

Research on the Supply Chain of Fast Moving Consumer Goods Industry

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Abstract: Fast-moving consumer goods are closely related to people's lives and play an important role in the global economy. The fast-moving consumer goods industry is characterized by rapid changes in market demand, affected by seasons and holidays, a wide range of products, and fierce market competition. Based on the characteristics of the fast-moving consumer goods industry, this paper analyzes the supply chain of the fast-moving consumer goods industry and explains the causes of the "Bullwhip Effect" in the fast-moving consumer goods industry. It is believed that the manufacturing enterprises of fast-moving consumer goods can reduce the impact of the "bullwhip effect" on the entire supply chain by formulating effective master production plans.

Keywords: Fast-moving Consumer Goods, Supply Chain Management, Bullwhip Effect.

1. Introduction

Fast-moving consumer goods are closely related to people's lives. They mainly involve food, daily chemical products, and medicines, which are an indispensable part of people's daily life. The supply chain of this industry has the characteristics of long length, fast running rhythm and many kinds of products. Therefore, the supply chain of fast-moving consumer goods has efficient operational efficiency and can respond quickly to market demand. In developed countries such as European and American countries, the idea of supply chain management has been adopted to improve the efficiency and effectiveness of the entire supply chain. In most links of raw material supply, production, transportation, distribution, sales, and after-sales service of fast-moving consumer goods, resource sharing between upstream and downstream enterprises has been realized. In China, although the fast-moving consumer goods industry has great development potential and a large consumer group, few enterprises that use information tools to manage the entire supply chain system. Additionally, the information between upstream and downstream enterprises in the fast-moving consumer goods supply chain is out of touch, information is asymmetric, and resources are not fully shared, resulting in the entire supply chain business connection is unideal, and even between the internal departments of the enterprise, such as sales and production. It is difficult to share information, resulting in low supply chain responsiveness and high operating costs.

2. Characteristics of Supply Chain in the fast-moving consumer goods industry

The fast-moving consumer goods industry is a typical mass consumer market. The variety of fast-moving consumer goods, fierce market competition, low customer loyalty, and long product supply chain require the fast-moving consumer goods supply chain to respond quickly to the changing needs of end consumers. Simultaneously, despite increasing market competition, fast-moving consumer goods enterprises should

more accurately grasp the needs of consumers, by mastering the consumption trend, understand the characteristics of fast-moving consumer goods season and periodicity, establish high-quality distribution channels, reduce logistics costs and so on to improve the core competitiveness of enterprises [1].

2.1. The Channel hierarchy is complex

This is precisely because of the above reasons, leading to the fast-moving consumer goods companies in the distribution requirements are particularly high, and the pressure is particularly large. To be able to affect tens of millions of consumers, they must allocate goods to tens of thousands of terminal retail outlets. Even assuming that each distributor or wholesaler has one hundred downstream customers, it also requires three layers of intermediate links. Therefore, for large FMCG companies, it is necessary to manage primary and secondary, or even four or five wholesalers. Of course, this also poses a various of challenges to distribution management: how to reduce distribution costs and reduce unnecessary loss between channels at all levels; how to ensure that all levels of distributors and retailers cooperate with the company's overall marketing strategy to achieve the same pace. Some famous enterprises, such as Unilever; Wahaha, have a lot of successful experience in this area. One of the common points of these successful enterprises is that they all emphasize the concept of supply chain integration. They believe that distributors are not only the business objects of "first-hand money, first-hand delivery," but also partners at the strategic level. They emphasize that the basis of cooperation between the two sides is to create value together and can maximize the "economies of scale" in economics. To achieve this "1+1>2" integration effect, they adopted a shared information system, franchise strategy, VMI (Vendor Managed Inventory), and various of other incentives.

2.2. The Collaborative replenishment plan becomes the mainstream of retailers

The main feature of the traditional supply chain is that the manufacturing enterprises away from the consumer market determine the direction of the supply chain. However, since the 1960s, retailers have entered a period of prosperity and

began to gaining more control over the supply chain. After the 1990s, large retailers represented by Wal-Mart have rewritten the rules of supply chain production and sales. They began to dominating the downstream sales of the industry, such as Wal-Mart in the United States, Medron in Germany, Carrefour in France, and Tesco's in the United Kingdom. Although these retail giants have entered the Chinese market, due to the huge Chinese consumer market, these retail giants cannot be in an absolute dominant position in the Chinese market. The sales channels of the FMCG industry are divided into two types. The retail giants located in large cities call them Key Account (KA), and companies such as retail giants and convenience stores located in second and third-tier cities are called traditional customers as long as they are supplied by distributors. Although the influence of KA customers on fast-moving consumer goods companies is gradually increasing, collaborative replenishment plans can be achieved by sharing information with 'KA' customers. However, for the needs of traditional customers, fast-moving consumer goods

companies can only adopt predictive evaluation.

2.3. High requirements for supply-chain planning implementation

In view of the current status of China's fast-moving consumer goods industry supply chain, some scholars believe that around the fast-moving consumer goods supply chain structure, to achieve rapid response, value-added and predictable between business links and members, First, it is necessary to establish an optimized integrated planning system. Under the condition of comprehensive consideration of various resource constraints, according to the optimized rules to quickly and accurately formulate business plans, and according to dynamic demand changes, timely scheduling, to guide the development and operation of the business [2]. The process of the FMCG industry supply chain integration planning system is shown in Figure 1.

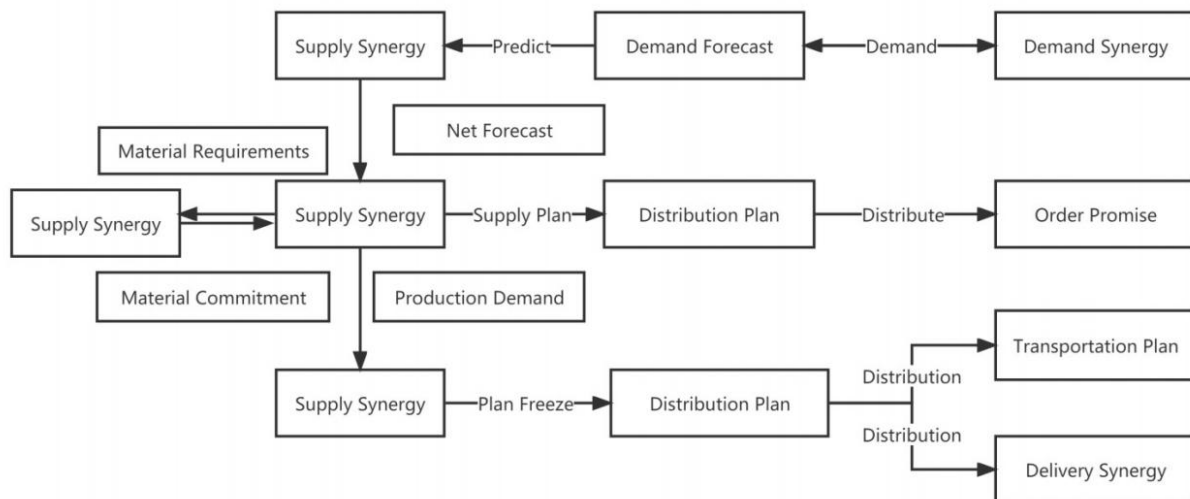


Figure 1. Supply Chain integration plan of fast-moving consumer goods industry

From Figure 1, it can be seen that the main production plan is based on the demand forecast to obtain the quantity of production. On the one hand, the production capacity determines the supply and distribution plan of the finished product market. On the other hand, it determines the supplier's material demand plan, which is at the core of the FMCG industry supply chain integration plan.

3. Analysis of "Bullwhip Effect" in fast-moving Consumer Goods Industry

In 1995, Procter & Gamble (P & G) management in the sales of paper diapers, market analysis, found that although the sales of diapers in a certain area is very stable, retail sales data show that the change is not immense, however, dealer sales began to having greater volatility, when the demand is transmitted to the manufacturer, the demand fluctuations; when it comes to raw material suppliers, the demand fluctuation of customer order quantity is countless. This phenomenon is similar to the situation when we wave the bullwhip. Although only the wrist is slightly forced, the whip will swing sharply. Therefore, people call this phenomenon "Bullwhip Effect". Professor Sterman of the Massachusetts Institute of Technology, through the famous beer experiment,

also proved that the "Bullwhip Effect" exists in reality [4].

It can be seen that the bullwhip effect refers to the slight change in customer demand downstream of the supply chain, which will lead to drastic changes in the raw material supply, production, and operation management of upstream enterprises. When the consumer demand for a commodity in the market changes slightly, this fluctuation will be along the retailers, wholesalers, distributors, and manufacturers countercurrent, and gradually expand, in reaching the final source supplier, the demand information obtained and the actual consumer market demand information. There is a huge deviation, the demand information is seriously distorted or distorted, which is the "Bullwhip Effect".

The supply chain of the FMCG industry consists of suppliers, manufacturers, distributors, retailers and consumers, covering a series of processes such as raw material acquisition, production, sales and logistics. Simultaneously, the market is constantly changing, the demand is difficult to predict, and the promotion methods and methods of competitors are constantly updated, logistics distribution and customer emergency orders and other factors, resulting in the rapid consumer goods industry supply chain fluctuations are countless, and the production response speed is slow. The specific reasons for the bullwhip effect in the fast-moving consumer goods industry are:

3.1. Demand forecasting method

Most fast-moving consumer goods companies rely on experience to predict demand and are linked to annual business goals. The general practice is: based on the actual sales data in the past, as a benchmark for future demand forecasting, according to the annual business goals that enterprises should achieve, converted into the proportion of future market demand growth, basically determine the sales target for the whole year, and finally, the sales target is divided into months according to the proportion of each month in the whole year. Therefore, this sales forecasting method deviates from the real demand of the market. When the sales forecast is converted into production demand, considering the unevenness of inventory and sales, manufacturing enterprises generally add a correction to the predicted value, resulting in a false increase in demand, and the demand information is gradually enlarged. When manufacturing enterprises place orders for material requirements to material suppliers, suppliers often worry about insufficient inventory, resulting in the risk out of stock, and decide to add a correction amount, resulting in demand information being expanded again, resulting in a "Bullwhip Effect".[6]

3.2. Batch ordering method

In the supply chain of fast-moving consumer goods, in general, when the seller orders from his superior supplier, he often does not order according to the actual demand, but on the basis of taking into account the ordering cost, according to a certain amount or according to a certain cycle. Generally, the seller will order from the superior supplier according to the economic order quantity, to not only reduce the cost of ordering, but also reduce the risk out of stock. Additionally, to save costs, suppliers are not willing to frequently deliver goods to sellers, and often require sellers to order in batches or take fixed time points. Despite of this batch ordering model, the seller does not appear out of stock, and generally will have more inventory to cope with market changes. Therefore, the seller increases unnecessary inventory in the actual demand. Therefore, due to the improper batch ordering strategy, the "Bullwhip Effect" is caused.

3.3. Price fluctuations and promotional policies

Due to the fierce competition in the fast-moving consumer goods industry and the low loyalty of consumers, when fast-moving consumer goods companies promote sales or encounter price fluctuations, they will attract a large number of consumers to buy and increase sales. Therefore, if in a certain period, competitors to promote, will reduce sales; when the enterprise carries on the promotion itself, it will show that the sales volume increases in a certain period. Simultaneously, dealers and retailers will also conduct promotions or low-cost activities, resulting in a large number of purchases for inventory to obtain the best interests, resulting in the "Bullwhip Effect".

3.4. Limited supply and short-term game

Fast-moving consumer goods products are generally divided into off-season and peak seasons. In the peak season, due to the influence of production capacity, demand will be greater than supply, and limited supply will occur. For example, the total supply of a product is only 40% of the order quantity. The best way is to supply the dealer according to 40% of the order quantity. However, when dealers know that the demand exceeds supply, to get more quotas, they often

misrepresent their demand and get more products. When the situation of short supply is eased, dealers will immediately reduce their order quantity, so as not to lead to a backlog of inventory and funds. This short-term game behavior caused by limited supply distorts the real demand, resulting in the bullwhip effect.

4. Countermeasures to reduce the "Bullwhip Effect" of Fast-moving Consumer Goods enterprises

From the analysis of the causes of the "Bullwhip Effect", it can be seen that the root cause of the "Bullwhip Effect" is the information asymmetry between supply chain members and the imperfect information sharing mechanism. The dealer enlarges the demand of the retailer, the manufacturing enterprise enlarges the demand of the dealer, and the material supplier of the manufacturing enterprise enlarges the demand of the manufacturing enterprise. The superposition of requirements causes serious distortion of information. Therefore, the path for FMCG enterprises to reduce the "Bullwhip Effect" can be considered from the following three aspects:

4.1. Supply chain upstream and downstream enterprise information sharing

Recently, FMCG companies and retailers have strengthened cooperation and information sharing through electronic systems, thereby greatly reducing the impact of the "Bullwhip Effect". For example, L'oreal requires its retailers to have information networking with them. Through the information platform, L'oreal grasps the retailer's sales and product inventory in real time. When the inventory of a product is below the critical value, L'oreal will take the initiative to replenish the retailer. In this way, the impact of the "Bullwhip Effect" is greatly reduced, and L'oreal also knows which products are best-selling and which products are unsalable, to obtain real market demand, timely adjust market strategy, and production output.

4.2. Improve the accuracy of demand forecasting

There are many methods of demand forecasting, and the results of each forecasting method are different. Although the demand for fast-moving consumer goods fluctuates greatly, it is still possible to find a more suitable forecasting method through different demand forecasting strategies. At present, various software systems have been developed on the market to implement this function, such as the APO (Advanced Planning and Optimizer) module of the SAP system. Simultaneously, when making demand forecasts, it is also necessary to consider the impact of promotion plans and new product plans on sales volume.

4.3. Use effective master production planning system

The scientific master production plan can not only meet the needs of the market and adapt to the changes in the external environment, but also provide the corresponding inventory information and supply situation for the sales department. According to this information, the sales department can better communicate with dealers and retailers. Therefore, the master production plan has become a bridge between market sales and manufacturing. As the baton of manufacturing enterprises,

the main production plan provides sales guidance for upstream distributors and retailers; for the downstream material suppliers, it helps them arrange the material supply, which is in a key position in the whole supply chain. For FMCG manufacturers, how to respond quickly despite market changes is also a way to reduce the “Bullwhip Effect”.

5. Summary

This paper mainly analyzes the supply chain of the fast-moving consumer goods industry. This paper introduces the characteristics of the supply chain of the fast-moving consumer goods industry, analyzes the causes of the bullwhip effect in the fast-moving consumer goods industry; and puts forward some countermeasures for reducing the bullwhip effect in the fast-moving consumer goods industry. Through the use of an effective master production plan, the implementation of the information sharing mechanism to help manufacturing enterprises and upstream and downstream supply chain members to reduce the “Bullwhip Effect”, to make a rapid response to changes in market demand, to create more value.

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