

Analysis of Supermarket Supply Chain Management

Ruihan Liu^{1,a,*}

¹Guangdong Country Garden School, Guangdong, Guang zhou, 510000, China

a. HarryLiu0107@163.com

*corresponding author

Abstract: Supply chain management is one of the main challenges in the development of the retail industry. As an important form of retail trade, supermarkets have attracted the attention of the whole retail industry. At present, large, medium, and small supermarkets are facing complete market competition, and each supermarket enterprise has more or less problems in its own supply chain relationship. The problem of how to solve the problems of various types of supermarket enterprises, improve their management programs, and win the market has become particularly important. Based on the existing literature and statistical data, this paper analyzes the problems existing in the supermarket retail industry in China, focusing on the deficiencies of the current supply chain and how to manage and optimize the supply chain. The result shows that the supply chain in domestic supermarkets still has a long way to improve. There are mainly five types of problems, which are supplier problems; delivery problems; location problems; display problems; and pricing problems. These kinds of problems might cause the loss of customer loyalty. The solution consists of three parts: diversifying the product supplier to ensure that the popular product never runs out; replacing the product's shelf so that the customer can grab the popular product at first sight; and replacing the product's shelf so that the customer can grab the popular product at first sight. Finally, be precise with the product's pricing strategy; stress the price of the popular products and increase the profit for the unpopular ones.

Keywords: Supermarket Supply Chain, Domestic Supermarket, Supply Chain Management

1. Introduction

As a form of business, supermarkets in the United States have a history of more than 70 years. The first supermarket appeared in 1995 in China. For now, the supermarket has entered a completely competitive stage. Compared with foreign supermarket chains, there is a big gap between China's supermarkets in terms of scale, efficiency, and so on. With China's accession to the WTO, foreign supermarket chains have entered the Chinese market at a tremendous speed and scale. Wal-Mart, Carrefour, Auchan, and other international retail giants have entered China, and domestic supermarket companies are facing huge challenges. If the domestic supermarket retail industry does not accelerate its development and improve its management level in recent years, it will face great threats.

With China's supermarket market facing foreign investment, the competition in the supermarket industry is becoming increasingly fierce. Supermarket supply chain management has become vital. With the development of the supermarket industry, people first set their sights on supermarket

operating enterprises. So far, China's supermarket operating enterprises, especially well-known enterprises such as Hualian, RT-Mart and Wangfujing, have achieved certain results in both theory and practice. However, the supply chain management of retail goods suppliers, especially domestic retail goods suppliers, is still not taken seriously, becoming a weak link in the supply chain. People's research on supermarkets mainly stayed in promotion strategy, pricing strategy, place strategy, and product strategy. By mainly using the control variable method, according to the switch of several promotion factors, leaving the rest of the factors unchanged, to judge whether the improvement of marketing strategies can bring new growth. Only a few people study how to optimize the supply chains of supermarkets to bring cost reduction and efficiency increases. Optimizing the supply chain can greatly reduce product loss, increase the speed of delivery and diversity of products, thereby increasing the purchasing power of the public. Therefore, it is very critical and urgent to analyze the existing problems in China's supermarket retail industry and accelerate its development based on existing literature and statistical data. The paper mainly focuses on the shortage of today's supply chain and how to manage to optimize the supply chain. The paper is mainly about six parts: Introduction; Supermarket types; Supply chain analysis; Supply chain management in China; Case study; and finally, the conclusion.

2. Types of Existing Supermarkets

Giant supermarkets are characterized by:

- (1) Self-selected sales, separate entrances and exits and settle at the cash register at the exit;
- (2) The composition of commodities is mainly based on commodities with high purchase frequency, and the commodities include meat, poultry eggs, fruits, aquatic products, frozen foods, non-staple food seasonings, grain and oil and their products, milk and dairy products, cooked foods and daily necessities;
- (3) The business hours are about n hours a day, and parking lots;
- (4) Site selection in residential areas, traffic arteries, and commercial areas;
- (5) With residents as the main sales object;
- (6) Area is more than 500 square meters;

Convenience store-style minimart is characterized by:

- (1) Shelf self-selection; settlement is carried out uniformly at the cash register at the import (or export) place;
- (2) The commodity structure has obvious characteristics, such as instant consumption, small capacity, and emergency;
- (3) The business hours is long, generally more than 16 hours, or even 24 hours, all year round;
- (4) The site is selected in residential areas, along the main highways, as well as in the locations of stations, hospitals, and entertainment venues;
- (5) Generally set within the range of 5 to 7 minutes of walking shopping for residents;
- (6) The business area of the store is about 100 square meters;
- (7) The store is bright, clean and the shelves are full;
- (8) The target customers are mainly residents, singles, and young people. 80% of customers are buying for a purpose;
- (9) The price of goods in convenience stores is slightly higher than the price of goods in general retail formats;

3. Supermarket Supply Chain Characteristics Analysis

Supermarket supply chain is similar to the general supply chain management model. The difference is that supermarket enterprises are generally facing the consumers themselves, and supermarket

companies have their own unique characteristics in their own operation process. The role of supermarket supply chain management cannot be ignored, and the characteristics of the supermarket supply chain can generally be found to have the following common points:

3.1. The Basis for Supermarket Enterprises to Implement the National Strategy

Large supermarket chains generally belong to a large number of stores, and supply a variety of goods. The business format of a large supermarket should be expanded from a single model in the initial stage to a national chain of large supermarkets, and a national strategy of transformation from regional to national must be established. To achieve this ambitious national strategy, the supply chain management system project must be launched as early as possible. From a supermarket supply chain, there must be a central business decision-making system, a warehouse management support system, and then a store sales system. With the continuous expansion of the scale of operation of supermarket enterprises, the supply chain system of supermarkets must be upgraded, and a successful supply chain management system must not only have the support of the headquarters decision-making system but also have the support of a social supply chain, including procurement, distribution and other aspects of support. The supermarket supply chain has not only self-equipped, direct distribution from suppliers, and third-party logistics. The supply chain management of supermarket enterprises is an important basis for the implementation of its national strategy, and the growing scale of supermarket enterprises will undergo great changes in terms of business scale, business format, number of stores, store distribution, etc., so there must be a supply chain management system that can adapt to its scale development and changes, which is the necessary foundation for supermarket enterprises to move towards the whole country and expand their scale.

3.2. The Supply Chain of Supermarket Enterprises is an Appreciation Chain

The supply chain is a broader enterprise structure model, which includes all the enterprises that have joined, starting from the supply of raw materials and passing through the manufacturing, processing, assembly, distribution, and other processes of different enterprises in the chain to the end user. It is not only a material chain, an information chain, or an asset chain that connects suppliers to users, but also a value-added chain. According to relevant statistics, the implementation of supermarket supply chain management can reduce the total cost of enterprises by 10%; the on-time delivery rate of enterprises on the supermarket supply chain node can be increased by more than 15%; the order-the cycle time of production can be shortened by 25% to 35% [1]. The productivity of node enterprises in the supply chain can increase by more than 10%. Supermarket enterprises adopt the supply chain management model, which can enable enterprises to find the best partners in the shortest time and win the market with the lowest cost, the fastest speed, and best benefits, benefiting not only a company but a group of enterprises.

4. Analysis of Supply Chain Management of Supermarkets in China

4.1. The Basic Idea of Supermarket Supply Chain Management

The basic idea of supermarket supply chain management is to be guided by the market and customer needs, to the principle of collaborative business, collaborative competition and win-win as the mode of operation, to connect customers, distributors, suppliers, manufacturers and service providers into a complete network chain structure, forming a highly competitive strategic alliance, so as to play an important role in the connection of supermarket enterprises as intermediaries.

4.2. Problems and Suggestions for Supermarket Supply Chain Management

4.2.1. Domestic Supermarket Problems.

For now, China's supermarket supply chain management is still in the initial stage of rise, and many links in the supply chain still need to be improved. The shortage of supermarket goods directly reflects the current situation of an inefficient supply chain and low operating standards in China's supermarket retail market. It may not be difficult to encounter a situation where you want to buy a carton of fresh milk at night, but the freezer shelf in the supermarket is empty, so you give up the purchase. This common phenomenon occurs on the FMCG shelves of supermarkets in China, so the shortage of best-selling products is considered a problem in supermarket supply chain management. It is estimated that the average shortage rate of Chinese supermarkets is 10%, which is much higher than that of foreign counterparts, and the annual loss caused by the failure to sell the best-selling goods in time is as high as 83 billion yuan [2]. The survey shows that the bottleneck link that causes the shortage of supermarket goods exists in five aspects:

- (1) There are too many single products and not enough shelves;
- (2) The warehouse in the store is small;
- (3) A lack of a replenishment support information system, resulting in missed orders, late orders, and batch orders that are not optimal;
- (4) A lack of transparency and communication between retailers and suppliers;
- (5) The quality of both suppliers' and sellers' logistics and distribution cannot be guaranteed;

The most fundamental gap between domestic and foreign supermarket operations lies in the concept, "all aspects of the supply chain must provide value". Many domestic suppliers and retailers do not clarify this value chain in concept, focusing on short-term interests, so they cannot sort out the entire supply chain. China's supermarket enterprises in supply chain management still need to make great progress, especially in China's unique national conditions. How supermarket enterprises establish a supply chain management system with Chinese characteristics is of great significance.

4.2.2. Solutions for the Problems.

(1) Understanding transformation.

In choosing the mode of supply chain management system, supermarket enterprises should take availability and practicality as the basis for selecting the model. Taking Lianhua Supermarket as an example, Lianhua adopts a flexible method according to the topology of the system, dividing the system into two, half using foreign advanced models, and half developing modules according to the characteristics of Lianhua Supermarket research. In the specific details of supply chain management, Lianhua also makes it useful to me according to its own characteristics. For example, in terms of position management, in the current situation where the domestic commodity bar code paste is not standardized, the method adopted by Lianhua is to apply the mathematical simulation redundancy theory to the position management technology. In shelf management, everywhere takes into account the human factor, and simplifies the things that can be simplified on the operation interface. An acceptance link has been added to the interface between the distribution center system and the outside world. In this situation, there are machine inspections and manual inspections as well. Because this joint is smooth, the subsequent links will be much more convenient. Therefore, it is wise and desirable for supermarket enterprises to improve theories.

(2) Pinpointing the "Entry Point"

In the early stages of supply chain construction, you can start with one aspect of the supply chain. For example, we can start with the establishment of an intelligent distribution center to

achieve information sharing, and then gradually upgrade on this basis, and gradually integrate the headquarters decision-making system and the socialized supply chain system into the supermarket supply chain management system.

(3) Engage in Demand Ratio

The demand ratio is how to use a system to achieve efficiency rather than buying a system that is advanced and expensive but does not produce actual results or has few effects. This requires the supply chain management system of supermarket enterprises to develop in a pragmatic direction step by step. That is, supply chain management is based on improving the efficiency of enterprise management behavior and business activities, reducing operating costs, and expanding market channel services. On the other hand, taking into account China's national conditions and the current situation of supermarket enterprises. While the scale of supermarket enterprises expands and the volume of business grows, whether its supply chain management system needs to be completely improved or upgraded without abandonment, which is related to the pursuit of "demand ratio" in system design.

5. Case Study — Lotte Mart

Mart is a subsidiary of the Lotte Group specializing in hypermarkets. In June 2008, Lotte Mart of the Lotte Group entered the Chinese market through the acquisition of Wankelong, and now Times Retail has 65 supermarkets, and after taking over Times Retail, the number of stores of Lotte Mart in China will increase to 75 [3].

The combination of concentration and decentralization means that United Supermarket combines the extensiveness of the development framework construction and the centralization of network development in the implementation of the business development strategy. Due to the difference in economic development levels in different regions in China and the various business models of the chain industry having the law of succession, convergence and substitution, Lotte Mart takes hypermarkets, food-enhanced supermarkets and convenience stores as the main formats in its external expansion, and the development of standard stores and convenience stores is supported by hypermarkets in business flow, logistics and information flow as much as possible, and gradually improves the planning and construction of various professional format support systems in the course of development.

With the development and maturity of the chain industry in China, the concentration of business resources and the cross-regional tendency of business scope are becoming more and more obvious. The national and regional chain businesses continue to emerge, and many small and medium-sized retail enterprises are finding it more and more difficult to survive independently under the influence of large chain commercial enterprises, and will eventually be gradually incorporated into the operation network of these chain commercial enterprises. Lotte Mart makes full use of its existing operating advantages, scale advantages, and brand advantages, strengthens the alliance and collaboration with peer enterprises, and strengthens the work of mergers and acquisitions and restructuring. At the same time, the use of franchise mode to vigorously develop franchise stores is also an efficient way to seize the market and expand the scale. Lotte Mart has set up a special franchise headquarters to be responsible for franchise work throughout the country, with the goal of increasing the franchise ratio of standard supermarkets from the original 39% to the current 70% and the convenient franchise ratio from the original 30% to the current 80%. For large supermarket chains such as Lotte Mart, all aspects of operation and management have been quite mature. The key is to continue to maintain sustainable development and market potential, formulate the correct development strategy and expand market share, and increase the scale, modernization and informatization.

6. Discussion

There are countless brands on the market. Each brand is divided into different markets. The principle of the large retail industry, domestic and abroad, is the “20/80” rule. That is, 80% of sales come from 20% of goods. The supermarket mall managers should be ranked according to the share of each brand in the market in a certain category of goods, and the categories that accumulate the top 8 market shares should be selected. Such varieties account for about 20% of the total varieties, but all cover 80% of the market sales share. Therefore, large supermarket chains should first correctly and reasonably position the channels of supply to reduce the average level of inventory and achieve good benefits [4]. After selecting the target market and the positioning of the product grade, supermarket enterprises should adopt a more reasonable attitude towards pricing and promotion. In particular, it is necessary to set the price of conventional goods and sensitive goods even slightly lower. Survey research shows that 70% of consumers’ supermarket procurement decisions are made on a sudden basis, and they only have a memory of the price of some products in different shopping malls [5]. This part of the goods is called sensitive goods (about 10% of the total number of products), so different goods should add different gross profits. Supermarket operations do not need to reduce the price of all goods. Instead, it lowers the price of sensitive goods to create the impression that all goods in the mall are cheap, maintaining both profits and establishing a cheap image because consumers are not sensitive to 90% of the price of goods [5]. In this way, supermarkets can achieve a competitive price advantage while maintaining a good profit level. Creating the unique market characteristics of supermarket enterprises will bring unpredictable operating benefits to enterprises. Supermarket enterprises can start with the following aspects to create their own market characteristics:

(1) From the aspects of business operations, sales objects, business strategies, and other aspects of appropriate positioning, highlighting the characteristics. The IP/branding of the supermarket can bring great consumer loyalty, the branding has its unique value for the business, even can bring the pricing premium, cause the consumers are willing to pay for their sense of security or sense of affordable [6].

(2) To facilitate customers, commodity display, reasonable layout, so that customers have a focus on finding their own shopping objects, and the purchase frequency of high, low priced goods should be placed in the easy-to-buy position to meet the customer’s fast-paced psychology [7]. For example, entertainment facilities such as cafes, cultural corners, and naughty castles should be added to the corners of shopping malls, which will give consumers a more active purchasing atmosphere.

It is necessary to fully display the characteristics of the product, so that the characteristics of the product fully act on the customer’s visual, olfactory, hearing, and other sensory organs and enhance attraction and stimulation. From the statistic 67% of the customer will impressed in the supermarket during their first 10 minutes of shopping [8].

7. Conclusion

China’s current supply chain system and supply chain management technology are very imperfect. The supply chain is proposed by the singleness of products; product quality cannot be controlled from the origin; over-dependence on land delivery; and long-time delivery causes product loss as well as the shortage of supermarket operations and management, which leads to the shortage of products, product display inefficiencies, and other marketing problems. From the analysis in the article, we need to optimize the delivery system, integrate existing suppliers to ensure that the volume of best-selling goods is sufficient, and pay attention to shelf placement, product display, and other issues at the beginning of the supermarket construction. In terms of pricing strategy, we

should reduce the profits of best-selling products, increase the profits of unpopular products, and use best-selling products to drive the consumption of unpopular products. Just like in the case study, make full use of shelf placement, rich and distinctive products, and accurate pricing strategies to form solid loyalty in the minds of the people. With the increasing competition of the market and people's increasingly high service requirements, it has become imperative to improve the level of operation and management; rationally plan industrial marketing programs; pursue high-quality service standards and the most economical costs; and manage the basics and details of procurement, inventory, distribution logistics, information transmission, supply chain, and other links.

References

- [1] Zhou Lixin. *Logistics project management*. Tongji University Press (2004).
- [2] Yang, Xiafang. *International delivery management*. Tongji University Press (2004).
- [3] Luo Chen. *Clarify supermarket management and operation*. China Economic Publishing House (2014).
- [4] Zhao Yuechun. *Introduction to chain management*, China Social Sciences Press (2006).
- [5] Wei Rongqiao. *Logistic study*. Qinghua University Press (2005).
- [6] Michael E Porter, *Competitive Advantage*, Huaxia Publishing House (1997).
- [7] Zhoubi. *Consumer Behavior*, Qinghua University Press (2021).
- [8] Liu Xielin. *Business Innovation Management*, Science and Technology Press (1997).