

Analysis on Pre-warehouse Mode of Fresh E-commerce Dingdongmaicai under the Background of New Retail

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Abstract

As a new retail mode of fresh e-commerce, Dingdongmaicai's pre-warehouse mode provides rich and high-quality products and services through digital management, which is mainly reflected in the following aspects: it pioneers the industry standard of "29 minute delivery to home", which more caters to users' consumption demands. It continuously expands the number of front-end warehouses and rapidly expands the scale. The main source of goods is directly sourced from the origin, with a wide variety of fresh products with high prices. Through the construction of cloud warehouse, it realizes the intelligent inventory allocation of the whole platform. The selection focuses on the cooking needs of users to create a one-stop shopping platform. In addition, in order to achieve long-term development, the pre-warehouse mode of Dingdongmaicai still needs to guard against the risks of food safety and deals with the risks of intensified competition.

Keywords

New Retail, Dingdongmaicai, Pre-warehouse Mode

1. Introduction

New retailing is a new retail model in which enterprises rely on the Internet to upgrade and transform the production, circulation and sales process of commodities by using advanced technical means such as big data and artificial intelligence, so as to reshape the business structure and ecosystem, and deeply integrate online services, offline experience and modern logistics. In 2016, the general office of the State Council issued the opinions on promoting the innovation and transformation of physical retail (GBF [2016] No. 78), which defined the guiding ideology and basic principles for promoting the innovation and transformation of physical retail in China. Under a series of favorable policies to promote the development of new retail, the market scale of China's fresh e-commerce industry has expanded rapidly in recent years. According to the data of the National Bureau of statistics, from 2014 to 2021, the scale of China's fresh e-commerce market jumped from less than 50 billion yuan to 400 billion yuan. The fresh e-commerce business model has also evolved from the traditional e-commerce vertical fresh e-commerce model and the online platform e-commerce model to a new retail mode - Community e-commerce model, mainly including the store warehouse integration model, the front warehouse model and the community group purchase model. According to the data of forward looking Industry Research Institute, the NPs (net recommended value) rankings of fresh home user experience in 2021 are: Platform Based Home > front Warehouse Based Home > "Home + store" e-commerce platform > "Home + store" supermarket chain. It can be seen that the front warehouse is a more satisfactory model for consumers.

2. Overview of Dingdongmaicai pre-warehouse mode

According to the information statistics of the fresh e-commerce industry, the top three MAU of the mainstream applications of fresh e-commerce in China in the second quarter of 2021 were

Missfresh (13.76 million), FRESHIPPO (11.69 million) and Dingdongmaicai(10.96 million), leaping into the first ladder of tens of millions, forming a situation of "three pillars". Among them, Missfresh and Dingdongmaicai business models adopt the pre-warehouse mode. The pre-warehouse mode refers to the e-commerce model in which fresh and FMCG are directly stored and operated in the front warehouse (generally within 3 kilometers) densely built around the community, and the rider is responsible for the last kilometer of distribution. It mainly meets the healthy (good) and convenient (fast) fresh and miscellaneous food needs of consumers in high-speed cities, It can effectively occupy the wallet share of medium and high customer groups with high frequency.

Although Missfresh pioneered the pre-warehouse mode in 2015, after Dingdongmaicai started the pre-warehouse mode in 2017, it further innovated and upgraded the pre-warehouse mode of Missfresh, and its business scale exceeded that of Missfresh, expanding the leading gap. Taking the opportunity of the rising demand brought by the epidemic in early 2020, Dingdongmaicai exceeded Missfresh in terms of business coverage, revenue, number of users, order volume, etc. In 2021Q1-Q3, the total income of Dingdongmaicai and Missfresh is 14.64 billion yuan and 5.55 billion yuan respectively. In March, 2022, the number of MAU for Dingdongmaicai and Missfresh was 42.51 million and 8.59 million respectively. By 2021, Dingdongmaicai has built 1400 pre-warehouses in 36 cities; By 2021Q2, Missfresh has built 625 pre-warehouses in 16 cities every day.

As shown in Figure 1, Dingdongmaicai is positioned as a one-stop fresh daily shopping platform. It is committed to providing users with a fresh consumption experience of quality determination, time determination and category determination through the service mode of direct purchase from the place of origin, pre-warehouse distribution and the fastest 29 minute delivery to the home, and technology driven industrial chain upgrading.

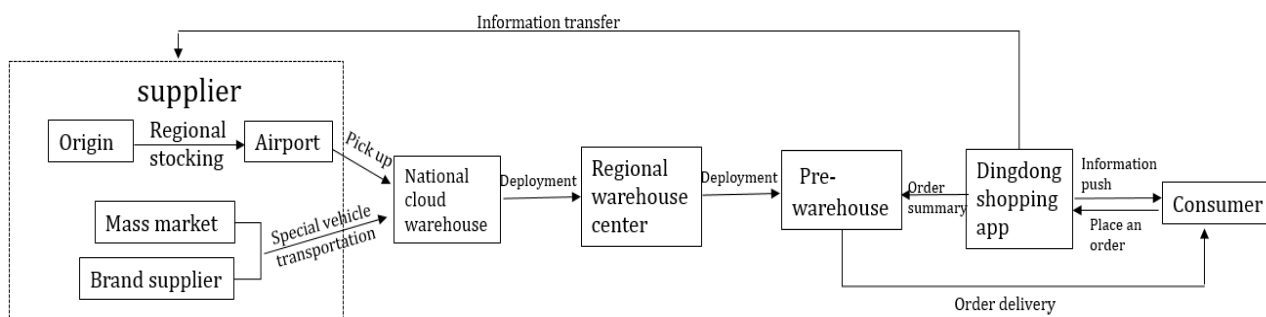


Figure 1: Operation mode diagram of Dingdongmaicai pre-warehouse

3. Advantages of the pre-warehouse mode of Dingdongmaicai

3.1. Dingdongmaicai mainly uses the manpower and capital for the construction of the pre-warehouse

Compared with the integrated store warehouse model, the pre-warehouse model does not need to have the function of attracting customers, so it is more flexible in site selection and has low requirements for site selection. It is usually set within one kilometer from the community but with low rent. Compared with Missfresh, Dingdongmaicai's pre-warehouse adopts the small warehouse mode, which generally covers an area of 200-300 square meters, and 2-3W people share one warehouse. The small warehouse mode is faster to respond to commodity orders, shorter performance time, and the reduction of cost is also conducive to the expansion of the number of pre-warehouses.

In 2017, after the first 300 square meters "big warehouse" was built in Shanghai, Dingdongmaicai opened the supply mode of "total warehouse + pre-warehouse" and initiated the industry standard of "29 minutes delivery to home". After the first large-scale warehouse was built in 2018, 119 pre-warehouses were built around most communities in Shanghai. In 2019, the number of pre-warehouses will rapidly expand to 600 at a rate of 5 times. By May, 2021, the number of pre positions for Dingdongmaicai has exceeded 1000. In terms of regional layout, as of June 2021, Dingdongmaicai has entered 34 cities, including first tier cities including Beijing, Shanghai, Guangzhou and Shenzhen, as well as low tier cities such as Ma'anshan and Xuancheng. The cities are mainly concentrated in East China and spread nationwide.

In the prospectus, Dingdongmaicai will use 50% of the funds raised from the company's IPO to expand the penetration of the existing market to new markets, 30% to enhance the upstream purchasing capacity, and 10% to improve the technology and supply chain system. By the first quarter of 2021, 43% of the company's 3098 full-time employees were engaged in product development, that is, more than 1300 people were responsible for the development of underlying systems and technologies. The company's performance personnel account for 32%, and about 990 people are responsible for ensuring the stable supply of products.

3.2. The pre-warehouse mode of Dingdongmaicai is more efficient and caters to users' consumption demands

Food is the most important thing for the people. China, as the largest country with a large population, has a large-scale consumer group. As a just needed industry for people's livelihood consumption, China's fresh retail market has maintained a steady growth trend. According to the statistics of iResearch consulting, the scale of China's fresh food retail market in 2016 was 4.01 trillion yuan, which has increased to 5.04 trillion yuan by 2020, an increase of 1.03 trillion yuan compared with 2016. With the improvement of people's consumption concept and consumption level year by year, people's demand for fresh products will continue to grow. It is estimated that the scale of China's fresh food retail market will reach 6.8 trillion yuan by 2025. According to iResearch research data, fresh e-commerce users aged 35 and below accounted for 55.7%. The post-80s and post-90s consumers are relatively insensitive to the price of fresh food. They pay more attention to convenience when purchasing fresh food, have higher requirements on the quality of fresh food, and have "faster" requirements on the delivery speed. The pre-warehouse mode of dingdong shopping for vegetables is to grasp the consumption characteristics of the target consumers, which are distributed in the first and second tier cities. The consumer groups are mainly white-collar workers in the first and second tier cities, and the customer unit price is high.

The pre-warehouse mode of Dingdongmaicai is more efficient and instant than the traditional fresh e-commerce for a few days. Compared with the community group buying mode, it can effectively solve the problem of "the last mile", not only improve the quality of goods, but also shorten the time of commodity transportation. It can be said that it has well solved the pain point of the traditional fresh e-commerce in operating efficiency of 30% - 50%. It fully meets consumers' requirements for product quality and delivery time, and high-quality performance experience can improve users' loyalty. The increase of consumers' repurchase rate will help Dingdongmaicai to expand the scale of commodities and improve the operation efficiency.

3.3. Dingdong mainly buys vegetables directly from the origin, with a wide range of fresh vegetables with high prices

In order to solve the problem of unstable supply and marketing of directly mined farmers and unsalable or out of stock of agricultural products, Dingdongmaicai gives full play to the advanced supply chain advantages of "Internet +" and establishes a cloud warehouse model for inventory analysis and prediction based on consumption data. First, it integrates, counts and

forecasts the consumer order information on the dingdong shopping app. The data information is transmitted to the suppliers at the purchasing end. The suppliers at the purchasing end have three sources. The main source is the establishment of origin warehouses from the country's origin of high-quality agricultural products, accounting for more than 85%, so as to control the quality of fresh food from the source; The second source is the mass market and brand suppliers. According to the data released by Dingdongmaicai, in 2020, Dingdongmaicai had 350 direct supply bases for fresh vegetables, more than 600 direct supply suppliers from producing areas, and more than 5400 fresh commodities. The direct purchase of fresh agricultural products accounted for 85%, covering many categories such as vegetables, fruits, aquatic products, meat and poultry. By the first quarter of 2021, Dingdongmaicai has more than 1600 docking suppliers for buying vegetables, 40 processing centers in 14 cities, and more than 12500 SKUs, including more than 5700 fresh food and 6700 daily necessities. This has not only greatly expanded its platform commodity categories, but also reduced the multi-level distribution links of the traditional fresh supply chain, won greater profit space for farmers in upstream production areas and themselves, and also brought more favorable prices to end consumers.

3.4. Dingdongmaicai increases the construction of cloud warehouse, and realizes the intelligent inventory allocation of the whole platform

For a long time, all fresh products have a common feature, that is, the shelf life is very short. With the help of the national cloud warehouse based on consumption data, Dingdongmaicai is to realize intelligent inventory allocation to regional storage centers, sort in regional storage centers, create packaging methods according to different fresh temperature requirements, minimize losses, label and store them, and then convert them into standardized products and send them to the front warehouse. Through digital analysis, make effective recommendations for users and storage conditions, and reasonably configure the goods of each pre-warehouse, which can greatly improve the operation efficiency of each pre-warehouse.

The front warehouse covers 30 core cities in the country, within 3 kilometers of the community, links tens of thousands of families, and can complete the distribution in 29 minutes at the fastest. With the help of a powerful and intelligent logistics and distribution system, the DMS system can track and display the operation nodes of the whole link. Consumers can query the temperature and humidity status of fresh packages they place orders online in real time, and the whole process can be traced. Fresh ingredients, instant delivery, and "goods and others" services have improved consumers' user experience and satisfaction, bringing consumers the best quality experience.

3.5. Dingdongmaicai build a one-stop shopping platform around users' cooking needs

At present, the common practice of most fresh e-commerce platforms is to take fruits with high gross profit and high purchase frequency as the main commodity, and then select high-frequency and online red products according to big data. However, this idea of product selection can not meet the people's demand for three meals a day and one-stop shopping for different dishes. As a result, users rush to buy popular products with good quality and low price on various fresh food platforms, which will not only lead to the phenomenon that popular products are easily out of stock and refunded, but also greatly reduce the user experience and user satisfaction; Moreover, the popular products are only impulse purchases for users. The loyalty of users is not high, the repurchase rate is low, and the user traffic is not completely won by a fresh food platform.

Dingdongmaicai is different from the above selection idea. Instead, it focuses on the cooking of three meals a day. It focuses on vegetables. It not only tries to enrich and comprehensive vegetable categories, but also prepares a complete combination of condiments with vegetable

cooking. Condiments are not only divided into categories, but also further divided under each category according to their functions and usages. For example, beef sauce, tomato sauce, seafood sauce, mushroom sauce, etc. are also classified under the seasoning sauce column to meet the needs of different users' preferences and tastes, so that users can prepare all the raw materials for cooking without leaving home. The humanized commodity combination can improve user satisfaction and increase user flow and stickiness.

According to the company's annual report, dingdong shopping Mau increased from 3.4 million yuan in the first quarter of 2019 to 23.2 million yuan in the first quarter of 2021, with a compound annual growth rate of 161.2%, leading HEMA and daily fresh food. In 2020, dingdong's total orders for vegetables reached nearly 200million, an increase of 111.4% year-on-year. In the first quarter of 2021, the total number of orders was 69.7 million, with a year-on-year increase of 88.4%.

In addition to the fresh food platform, Dingdongmaicai has also established its own brand of prefabricated dishes. At present, more than 1000 SKUs have been distributed to meet the applications of young users in different scenarios in terms of categories. In addition to "Ding Dong ace dish", "Caichangqing", "Ding Dong Da man Guan", Ding Dong has also integrated many private brands such as "Boxing shrimp" and "Ding Dong is easy to eat". According to the data, since last year, the prefabricated dishes bought by Dingdongmaicai have been launched one after another, integrating a variety of tastes and flexible collocation, achieving a 300% year-on-year increase in the sales volume of the whole line of products (unit: portion). In terms of the overall order penetration, the prefabricated dish orders have reached 40%.

4. Suggestions on optimizing the pre-warehouse mode of Dingdongmaicai under the new retail background

4.1. Preventing food safety risks

The word "fresh" of fresh e-commerce is the core factor for the online fresh platform to attract consumers. This "fresh" not only refers to the price and quality of food, but also focuses on the safety and health of food. In March, 2022, according to the information from Beijing Haidian District market supervision and Administration Bureau, Haidian District market supervision and Administration Bureau conducted an administrative interview and filed a case for investigation on March 16 in response to the exposed problems of Dingdongmaicai pre-warehouse, such as passing dead fish off as live fish, changing labels without authorization, and routine disinfection becoming a mere formality. This also led to a sharp drop of 10.82% in Dingdongmaicai's share price on March 17.

The investigation shows that the root of everything lies in the company's strict wastage rate. The headquarters is very strict in the assessment of the site loss rate. In fact, some vegetables, fruits, seafood, etc. have already suffered losses in the process of distribution from the large warehouse to the pre-warehouse, but this part of the losses must be borne by the front warehouse. Once the loss rate exceeds the standard set by the company, the whole site will be fined. However, aquatic products, vegetables and fruits are very easy to be lost during transportation. In the face of such unreasonable company standards, the loss rate required by the company can hardly be achieved under normal circumstances. The grass-roots level can only find ways to operate in violation of regulations.

Of course, the above is not an example. In March, 2022, according to the sampling results of edible agricultural products regularly disclosed by the market regulatory authorities in Shenzhen, Beijing, Shanghai and other places, it was found that many vegetables, fruits and aquatic products sold on Dingdongmaicai had problems such as excessive pesticide residues and heavy metals, which greatly affected consumers' trust in the brand. This not only needs to improve the company's sense of responsibility for food safety, stick to the bottom line of food

safety, and improve the quality of products and services; It is also necessary to improve the internal assessment and performance system of the fresh food platform, and not blindly take the consumption rate as the important or only standard for KPI evaluation; It is more necessary for the company to improve the infrastructure of cold chain transportation, improve the level of technical equipment, improve the supervision system of cold chain transportation, strengthen the establishment and construction of storage and fresh-keeping cold chain, and promote the efficient, safe and standardized development of cold chain transportation and storage.

4.2. Coping with the risk of increased competition

According to Porter's five forces analysis model, the five forces model determines the five main sources of competition - the competitiveness of existing competitors in the same industry, the entry ability of potential competitors, the substitution ability of substitutes, the bargaining power of suppliers and the bargaining power of buyers.

4.2.1. The competitiveness of existing competitors in the same industry is relatively fierce

Although the innovation modes of fresh e-commerce in China are diverse, the market concentration of fresh e-commerce is high. According to the data compiled by the prospective industry research institute, from 2019 to 2021, the top three monthly live users in the fresh e-commerce industry remained the same pattern of daily excellent fresh food, box horse and Ding Dong shopping. However, the differentiation of products sold and services provided by the vast majority of enterprises in the fresh e-commerce industry is still insufficient, resulting in low conversion costs for buyers. In addition, the target customer groups among enterprises overlap seriously, resulting in fierce overall competition in the industry.

4.2.2. The ability of potential competitors to enter is relatively weak

At present, the domestic fresh e-commerce industry has gradually formed the development trend of whole industry connected resources and all channel resources. The operating costs have gradually increased, and the requirements for capital have continuously increased. At present, the competition situation in the whole industry is still fierce. On the whole, the entry barriers of the industry as a whole continue to rise, and the threat of new entrants is relatively weak.

4.2.3. The substitution ability of substitutes is a big threat

The market scale of China's fresh e-commerce industry continues to expand, but the penetration rate of the whole fresh product market is still low, and some platforms can not meet the requirements of consumers for product quality and timeliness. As a result, the traditional offline market is still the main purchasing channel for consumers. At present, the substitutes in the fresh e-commerce industry pose a great threat.

4.2.4. The bargaining power of suppliers is weak

The supply of fresh e-commerce industry is affected by the special attributes of products, so the product premium space is limited. There are many alternative suppliers for most agricultural products, and the bargaining power of suppliers is weak.

4.2.5. Buyers have strong bargaining power

The buyers of fresh e-commerce products have strong bargaining power due to the characteristics of industry competitiveness, special attributes of agricultural products and low degree of service differentiation.

According to comprehensive analysis, Dingdongmaicai's overall market competition is very fierce. From the perspective of the five forces model, Dingdongmaicai still needs to start from its own interior and increase supply side reform. First, with the maturity of the pre-warehouse

mode, the improvement of management ability and the stability of consumption demand, the category and inventory are optimized according to the consumption data within the service scope of the pre-warehouse and the changes of consumers' lifestyle and consumption habits. At the same time, the management ability of the pre-warehouse is continuously improved with the help of digital means to further reduce losses. Second, the "unmanned pre-warehouse" project is introduced to provide intelligent dispatching system and automatic equipment by using the unmanned micro warehouse to complete the whole process of automatic order receiving, sorting, order collection, packaging and handover, so as to provide an integrated solution of software and hardware for the pre-warehouse, reduce labor costs and improve profit space.

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