristics of "fashion" and "seasoning", requires enterprises to take quick response to the demands of customers and rapid introduction of new products as the main strategic target and possess competitive cost and service quality at the same time, so they have to reduce the process time of service (involved product) planning and developing, producing, selling and transporting. Under the globalization environment, in which product life cycle becomes shorter and demand forecast is harder, time-based competition between enterprises is very necessary.

China's clothing logistics is just in the junior stage at present. This means the following two aspects. Firstly, entrepreneur's cognition of the significance of logistics is insufficient in clothing industry. Enterprisers thought highly import of the selling price and the profit they already made, but almost none of them realized they could earn more through cutting down cost by changing the logistics patterns. Secondly, the distribution management of most clothing enterprises is still scattered and out-of-order, thinking that all for a short time, many enterprises form a temporary or hire a fleet of vehicles when they need to deliver goods. Some of them have tried to outsource distribution service to the third-party-logistics (3PL), however, nowadays China's 3PLs are less developed, with no-good management, low-educated staff, and insufficient hardware facilities. Clothing enterprises could hardly find satisfied 3PLs locally.

Concerning logistics outsourcing tactics, only a few factories outsource their logistics demand, many of them choose to operate their own logistics systems by themselves. One-thirds of clothing enterprises build their own logistics facilities, the others major parts are compound patterns, with their own logistics operation system and simultaneously outsourcing transportation and distribution to relent companies. According to the statistics of China Ministry of Commerce, China's clothing logistics cost height amounts to 21.3% averagely in

total cost, while the figure is only 8.6% in the United States. This great gap of logistics cost deference will become a very important profit growth source in China's clothing industry.

II. PROBLEMS OF CHINA'S CLOTHING LOGISTICS

We focus our attention on the problems in clothing logistics in the following four facets:

(1) Purchasing and supplying logistics

In most of China's clothing enterprises, purchasing is an independent department, with seldom co-operation with other departments. Its duty is to purchase enough amounts of corresponding main raw materials and other assist materials on time according to manufacturing plan to ensure smooth production. However, from the viewpoint of an entire supply chain, purchasing should be included and purchasing logistics has an important effect on the operation efficiency on the entire chain. Whereas, independent purchasing often self-regards own departmental benefit, such as material cost, quality and quantity, etc. In this case, purchasing logistics is like an independent process, attaching importance to self's job only, with no link with other logistics processes. This sometimes leads to no co-operation between other processes, thus blocks the entire chain's function, and recedes the efficiency and profitability of clothing enterprises.

Purchasing department, usually controlled by relatives of enterprise owners, are seldom under appropriate management in China's private-owned clothing manufacturers, which takes about 80% of the total industry. Purchasers often go to nearby familiar suppliers to buy raw materials and other assist material when need, and they pay more attention to the cost and relationship other than quality, lead time and service. Although building good relation with suppliers is an effective way to ensure supply, but the shortage of formal purchasing management, often leads to corruption, quality and lead time problems.

(2) Production logistics

In production, discontinuity of material is a common but severe problem, thus block the carrying of materials to the needed workshops and then stop manufacturing and waiting for the needed materials. One reason is the purchasing department's inefficiency and another reason is based on ill co-ordination with outsourcing factories, such as printing and dyeing mills. Since in clothing making, the first step is tailoring, then carry the tailored clothes to the printing and dyeing mills to get them stamped or embroidered. This process needs clothing manufacturers coordinate harmoniously with printing and dyeing mills, otherwise, an ill-planned or delayed production plan of the outsourcing factories will lead to discontinuity of material in clothing manufacturers.

Besides the outside co-operators, i.e. suppliers and outsourcing factories, discontinuity of material also comes from inside facets, like inappropriate production plan of the clothing manufacturers. For example, if production deviate the prescribed plan, it brings trouble to the logistics department. Sometimes, on one hand, when production is faster than the

plan, it gives insufficient time to carry raw materials from warehouse to workshop; on the other hand, when production is slower than the plan, the raw materials already in workshop cannot be consumed and have to be send back to warehouse.

Finally, discontinuity of material has direct impact on delivery time of finished product. Postponing delivery usually means missing order and it is fatal to clothing industry which characterized as "timeliness" and "fashion".

(3) Sales logistics

Inventory level of China's clothing industry is surprisingly high due to poor inventory strategy. The clothing enterprises usually purchasing raw materials and producing in bulk, thus lead to great risks in operation. At the beginning of a new season, 90% of finished clothes which are estimated to sell in this season have already been made and carried to stores. If situation change, such as the weather is not as cold as estimated or the style is not among the season's fashion, then a large part of the clothes which have already been in the stores will be unsalable. Therefore, a large quantity of the season's clothes turn to be overstocked in the stores and wait for markdown selling. The average turnover of China's clothing enterprises is 9.7 times per year according to the China Spinning and Clothing Association. The average lead time for China's clothing enterprises is from three months to half a year. While ZARA, one of the most famous clothing company in the world, has a much shorter lead time. ZARA can take only two days from designing to producing a passel of clothes, with the shortest lead time of twelve days, based on its "rapidity, small quantity and many styles" pattern of operation system.

The distribution system of clothing industry is fragile, with a win-lose relation between manufacturers and distributors. The majority of China's clothing enterprises sell their products through big department store. Even if the conditions set out by department stores are rigorous, manufacturers have to accept, thus increase the price of clothes and diminish the demand. Lack of good cooperation with distributors result in poor sales performance and thus over-stock in the logistics system.

The demand forecast is also a "headache" problem for China's clothing entrepreneurs. They have no information support, no historical statistics, no clear information about their competitors, and no scientific information analysis. What they can do to demand forecast is annual ordering meeting and their intuition to the market. The marketing and sales department takes charge of forecast without any scientific market researching and analyzing instruments, and receives no punishment from the company at the time of falsity. The distributors also forecast their own demand, but they are not inspired and take no responsibility to the whole demand in the entire supply chain. All the statistical work is handled by hand in most companies.

(4) Reclaiming logistics

Reclaiming logistics of clothing industry concerns about the return clothes which are unmarketable and the exchange clothes which have quality problems. Distributors send back the exchange and on sale or return clothes from all over the country through logistics companies. When manufacturers

receive, they repair them or change to new clothes and send back to distributors for the exchange clothes, or they deposit in warehouse for on sale fair for the unmarketable clothes. All these procedures are time-consuming, toilsome, and also costly. For most of the companies, the majority of keep-long-in-stock products are best-sellers of that year after the season. It is a big waste for clothing industry since the value depreciates heavily when a piece of clothes goes into a reclaiming logistics system comparing with that in a department store or a franchised store.

III. SOLUTIONS

In supply chain forming and integrating process, clothing enterprise need to carry out business restructuring and resources reallocation, thus clothing enterprises should focus on their own core competences, and outsource the logistics service to the qualified 3PLs. Clothing enterprises need to make strategic alignments with business partners, such as material suppliers, outsourcing factories, 3PLs, and other service providers, thus they can improve cooperation and coordination with these partners to reinforce their operational efficiency.

Concerning the interior management, clothing enterprises should pay more attention to inter-departmental cooperation. They need to integrate all the functions, including demand forecasting, R&D, designing, purchasing, manufacturing, depositing, transporting, distributing, and selling. They should try to make all these functions coordinate harmoniously, thus could earn the effect of synergy and result in cost-cutting and upgrade their service level.

The most important thing we suggest is to develop a practical information system, since it can integrate all clothing logistics functions and all the processes can be stabilized in one system.

As to solve the above-mentioned problems, we design the information management model in four modules, i.e. supply, production, planning and sales. Each module is a sub-system of the whole information system, with these sub-systems interact with each other. We shall introduce the four modules as follows:

(1) Supply Module

This module is to solve the problem of supply process. In this module, we include the procurement management, import management (for international purchasing goods), inventory management and quality management in order to keep control on the quality of the raw material and other bought-in goods. All these functions put together could avoid the shortcomings of supply logistics, such as isolation from other departments, and could let buyers obey to quality management control, other than paying attention to price control only. Here, the inventory management sub-system could secure the accuracy of inventory management, speed up the turnover of stock, and master the stock condition at real time. By integrating EAI system, the supply module can exchange information with suppliers on time. This module interacts with other modules of production, planning, and sales, linking background process of planning, operation, accounting and management.

(2) Production Module

This module includes production management, equipment management, BOM, production orders and workshop management. It interacts with supply, planning and sales, connecting the background planning, operation, accounting and management. It can satisfy the detailed and varied needs of manufacturers' production, and connects with others functions of supply, planning, and sales. Through working together, they can avoid discontinuity of material. It standardizes the production process, and ensures the production quality.

(3) Planning Module

This module includes production planning and material requirement planning. It interacts with sales, production and supply functions, and links planning with operation. Here, reclaim planning could manage the reclaiming logistics, as it regulates the flow of the reclaim products. By coordinate with the sales module, especially with sales analysis which creates sales forecast, the reclaim planning could avoid the unnecessary reclaim flow of the quality-flaw, unmarketable, on sale or return clothes, saving cost of unnecessary operation and logistics. The planning module builds up a manufacturer's planning system, optimizes all the processes and increases total management level.

(4) Sales Module

This module includes client management, sales plans, sales order, export management delivery management and sales analysis. By managing the sales order and sales analysis, manufacturers can control performance of sales department, ensure the execution of sales plan, and making a more accurate demand forecast. Through connecting with clients timely, manufacturers could adjust the production plan according the change of the market demand, response more quickly to customer demand, and carry out more efficient client management.

By connecting functions of supply, production, planning and sales, integrating the background process of planning, operation, accounting and management, the e-pos optimization information system unites material flow, information flow and cash flow in the whole process. Through viewdata and common data shared interior and exterior, the information system can increase the quality of information management and decrease costs in the whole process. This system should be market-driven and quick-response to customer's needs, in order to reach the target of "small lot, high frequency, and speediness". The following Figure 1 shows the information management model.

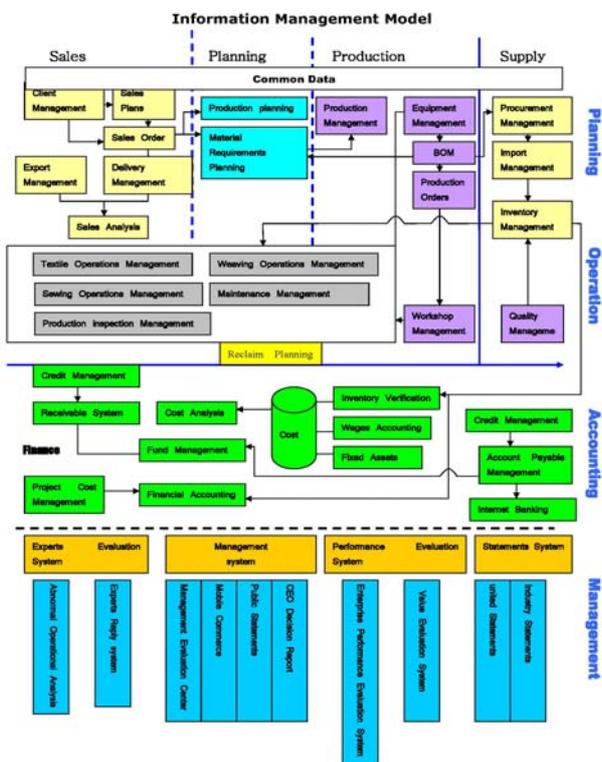


Fig. 1 Information management model

IV. CONCLUSIONS

Clothing industry is known as “timeliness”. The core competence of clothing enterprises is to contest for market share through designing, producing and selling up to date fashion. Even if a company has up-to-the-minute fashion, it may not have the ability to put it into the market in a very short time. Therefore, logistics become a roll booster for clothing industry. However, China’s clothing logistics is still at a low level in supplying, production, sales and reclaiming processes. We suggest a quick customer response and viewdata e-pos optimization solution, which could solve the problems in the whole logistics system. Only when one company has an efficient and effective logistics system, it can put into their products and preempt the market at the first time. Being a major competition instrument, clothing logistics is now playing its more and more import role in China market.

ACKNOWLEDGMENT

This work is supported by new century outstanding talent plan in Fujian.

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