

Research on the Supply Chain Strategy of Freshippo in the Context of Epidemic

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Abstract: Since the end of 2019, the outbreak of COVID-19 has had a severe impact on the economy and people's lives. In this paper, Freshippo was selected as the research object to discuss the problems and optimization strategies of its supply chain in the context of the epidemic, to provide reference for supply chain management of fresh food e-commerce enterprises. The research methods used in this paper are literature review and field research. The epidemic has brought historic opportunities to the whole fresh food e-commerce industry represented by Freshippo, but also put forward higher requirements for the efficiency and flexibility of the supply chain. The fresh food e-commerce industry should optimize supply chain management for "improving response efficiency" and "coping with epidemic risk", improve emergency support capacity, ensure freshness of goods and reduce wastage, and share supply chain costs.

Keywords: epidemic, fresh e-commerce, supply chain, digitalization, cold chain logistics

1. Introduction

The epidemic has improved people's consumption awareness of fresh e-commerce, brought rare opportunities to the fresh e-commerce industry, but also posed a challenge to its supply chain capacity. At present, the academic research in this field is mainly focused on the following aspects: the impact of the epidemic on the fresh e-commerce industry, the advantages and disadvantages of fresh e-commerce using different supply chain models, the problems and countermeasures of cold chain logistics in China, etc. "Study on the impact of COVID-19 on the development of fresh e-commerce and countermeasures" believes that the epidemic has brought high growth to fresh e-commerce, but it will also cause the industry to accelerate reshuffle, and enterprises with supply chain advantages will eventually win. These studies provide the basis for this paper. This paper chooses Freshippo as a case and mainly studies how the fresh food e-commerce industry can optimize its supply chain management under the impact of the epidemic, so as to better grasp opportunities, deal with uncertainties, and improve operational efficiency. The perspective of this study is innovative and has strong practical value.

The research methods of this paper are as follows:

The literature research method involves reading through a large number of reference materials, collecting relevant information, and trying to find authoritative and universal evidence and reference materials.

Field research method: The author visits Freshippo's stores in Qingdao and understands the processes of procurement, transportation, storage, and distribution through field observation and oral testimony of the clerks, so as to prove the authenticity of the information collected.

Freshippo is taken as an example because it's a leading enterprise in the fresh food e-commerce industry, and its business concept and practice of supply chain management have always been at the leading level in the industry. The study of opportunities and problems brought by the epidemic to Freshippo, its advantages and disadvantages reflected in supply chain management, and measures and suggestions on how to optimize supply chain management are typical and of strong reference significance for the whole industry. The problems and countermeasures of its supply chain management under the epidemic situation are typical of fresh e-commerce enterprises. Its advantages in supply chain and strategy optimization can serve as a model for other new e-commerce businesses. The study of this paper will promote the healthy development of the e-commerce industry, ensure the daily life needs of the people, and improve the level of supply chain management in China, which is of great significance.

2. The Impact of Epidemic on the Fresh Food Industry

The fresh industry is distinguished by low unit price, high loss, and high cold chain distribution costs. It is an industry with high requirements for supply chain efficiency. It can be said that the supply chain is the lifeblood of fresh industry. The recurrence of the epidemic has brought severe tests to the supply chain of the fresh food industry. On one hand, it faces the opportunity of a sudden increase in order quantity [1]. According to Research data, the market size of China's fresh food e-commerce industry in 2021 is 311.74 billion yuan, up 18.2% year-on-year, and is expected to reach 419.83 billion yuan in 2023 due to the impact of the epidemic. On the other hand, it also faces the challenge of difficult to secure supply and transportation [2]. There are no goods for orders, the types of goods are in short supply, and the time limit of distribution cannot be guaranteed. The problems caused by the failure to buy, slow delivery, and stale also bring a lot of inconvenience to people's lives. During the epidemic prevention and control period, residents' demands such as guarantee of supply of vegetable basket and safe distribution of raw food materials without contact have promoted the transformation and upgrading of the fresh food business.

3. Supply Chain Model of Freshippo

Freshippo is a new retail platform under the Alibaba Group, which is driven by data and technology. Its products are mainly fresh, supplemented by FGCG products and daily necessities. Customers can either experience their purchase in the store or place an order on the Hema App, which is quickly delivered to their door within 3 kilometers of nearby. The brand focuses on "Daily fresh", which enables consumers to buy fresh goods at any time and brings people a "delicious life".

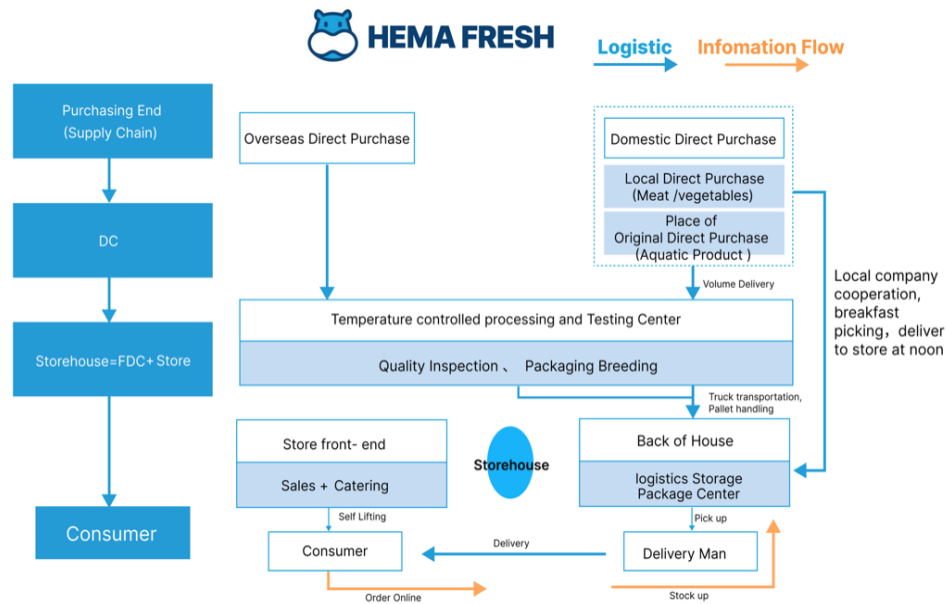


Figure 1: Freshippo's supply chain model.

Freshippo's supply chain is a decentralized and distributed network, roughly divided into four layers (as shown in Figure 1), namely purchasing end(supplier)—DC (processing center) —store—consumption. At the purchasing end, Hema adheres to the global direct purchasing mode and carries out both origin direct purchasing and local direct purchasing through the “buyer system”. In the DC setup, each region has a large processing and testing center to store fresh goods transported from the original place. According to the blue Whale TMT channel, Hema has set up more than a dozen processing centers and 4 seafood and aquatic product temporary centers in 2019[3]. Hema stores are based on the model of front stores and back warehouses. Each store is a warehouse, and big data analysis is used to ensure that inventory is not overstocked to the maximum extent. DC distributes goods according to the needs of each store, while the distribution end improves efficiency through data analysis and intelligent equipment to ensure the 30-minute delivery commitment. Freshippo's supply chain is characterized by digital management of the whole process with the help of Ali's powerful digital capability to ensure the efficient coordination of logistics and information flow.

4. Amplifying Freshippo's Supply Chain Advantages

During the epidemic period, Freshippo insisted on no closing and no price increases online and offline [4]. During the Spring Festival of 2020, Freshippo ushered in the double growth of online and offline. Freshippo's new registered users reached 11.88 million, and the number of orders increased 220% year on year, 2.8 times that of the previous year.

4.1. Demand-oriented Supply Chain Design Reducing the Risk of Market Fluctuation

The traditional supply chain model is dominated by the supplier, but Freshippo does it from the customer's needs to do reverse supply chain. Hema stores' procurement and distribution are based on customer demand as the guidance. They predict the consumption habits of the region based on the collection of sales data. Each store predicts and decides the carry out of the next day according to the sales data. Freshippo's supply chain model is a typical feature of today's “new retail.” Its advantage is that it can more accurately reflect customers' demand to the purchasing end, avoid stock explosions

and shortages to the greatest extent, and thus effectively deal with the risk of demand fluctuations caused by the epidemic, reflecting a certain degree of supply chain flexibility.

4.2. Direct Purchase Mode Ensuring the Control of the Supply of Goods

Compared with the ordinary supply mode, the direct purchase mode eliminates the dealers at all levels in the middle and directly starts the packaging and transportation from the source, which saves the cost, ensures the quality, greatly reduces the loss of goods, and ensures the freshness of products. Hema was able to stay open and raise prices during the epidemic, thanks to its unique direct purchasing mode [5]. Hema has established its own set of supplier standards. Through the “Direct Purchase From Origin”, Hema investigates and selects suppliers of origin according to this standard, and reduces the transportation distance as far as possible on the premise of ensuring strong quality and supply efficiency for suppliers. In this direct mode, Hema’s control ability ensures that it is less affected by market price fluctuations.

4.3. Pre-position Mode Improving Customer Response Speed

Hema’s “front store and back warehouse” model has shown obvious advantages in the epidemic. Its physical stores have designed warehouse shelves, and the goods space and inventory are linked in real time. In the offline sales mode, the physical stores are standard physical stores, while in the online sales mode, the physical stores are standard warehouses. The warehouse is close to consumers, and transportation does not need to cross different cities, which greatly reduces the impact of epidemic control. Moreover, the distance of distribution within the city is also short, which greatly ensures the response speed of customers.

4.4. Strong Digital Capability Improving Supply Chain Efficiency

During the epidemic period, the order volume of Hema stores reached 10,000 at its peak, and Hema was able to sustain the surging order volume and customer flow thanks to its powerful digital capability. To cope with the shortage of staff caused by the epidemic, Hema took the lead in launching the mode of “shared staff”. The reason why “shared staff” can take up the post quickly is that the intelligent system in the store greatly reduces the requirements of employees’ working skills [6]. Freshippo employs Internet of Things, big data, artificial intelligence, and other technologies to build a comprehensive set of automated digital systems in DC, stores, and distribution links that can be identified and controlled by staff via equipment. It is simple, efficient, and has a low error rate, which plays a key role in the stability of supply chain during the epidemic. It also guarantees customers’ consumption experience of the fresh quality and service timeliness.

5. The Impact of the Epidemic Exposing the Shortcomings of Freshippo’s Supply Chain

5.1. Freshippo’s Supply Chain Lacking Emergency Preparedness

Freshippo’s supply chain design works well under normal circumstances, but after the outbreak of the epidemic, production capacity fell far behind demand, especially the human-dependent process, which became a short-board, resulting in great challenges to the stability of its supply chain during the epidemic [7]. Although several thousand are provided through “shared employee” partnerships, there is a shortfall of 50,000 at its peak. Supply chain elasticity is one of the important indicators to measure the quality of the supply chain. The outbreak reminded fresh food companies, including Hema, of the need to establish an emergency supply chain assurance mechanism to respond quickly and continuously to sudden changes and ensure that normal operations can be restored as soon as possible after the impact of internal and external risks.

5.2. Insufficient of Freshippo's Cold Chain Logistics Capacity

Meat, poultry, and fruits and vegetables have relatively high requirements for fresh preservation [8]. Freshippo mainly adopts "two-stage" half-journey cold chain transportation, that is, refrigerated transportation is adopted between cities, and the end transportation is distributed in the way of thermal preservation. In addition, the impact of the epidemic extends delivery times and the terminal transportation of Freshippo lacks the guarantee of the cold chain. As a result, the goods delivered to customers are not fresh enough, which also reduces customers' consumption experience and has a negative impact on the brand "Daily fresh".

6. Suggestions on Optimizing Freshippo's Supply Chain Strategy in the Context of Epidemic

6.1. Establishing a Traceability System

The epidemic has increased consumers' demand for safe and healthy food, and the epidemic prevention and control requires businesses to have a complete information flow from the whole process of picking, packaging, transportation, storage, and distribution, which requires digital and intelligent means, and this is Hema's advantage. For Hema, it is necessary to establish a quality standard system for fresh products with unified standards and traceable products, strictly control the sorting, packaging and transportation of products, use Internet technology to implement product traceability, so that consumers can scan the code to understand the whole process of products from growth, maturity, processing and distribution, and establish an image of excellent quality, green and safety in the hearts of consumers.

6.2. Adjustment of the Supply Chain Structure

Hema MINI's strategy is to expand its stores in the second and third tier cities. Hema should adjust its supply chain structure simultaneously with this strategy. For neighboring cities with relatively small demand, central logistics warehouses can be established to implement the storage mode of central warehouses and make full use of their digital advantages to provide unified distribution services for the covered areas. In procurement, a single supplier is also used to supply several nearby cities, thus strengthening bargaining power with upstream suppliers. Freshippo should make full use of their quality control ability, the bargaining power of upstream suppliers, continuously improve and strengthen the ability of cold chain logistics, especially the use of established health-fresh brand image, development for high-end consumer groups in the boutique supermarket convenience stores, upscale communities, and high-quality catering customers such as hotels, by exporting their own goods, brands, and supply chain capabilities to them. So it can share its supply chain costs wasted due to insufficient sales volume, and it can improve its bargaining power and strengthen its control over the supply chain with the increase of purchase volume and material flow.

6.3. Establishing Emergency Safeguards and Improve Resilience of Support Chain

Hema should establish a plan to learn from the lessons learned during the epidemic, further strengthen its own digital capabilities, and begin as soon as possible to make large-scale use of automation equipment to replace manpower, reduce the need for manpower in all processes, and quickly improve the capacity of processing centers nationwide. At the same time, rookie logistics mode, using their own advantages, digitally strengthen the cooperation and collaboration with industry supply chain and supply chain cooperation between the middle and lower reaches of the main body. The fresh build partnerships through various channels, to promote information sharing and complementary

advantages, enhance the flexibility of fresh agricultural products supply chain ability and buffering capacity.

6.4. Improving the Cold Chain System

Cold-chain construction requires a lot of capital investment, and its construction cycle is fairly long. Hema can take three steps to improve its cold chain capability. Firstly, expanding their cold-chain facilities in the “center of origin-cold storage” and in the “city of cold storage-store-user,” both of which have their own cold-chain distribution capabilities to maintain response speed. Secondly, the use of third-party cold chain capacity in the “central cold store-urban cold storage” section of logistics can use the third-party cold chain capacity as a supplement; Thirdly, striving for government support to increase the construction of cold chain infrastructure in the fresh wholesale market, fresh production base or developed transportation, transportation advantage coverage of the construction of the central warehouse, the combination of the central warehouse and the front warehouse layout, to achieve cold chain coverage of the whole product [9]. China’s overall cold chain capacity is lagging behind, resulting in the waste of about 130 million tons of vegetables and 12 million tons of fruit, with a total value of at least \$10 billion every year due to an imperfect cold chain system. The industry standard of the cold chain and the layout box route design of the online store should be unified planning and increased investment by the government, so as to form a sharing and synergistic effect. The state is also aware of this problem and has strengthened the construction of cold chain infrastructure in the whole society through policy guidance [10]. In April 2020, the Ministry of Agriculture and Rural Affairs issued the Notice on Further Strengthening the Construction of Cold Chain Facilities for Agricultural Products Storage, which increased policy support to promote the construction of cold chain facilities for fresh products and standardized process management. In November 2021, General Office of the State Council on printing and distributing the “fourteenth Five-year” cold chain logistics development plan and notice, to strengthen the planning and construction of national cold chain logistics put forward clear objectives and measures. Fresh enterprises should take advantage of these policy dividends to improve their cold chain capacity.

7. Conclusion

The impact of the epidemic on Freshippo’s supply chain is universal and typical in the whole fresh food e-commerce industry. The advantages and disadvantages of Freshippo’s supply chain under the epidemic situation, as well as the strategic suggestions for its supply chain optimization proposed by the author, are worthy of reference and reference for all companies in the same industry. The author suggested that fresh e-commerce enterprises focus on three aspects of supply chain management optimization. Firstly, shorten the supply chain, reduce the “bullwhip effect”, and improve the flexibility and coordination of the supply chain. The second is to strengthen the cold chain capacity building, ensuring the quality of fresh produce and reducing losses. The author also calls on the government to strengthen the construction of social cold chain logistics network, formulate guiding policies to encourage social capital to participate in cold chain investment, and quickly improve the capacity of social cold chain logistics. Whether the optimization suggestions proposed by the author for Freshippo’s supply chain can be widely applied to small and medium-sized fresh food e-commerce enterprises needs to be further studied in combination with cases. In the follow-up, the case study of small and medium-sized power enterprises may be selected to study how their supply chain has been hit under the epidemic. Because of their business scale, they can learn from the advantages of the Freshippo supply chain, and whether their cold chain storage and transportation are more dependent on a third party. These issues can be supplemented in the follow-up study.

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