

# ***Research on High-quality Development of Premade Food Industry from the Perspective of Supply Chain Management***

## ***–Take Freshippo as an Example***

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**Abstract:** In recent years, with the acceleration of people's pace of life, the concept of premade food continues to be hot, the premade food industry has developed rapidly as well as the market scale has expanded. Supply chain is a crucial link in premade food industry chain. The proper supply chain management is of great significance to the high-quality development of the precooked dish industry. At present, there are still a series of challenges and deficiencies in the supply chain management of the prepared dish industry. Perfect food safety supervision system, sinking cold chain logistics network and intelligent supply chain management have become the focus of sustainable development of this field. This paper selects Freshippo as the research object, studying the challenges and development opportunities faced by the current premade food industry in the supply chain management through the case analysis method, and then proposes corresponding supply chain management optimization countermeasures to solve these problems, aiming to help the healthy and vigorous development of the premade food industry.

**Keywords:** premade food, Freshippo, supply chain management.

## **1. Introduction**

Premade food is a new "blue ocean" industry that has developed rapidly in recent years. It has a long industrial chain, wide connections and high technical requirements, which is a new quality productivity of agricultural industry upgrading. However, behind the rapid development of this industry, there are still some hidden risks. The supply chain is one of the important influencing factors. Therefore, the optimization and construction of the supply chain management system is extremely important to the high-quality development of the premade food industry. At present, there are still some challenges and deficiencies in the supply chain management of the premade food industry. This paper mainly adopts the case analysis method and selects Freshippo, a benchmark enterprise in the premade food industry, as the research object to analyze its effective measures in supply chain optimization management and its positive impact on the development of the premade food industry. Then provide basic management ideas and experience for other enterprises facing supply chain risks, and help the high-quality development of the premade food industry.

Up to now, most researches on supply chain management in China have focused on other industries such as manufacturing industry, the number of researches on supply chain management of premade food industry is very limited. This paper can enrich and supplement literatures in related fields, which own certain theoretical value. At the same time, premade food enterprises are the main force for the vigorous development of this industry. A sound supply chain management system is conducive to helping them reduce costs, improve product quality as well as enhance their own operational efficiency. Therefore, this paper also provides effective reference experience for premade food enterprises to improve market competitiveness, which has plenty of practical value.

## **2. The Main Problems in the Development of Premade Food Supply Chain**

With the acceleration of the pace of modern life and the diversification of consumer demand, premade food has gradually become the focus of attention. iiMedia Research data show that the size of China's premade food market in 2022 is 419.6 billion yuan, and it is expected that the market will maintain a relatively high growth rate in the future, which will reach 1072 billion yuan in 2026 [1]. However, several problems have been exposed behind the rapid development of the industry, and the supply chain management of premade food is still facing many challenges.

### **2.1. Food Supply**

With the improvement of people's living standards, consumers' requirements for premade food are not only convenient, but also pay more attention to whether the dishes are nutritious and healthy, the taste is fresh and authentic as well as the types of dishes can be more abundant, which also puts higher requirements on the production and processing of the premade food industry. Due to the late start of China's premade food industry, the coverage of its supply chain standardization application needs to be further strengthened. At present, most of the premade food enterprises are still facing some challenges inherent in the traditional agricultural supply chain, which is mainly reflected in two aspects. First and foremost, the standardization of the procurement process is a little lower. Since the farmers are more dispersed, it is difficult to form a unified acquisition standard. Another thing is that, there is no unified quality monitoring mechanism and process monitoring system for production and processing [2]. Non-standard production and processing will directly affect the quality of the final product, which will lead to food safety problems. Therefore, it is urgent to work out this problem.

### **2.2. Cold Chain Logistics**

The term cold supply chain is a particular supply chain whose processes and activities ensure control of temperature for the perishable food products [3]. Cold chain transportation is an important link to ensure the safety and quality of premade food. Now there is still a certain gap between China's cold chain circulation rate and that of developed countries. Due to the insufficient cold chain logistics level of fresh agricultural products and the limited ability of cold chain logistics facilities to cope with seasonal changes, it is difficult to guarantee the quality of premade food in the transportation process and may cause the large circulation loss. In addition, cold chain logistics refers to a system in which perishable food is always in a prescribed low temperature environment from production to sale. Compared to normal temperature logistics, cold chain logistics requires continuous low temperature maintenance, complex management as well as high special requirements for temperature, humidity, and sanitary environments. Therefore, the cost of cold chain logistics is significantly higher than that of ordinary logistics [4]. Premade food has a short shelf life and high requirements for preservation, which requires large-scale cold chain system support. Factors such as high logistics costs and product freshness requirements restrict the distribution routes of enterprises' products, making it difficult for

premade food to satisfy the different eating habits and tastes of residents in different regions of China, thus limiting the further development of premade food enterprises.

### **2.3. Information Management**

The need for transparency in the food supply chain is rising as stakeholders from production to consumption demand higher levels of sustainability, food quality, and food safety [5]. Nowadays, the wide application of digital technology has greatly improved the operational efficiency and transparency of the supply chain. However, the traditional fresh agricultural product supply chain system involves many complex subjects and links, and it still has a series of problems such as low concentration across the upstream, midstream and downstream, slow market response as well as serious information silos. These problems lead to the difficulty in tracing the information of agricultural raw materials, low collaborative efficiency among all links of the supply chain and the quality of premade food materials cannot be well guaranteed. How to break through numerous obstacles and develop a good smart supply chain is also a difficult problem faced by the premade food industry.

## **3. Case Study on Supply Chain Management of Freshippo Premade Food**

### **3.1. Brand Introduction**

Freshippo is China's first new retail platform driven by data and technology. In recent years, Freshippo has paid more and more attention to premade dishes. In April 2023, it added the premade food department to the first-level department. In May 2023, it joined hands with 13 industrial chain companies and 3 universities to establish the premade food ecological alliance in Shanghai, to promote the development of the industry with the concept of "production - learning - research - marketing". In 2023, Freshippo was selected as the top 10 of China's top 100 premade food manufacturers. With the continuous expansion of the premade food market, Freshippo will undergo major changes in the category structure in the future.

### **3.2. Current Situation of Supply Chain Management**

#### **3.2.1. Procurement and Production Management Status**

Freshippo is in a relatively downstream position, which belongs to retailers. In order to get more cost-effective products and establish a sound supply chain system, it continues to expand upstream, optimize supplier relations and procurement patterns, strictly control production and processing processes, innovate prepared dishes to create their own differentiation advantages.

Freshippo conducts strict screening and audit on the suppliers of premade food to ensure that the suppliers have qualified qualifications and reputation. At the same time, it maintains a long-term and in-depth cooperative relationship with top raw material suppliers in the field of agriculture, forestry, animal husbandry and fishery, aiming to directly obtain fresh, safe and high-quality premade food ingredients. At present, Freshippo has signed a number of agricultural direct harvesting base. Nearly one-third of its fresh commodities come from strategic cooperation bases, covering fruits, vegetables, meat, eggs, seafood and other major categories. With the continuous expansion of the base, the proportion of direct mining fresh will continue to grow. This collaborative mechanism ensures the quality and supply stability of premade food raw materials. At the same time, it achieves a win-win situation while improving its competitiveness.

The central kitchen factory is a major feature of Freshippo 's self-built supply chain center, and it is also the necessary way to scale the production of premade food. The large-scale central kitchen

factory established by Freshippo not only makes the research, production and transportation lines of its premade food more complete, but also make the production and processing links become more standardized, which greatly improve the efficiency of updating and promoting premade dishes.

In order to ensure the quality of products, Freshippo has established a strict quality control system, requiring suppliers to provide source proof and quality inspection reports. Besides, it also regularly conducts quality monitoring and sampling inspection of their premade food products. For unqualified goods, it will promptly remove it from the shelves, to ensure that consumers buy qualified products.

In recent years, based on the insight of market demand and the needs of different consumer groups, Freshippo has made plenty of efforts around the dimensions of "delicious" and "technology". First and foremost, it works with the head central kitchen to standardize the production of premade food; Besides, it cooperates with colleges and universities with advanced food technology patents to solve problems such as biological preservation, taste restoration degree and technological innovation; It also works with well-known small household appliance enterprises to develop new premade food tailored according to the latest cooking trends [6]. Through continuous innovation and reform, Freshippo strives to break the dilemma of market homogeneity and make premade food taste richer and with higher quality.

### 3.2.2. Logistics Management Status

In the new retail environment, Freshippo's logistics system is gradually mature. Its logistics network scope continues to expand, logistics capacity and distribution efficiency constantly improve. Efficient and reliable logistics is an important basis for Freshippo to become a pioneer in the industry.

Freshippo has a whole-process cold chain distribution system from the source to the consumer's home. Its cold chain logistics system can precisely control the temperature, humidity and indicators of the goods, ensuring that the prepared food remain fresh, healthy and high-quality during transportation.

Since most premade food has a short shelf life and easy to cause losses, logistics distribution efficiency is the core competitive point of the industry. Freshippo has an efficient logistics distribution system. It uses an advanced warehousing and distribution system to send products from the central warehouse to each store through an intelligent distribution system, which achieves fast distribution and timely replenishment. At the same time, Freshippo also actively cater to the immediate needs of customers, it provides delivery within three kilometers in half an hour and within five kilometers in one hour to consumers' homes. This kind of fast distribution mode has several benefits, including short transportation route, low cost and high distribution efficiency.

Using environmentally friendly packaging helps lessen the effects of logistics and transportation on the environment [7]. The cost of traditional fresh B2C consumables is higher. However, Freshippo, as a representative of new retail, insists on the new model of non-carton distribution and store-warehouse integration, which eliminates solid waste such as cartons and tape in the distribution link and realizes the recycling of ice packs and thermal insulation foam boxes. These measures have greatly reduced transportation costs, energy consumption and carbon dioxide emissions, which make positive contributions to the cause of environmental protection, achieved green logistics and sustainable development.

### 3.2.3. Information Management Status

Freshippo is a brand owned by Alibaba and has unique advantages in information management. With Alibaba's e-commerce platform and global coverage of big data capabilities, Freshippo has built a highly integrated and efficient supply chain network, giving it significant benefits in commodity

procurement, storage, logistics, distribution and other links, and realizing information sharing in all aspects of the premade food supply chain.

Freshippo has applied big data and artificial intelligence in multiple scenarios. With its unique free satellite and big data system, Freshippo has successfully achieved efficient real-time tracking of logistics information. This not only makes it easier for food buyers, logistics workers and Freshippo's store staff to check the situation of premade food in a timely manner, but also significantly improves the operation efficiency of goods. In addition, the big data system can also collect and analyze massive sales data and consumer behavior data, which make Freshippo predict the demand and sales trend of prepared dishes accurately and optimize the procurement strategy and inventory management better. It is worth mentioning that Freshippo uses advanced artificial intelligence technology to identify and manage food safety risks so that they can ensure the quality and safety of premade food.

Freshippo is committed to providing customers with a good consumption experience through digital technology. It has actively promoted the application of mobile payment and unmanned cash register technology. Consumers can select goods and complete payment through mobile app. At the same time, they can also use technology such as face recognition to carry out unmanned cashier in the store, which greatly improves the convenience and speed of checkout. Freshippo also provides a medium for consumers to give feedback information. Users can give feedback on their shopping experience on its exclusive app. Retailers and suppliers can receive feedback from users through the platform, so that they can adjust the needs of users in a targeted way and constantly optimize the premade food to meet the needs of consumers.

#### **4. Optimization Measures for Supply Chain Management of Premade Food**

Nowadays, opportunities and challenges coexist in the premade food industry. As a pioneer in the premade food industry, the case study of supply chain management of Freshippo has positive reference significance for the sustainable development of prefabricated food enterprises and the high-quality development of the premade food industry. In view of certain problems existing in the current industry, the following optimization measures are obtained as a reference.

##### **4.1. Optimize the Supply chain Relationship, Establish a Sound Supplier Management System**

In Freshippo's supply chain, suppliers play a crucial role in ensuring the stable operation of this company. Therefore, premade food enterprises should establish close cooperation with trusted suppliers to ensure the stable supply and quality control of raw materials. At the same time, in order to ensure that suppliers can deliver on time and with high quality, prefabricated food enterprises should also carry out regular evaluation of suppliers and distribute orders reasonably.

##### **4.2. Optimize the Procurement and Production Mode, Guarantee the Quality and Safety of Premade Food**

Recently, providing accessibility to qualified and healthy foods and food safety has become an ever-increasing concern [8]. This still has been the focus of the premade food industry. Food procurement and processing is an important part in the production of prepared food, which is directly related to product quality and cost control. Therefore, premade food enterprise should firstly fully consider the market demand, food procurement, production process and other factors, develop a reasonable production and inventory management plan, which can reduce inventory backlog and product unsalable. Besides, they are supposed to formulate strict procurement standards as well as adopt a unified quality monitoring system and process monitoring system in the production and acceptance links to ensure the freshness and safety of premade food coexist in every link. Moreover, premade



food enterprises with a certain scale and economic strength can also establish their own central kitchen. Cooperate with universities and enterprises to develop new products is an excellent choice which can meet the market demand and promote the production of prefabricated dishes to be more standardized and intensive through a more scientific and efficient model.

#### **4.3. Establish a Sound Sustainable Cold Chain Logistics System**

Cold chain logistics is an important part of the construction of premade food supply chain system. At present, the prepared dish industry has made many effective breakthroughs in cold chain logistics. However, it still faces several difficulties. The high cost and limited cold chain technical facilities are the factors that restrict the development of cold chain logistics of premade food. Thus, premade food enterprises should establish a sound sustainable cold chain logistics system. The first way is to optimize transportation routes, design efficient distribution routes, reduce transit links, and reduce transportation time and costs. Secondly, it is necessary to constantly update the technology and equipment of the cold chain, introduce intelligent scheduling and distribution system, achieve automated distribution and real-time temperature monitoring and ensure the stable quality of premade food. Thirdly, these enterprises need to promote green packaging and green transportation methods to reduce the impact of logistics on the environment.

#### **4.4. Strengthen Digital Empowerment, Build Resilient Supply Chains**

With the development of science and technology, the digital and intelligent level of the supply chain in various industries has been continuously improved. However, since Chinese premade food industry started late, it still faces the problem of low information transparency in the upstream, midstream and downstream. Therefore, premade food enterprises should actively establish information sharing and communication mechanisms. First and foremost, it is essential to build an information sharing platform to achieve real-time update and sharing of data in each link. The second way is to introduce advanced information technology, such as blockchain technology, sensing technology. These technologies can help enterprises to improve the efficiency of information processing and transmission and better realize the information traceability and quality detection of products. In addition, it is necessary to strengthen the communication and cooperation with suppliers, manufacturers, sellers and customers, which can solve the problems in the collaborative process more quickly and accurately as well as ensure the quality of premade food.

### **5. Conclusion**

The essence of fresh dishes industry competition in the future lies in supply chain competition, so proper supply chain management is of great significance to the high-quality development of premade food industry. At present, the development of prepared dishes in China is still in the initial stage and there are tons of challenges on the way to build the supply chain of premade food. As a pioneer in China's new retail industry and a leader in the prepared dish industry, Freshippo's efficient supply chain management model has strong reference value. Through cooperation with farms, quality control, innovative formulations, cold chain logistics, optimization of distribution and storage systems as well as the application of big data and artificial intelligence, Freshippo has optimized the whole process from raw materials source to consumer, providing high-quality premade food products. All signs show that the market space of premade dishes in the future is huge, but prepared food enterprises want to achieve their own unique competitive advantages, they must work hard in three aspects: food safety and innovation, logistics as well as intelligent management. It is believed that with the development of economy and the continuous progress of technology, the supply chain management system of China's premade food will be more and more complete to better satisfy people's growing

needs for a better life. The research results of this paper are conducive to improving the supply chain management level of this kind of enterprises and promoting the high-quality development of the premade food industry. However, there are still some limitations in this study. As it is difficult to obtain the existing data in the premade food industry, the research results may not be in-depth enough. Further improvement is needed in future study and life.

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