

## Research on Value Rebuilding of Chain Retail Enterprise Supply Chain Based on QFD

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**Abstract:** Quality function deployment (QFD) takes user demand as a starting point, adapts to emerging consumption scenarios, provides new momentum for chain retailers to optimize the supply chain process and enhance the value, and is gradually changing the operation mode of chain retailers' supply chain. Based on the perspective of QFD, this paper explores the mechanism and characteristics of value reengineering of chain retail enterprises' supply chain from three aspects: the process procurement chain, the improvement of logistics financial profit model and social media marketing channels. In order to improve the supply chain operation mode of the original chain retail enterprises, promote the retail enterprises to better dock the market, optimize the product sales mode and enhance the user experience, it has an important role in promoting the chain retail enterprises to enhance the soft power of the supply chain.

### 1. Conceptual analysis of qfd

Quality Function Deployment (QFD), also known as Quality Function Deployment (QFD), is a multi-level deductive analysis method (Lin, 2014), which converts consumer or market demand into product design requirements, component characteristics and product production requirements through user-driven, and then guarantees product quality development. QFD embodies the idea of taking market specific demand as the orientation and consumer demand as the sole basis for product production. QFD technology occupies an important position in the complete framework of production and development design methods, and is the leading link for commodity developers to carry out product quality planning. Through QFD technology, enterprises can make decisions on the key links and components of product development and design, and then determine the specific implementation object and direction of product development and design.

By using QFD technology, enterprises can establish a close relationship between product R&D activities and consumer needs, thus effectively enhance product market competitiveness and ensure that products can fully meet consumer needs (Yan, 2013). Investigation and analysis of consumer demand is the initial input of QFD, and the final output is the terminal product to meet market demand (Lu, 2012). Product output mainly depends on consumer satisfaction, so it is important to correctly understand and analyze consumer demand for the implementation of QFD. Relevance matrix is the basic tool to develop QFD. The idea of implementing QFD as a whole can be described by the waterfall decomposition model. The key link of QFD implementation is to obtain consumer demand, and subdivide consumer demand information into all aspects of product production, further transform demand information into technical and quality control requirements of product production, to meet consumer demand. When decomposing the consumer demand information, the information can be divided into four stages: product technical characteristics, product parts characteristics, product process characteristics and product quality control methods, so as to formulate product production planning, production planning and product quality improvement plan for manufacturers, and provide decision support for enterprise product production.

### 2. Problems of value creation in supply chain of traditional chain retail enterprises

First, the quality of supply chain logistics is low. Low cost and high efficiency are the key to improve the market competitiveness of retail enterprises. High quality logistics distribution system

and efficient distribution system are the important guarantee for chain retail enterprises to reduce circulation costs and improve operational efficiency (Li, 2014). According to the survey, about 20% of chain retail enterprises have not yet established distribution channels suitable for the internal development of enterprises, while the remaining 80% of chain retail enterprises even have distribution centers, but the automation level of distribution centers has not reached the high efficiency standard (Qian, 2016). At the same time, the problems of small distribution scale, backward facilities and incomplete functions directly affect the development and expansion of enterprises (Cheng, 2018).

Second, the market position is not clear. At present, China's chain retail enterprises operate in the same category, price and store layout, lack of corresponding characteristics, resulting in the same region, the same grade and the same type of chain retail enterprises fierce competition bureau (Luo and Wang, 2016). The competition among chain retail enterprises still stays in price competition. Most of them focus on immediate interests and do not establish business characteristics for the long-term development of enterprises. As a result, the internal management and management of enterprises lack innovation, and even seriously imitate peer enterprises, which makes it difficult to improve the business performance of enterprises.

Third, the operation of chain retail enterprises is not standardized. At present, many retail enterprises in China are chain-like, but they cannot really achieve unification. Chain retail enterprises cannot achieve centralized purchasing and relatively decentralized operation. Therefore, there is no built-in economic link system among the chain stores, which makes the competition between the chain stores uncoordinated and leads to the disintegration of the chain stores.

### **3. Support links of supply chain value reengineering for chain retail enterprises based on QFD**

On the basis of the above analysis, this paper carries out value reengineering of chain retail enterprises supply chain based on QFD, mainly focusing on the procurement, logistics and marketing links of the supply chain of retail enterprises. We strive to upgrade and optimize the traditional supply chain model in the process of supply chain value reengineering of chain retail enterprises, and further improve and break through the relevant links on the basis of improving the service and product quality of chain retail enterprises.

#### **3.1 Processing Purchasing Chain**

Chain retail enterprises involve a wide variety of products and materials procurement, which makes it difficult to form large-scale and orderly operating benefits, and the value of procurement has been difficult to play. Therefore, based on QFD, starting from the internal procurement department of chain retail enterprises, to achieve product procurement and management is also the best way to develop the supply chain of chain retail enterprises in the future, and it is also an important link to seamlessly connect the procurement link with the supply chain. Chain retail enterprise procurement is divided into two parts: procurement center and subsidiary procurement department. Purchasing process of purchasing center mainly adopts inquiry, index and single purchasing method, unifies purchasing products and formulates purchasing plan according to the attributes of bulk or major materials. Then the procurement plan or tender report will be submitted to the head of the procurement center for examination and approval. After approval, the procurement task will continue to be completed, and be responsible for tracking the arrival of goods, inspection of goods, payment and warehousing, etc., without passing back to the requisition department. The subsidiary procurement department is mainly proposed by the retail enterprise demand department, filling in the procurement demand form and sending it to the procurement department for review. In the case of bulk or important materials, the subsidiary departments need to report to the procurement center, which is responsible for the procurement. If it is small-scale goods, it is necessary to ask for purchase materials according to actual needs, and then enter the procurement process after approval by the procurement center. In the supply chain procurement process of retail enterprises, the purchasing department of retail enterprises is subdivided. The purchasing center is responsible for purchasing bulk or important materials whose prices change

rapidly and are greatly affected by the market, and signing quarterly or annual contracts. Remaining materials are examined and approved by the affiliated purchasing department according to the specific consumption, and then orders are placed directly with suppliers, and temporary contracts or quarterly contracts are signed.

Chain retail enterprises supply chain process purchasing link is the support foundation of the whole supply chain operation. It can form a standard and specialized purchasing mode, ensure stable and high-quality supply of goods for retail enterprises, and save certain purchasing costs, avoid direct or indirect losses due to market price fluctuations. Lock retail enterprises in the market to obtain core competitiveness of the key.

### 3.2 Perfecting the Profit Model of Logistics Finance

In modern economic activities, financial institutions play the role of payment intermediary, economic regulation, financial services and credit intermediary in the logistics institutions of chain retail enterprises, and adjust the money supply of third-party logistics, which is the basis of chain retail enterprises' supply chain activities. As shown in Fig. 1, the internal and external logistics of retail enterprises and the value chain of financial institutions have developed in coordination, and the ability of value reengineering has been acquired, which promotes retail enterprises to find a new profit growth point in logistics finance. The specific increased profits can be expressed as  $P_{B1} + P_{B2} + P_{B3} + P_{B4}$ . Among them,  $P_{B1}$  Represents the reduction of risk control costs in the supply chain of retail enterprises,  $P_{B2}$  Represents the increase of interest income from the expansion of credit scale of retail enterprises,  $P_{B3}$  Represents the new growth profits brought about by the improvement of customer management level in retail enterprises;  $P_{B4}$  New profits from providing financial services on behalf of internal and external logistics of retail enterprises. Specifically, with the coordinated development of logistics and finance, financial institutions can provide financial services for the logistics of retail enterprises, which can break the information asymmetry in the traditional chain retail credit model and help the chain retail enterprises better avoid the default risk due to the moral anomie of enterprises or individuals. At the same time, in the new and perfect profit model of logistics finance, the real right of chain retail enterprises has been handed over to financial institutions. Even if consumers or enterprises default, banks can also cash in and auction pledges to ensure the capital security of the supply chain operation of retail enterprises, thus greatly reducing the retail enterprises. Supply chain operation risk.

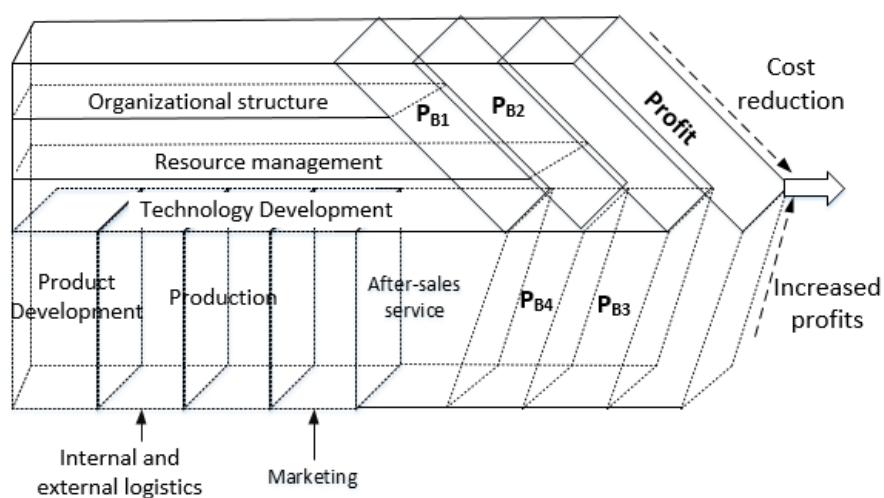


Figure 1. New Logistics Finance Profit Model

### 3.3 Social Media Marketing Channels

Retail enterprises require that marketing channels have multiple characteristics. The most important thing is to ensure the safety of funds, information and logistics in the marketing process. Social media marketing channels have the characteristics of emerging virtual community marketing,

which is consistent with the marketing attributes of chain retail enterprises' supply chain products. Therefore, social media marketing channels have good practicability for retail enterprises' supply chain value reengineering. The marketing channel integrates elements of e-commerce, social media, online payment and interactive communication to enhance user experience and expand the marketing scope of retail enterprises. As far as e-commerce is concerned, social media marketing channel is based on but different from traditional e-commerce mode. Through social media platform, it carries out a series of marketing activities, disseminates product information, service and image of retail enterprises to other businesses, and sells products to users. As far as social media is concerned, under this marketing channel, retail enterprises encourage users to share, cooperate and create. Based on the diversification of circles and relationships, retail enterprises can form multi-angle and diversified interactive ways with users, which can be used as a link channel of individualization, individualization and collectivization of retail enterprises' products and marketing for retail enterprises' products. Play a solid advertising effect. As far as online payment is concerned, the marketing channel provides a more convenient and secure payment platform for manufacturers, businesses and users. It has real-time transaction function to save enterprise costs, time and space resources. As far as interactive communication is concerned, retail enterprises use social media platform to ensure effective communication between manufacturers, businesses and users, to promote the conformity of consumer demand and enterprise product attributes, and to maximize user perception experience

## **4. Soft strength construction of supply chain value reengineering for chain retail enterprises**

### **4.1 Optimizing Logistics Distribution System and Improving Inventory Management Level**

Improving the efficiency of logistics operation is the key factor for chain retail enterprises to increase the value of supply chain. Logistics cost and distribution rate directly inhibit the value of supply chain. Therefore, in order to further promote the value added of enterprise supply chain, chain retail enterprises should optimize logistics distribution system, improve inventory management level and realize commodity allocation based on consumer demand. Relevant enterprises should construct logistics distribution mode with distribution centers as the main part. Chain retail enterprises set up a distribution mode with logistics distribution centers as the main part, further realize centralized and unified distribution of goods, optimize the distribution workflow of enterprises, and then improve the efficiency of distribution. At the same time, the use of modern distribution equipment in the distribution process can reduce the cost of distribution and improve the efficiency of distribution.

### **4.2 Establishing Integrated Information System to Improve the Openness of Information**

In the supply chain of chain retail enterprises, each main body jointly establishes an integrated information management and information sharing system, thereby improving the openness of product and logistics information in the supply chain. Through information sharing system, real-time information is provided for chain retail enterprises and supply chain upstream and downstream enterprises, and market demand information is obtained and analyzed from multiple perspectives. In this way, it can provide support for decision-making of product production and sales, and make the information utilization efficiency of chain retail enterprises reach its peak value in the supply chain. At the same time, when building information sharing system, enterprises should combine with advanced information technology, such as EDI technology, EOS technology, OCR technology, to realize information sharing from commodity procurement, warehousing, circulation, management, sales and other processes. In terms of product production and suppliers, the construction of integrated information system can effectively achieve targeted production and sales according to market demand information, promote chain retail enterprises to "respond quickly", and then reduce business risks such as enterprise procurement, inventory and so on. For chain retail enterprises, the construction of information system can help enterprises obtain goods quickly and increase market share.

### **4.3 Improving the Core Competitiveness of Enterprises by Using Hierarchical Pricing Strategy**

In the process of commodity operation and sale, chain retail enterprises should formulate hierarchical pricing strategies according to the individual needs of consumers, so as to improve the core competitiveness of chain retail enterprises. Firstly, retail enterprises should not only consider product cost, but also classify similar products, and give reasonable price range for different grades of goods. Such as commodity packaging, volume and weight as pricing differentiation criteria, fully meet the real consumer psychology, increase customer stickiness. Secondly, the chain retail enterprise can take product quality as the standard of product grade division, stipulate different grades and different prices, consumers can determine product quality according to the price of products, provide consumers with distinct products, and simplify the service process. Thirdly, retail enterprises should take the transportation cost of products and monthly or annual sales as the measure of graded pricing. According to the distribution distance and location of goods, they should reduce the price appropriately for commodities with higher monthly or annual sales, so as to ensure the operation cost of enterprises and improve the circulation value of supply chain.

### **4.4 Promoting the Experience of Consumer Service and Realizing Brand Word-of-mouth Marketing**

With the increasing diversification and individualization of consumer demand, consumer experience directly determines the retention rate and attraction rate of consumers, and then determines the profitability level of chain retail enterprises' supply chain. Therefore, chain retail enterprises should make full use of the advantages of full-channel retail, and implement services to all channels, as well as the whole process of consumer shopping. And extend the service to pre-purchase, purchase and after-purchase, fully do a good job of after-sale returns and other services, create word-of-mouth effect in consumer groups, and then achieve word-of-mouth marketing of goods. At the same time, chain retail enterprises should integrate online and offline stores to make monopoly stores and experience stores more widely, actively promote the "last mile" and promote chain retail enterprises to achieve rapid response to consumers. In the process of value chain reengineering of chain retail enterprises, the decision-making of product production and enterprise operation should change with the change of consumer demand, and constantly adjust themselves to adapt to the market environment.

## **5. Conclusion**

In the new economic era, new technologies such as big data, Internet of Things and QFD are widely used in economic activities, which promotes the transformation of operation mode of chain retail enterprises in China, especially consumption as the main way to promote the growth of retail profits. QFD technology improves the response rate of chain retail enterprises to users' needs, speeds up the reform and improvement of our new consumption system, and promotes the basic role of consumers in retail formats to become more prominent. However, consumption growth is mainly determined by both supply and demand. No matter how fast the consumption demand grows, there is no effective product supply, nor can the rapid development of retail chains be realized. Chain retail enterprise supply chain value Reengineering Based on QFD in the procurement, logistics and sales links can achieve a balance between supply and demand and meet the consumer experience. Applying the new optimization link to the operation of chain retail enterprises, and then strengthening the resource docking of chain retail enterprises, providing comprehensive services for users, creating a graded, diversified and personalized consumption environment, and ultimately improving the performance of chain retail enterprises.

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