

# *E-Commerce Supply Chain of Fresh Agricultural Products under the Background of New Retail*

**Jiayi Kong**

*Shenzhen Tourism College, Jinan University, Shenzhen, 518000, China*

**Keywords:** Fresh agricultural products, E-commerce, Supply chain mode, New retail

**Abstract:** In the era of the Internet, the development of fresh food e-commerce is an inevitable trend under the background of constant upgrading of people's consumption habits and consumption structures. The application of the new retail model is the inevitable result of digital technology progress. The supply chain's capability to integrate internal and external resources is an important influencing factor in the development of retailing industry, especially the fresh produce industry. It plays a determinant role in improving the competitive advantages of the fresh produce supply chain in the new retailing model. Based on the current fresh e-commerce platform supply chain mode, this paper draws a comparison with the three core “new retail” fresh food e-commerce platforms in China to analyze the upstream arrangement of shipments, the midstream of warehouse distribution, and cold-chain logistics, the downstream of retail trade. This article discusses the fresh agricultural product supply chain under different new retail models, to provide a corresponding basis for improving the supply chain capacity and promoting the application and development of the new fresh agricultural product e-commerce retail model.

## **1. Introduction**

With the improvement of people's living standards and the increasing demand for various fresh agricultural products, profound changes have taken place in consumer values and lifestyles in the Internet era. Consumers need not only fresh agricultural products themselves, but also more experience in the process of consumption, that is, from the past demand for goods themselves to the pursuit of product quality and service. At present, many enterprises have problems such as high supply cost and unreasonable distribution routes in the supply chain. How to coordinate the relationship between the supply chain organization, storage and distribution, cold chain logistics, retail transactions and other links has become the core factor for enterprises to improve their competitiveness in the industry. Under the new retail service logic, agricultural products e-commerce needs to overcome the problems of low logistics efficiency and poor user experience in the traditional model, and establish a fresh agricultural products e-commerce supply chain model oriented to improving customer experience.

## 2. Research Background

### 2.1 Fresh Agricultural Products under the Background of “New Retail”

“New retail” refers to all activities that apply the advanced ideas and technologies of the Internet, improve and innovate the traditional retail methods, and sell goods and services to the final consumers with the latest ideas and thinking as the guidance. It is not only the simple integration of O2O and logistics [1], but also the integration of cloud computing, big data and other innovative technologies. It includes omni-channel and transcends omni-channel, breaks all boundaries in the past, and contacts consumers with a new look [2]. For the fresh agricultural products market, “new retail” caters to consumers' demand for quality of life and scenario-based consumption experience, and effectively promotes the rapid development of the fresh agricultural products market [3].

### 2.2 E-Commerce Supply Chain of Fresh Agricultural Products

Fresh agricultural products refer to the primary food produced by the agricultural department without or with a little processing, which cannot be stored for a long time under normal temperature, generally including vegetables, fruits, meat, aquatic products and other agricultural and livestock products [4]. The supply chain of fresh agricultural products is an industrial chain formed from the production link to the consumer purchase link with fresh agricultural products as the object [5]. Under the traditional circulation mode, fresh agricultural products need to go through at least four or five circulation links from the field to the table. Because of the many circulation links, the loss rate is high and the circulation cost is high. With the rapid development of e-commerce, the e-commerce model of fresh agricultural products is increasingly popular with online and offline businesses and consumers, and the supply chain is also optimized step by step in the process. But there are also some problems. For example, the main body of the supply chain is diverse, the management is difficult, the supply chain information communication is not smooth, the supply and demand structure is unbalanced, the circulation link is weak, and the cost is high [6].

## 3. Research Status.

To sum up, scholars have done less research on the e-commerce supply chain of fresh agricultural products under the new retail background, and over a long period, the research was conducted based on splitting the main body of the supply chain. Scholars have selected one aspect of supply chain management for in-depth research while ignoring the integrity of the supply chain. In addition, there are few case studies on the e-commerce platform of fresh agricultural products, especially the study of the supply chain of the e-commerce platform of fresh agricultural products in a unified way in various modes, such as home arrival, store arrival, and store and warehouse integration. Based on this, this paper takes the core “new retail” e-commerce platform as an example to analyze upstream supply organization, midstream storage and distribution, cold chain logistics, and downstream retail transactions. The supply chain of fresh agricultural products under different new retail models is discussed respectively, to provide a corresponding basis for improving the supply chain capacity and promoting the application and development of new retail models of fresh agricultural products e-commerce.

## 4. Research Object

Refer to the list of the top ten fresh agricultural products e-commerce brands on Buy.com in 2023. The ranking of the brand list is a large industrial database generated by the credit index and dozens of data statistics and calculation systems. It is based on the enterprise strength, brand honor, online voting, Internet users' word-of-mouth scoring, the enterprise's ranking in the industry, the honor and reward obtained by the enterprise, and is obtained through the collection and analysis of a wide range of data resources through a specific computer model. Based on various factors, the first two fresh agricultural products e-commerce in the list were selected as the object of this study.

## 5. Analysis of Fresh Agricultural Products e-Commerce Supply Chain under the Background of “New Retail”

### 5.1 Yonghui Life

#### 5.1.1 Upstream of Yonghui Life Supply Chain: Multiple Procurement Modes Go Hand in Hand

The product procurement system at the upstream of Yonghui Life Supply Chain is a combination of multiple procurement modes, which can meet the needs of different stores in different regions. A variety of procurement modes include unified procurement, direct procurement, local farmers' market procurement, supplier procurement, and overseas direct procurement. The proportion of direct procurement is more than 70%. At the same time, it has a special research and development center for fresh food procurement. Procurement methods include base procurement, remote procurement, local procurement, wholesale market procurement, etc. In terms of upstream supply, choose to do a good job of specification sorting from the source of origin to improve the distribution efficiency. For each commodity, the production and marketing time shall be marked, and the corresponding clearance discount boundary shall be formulated. At the same time, Yonghui Food Safety Cloud Network is fully used to upload commodity detection to the cloud, realize the traceability of raw and fresh ingredients throughout the process, and ensure “safety on the table”. The procurement system breaks through the restriction of the regional circulation system. Reasonable operation can shorten the product procurement path and reduce the procurement cost while ensuring the product quality.

#### 5.1.2 Midstream and Downstream of Yonghui Life Supply Chain: Warehouse Store Mode

In terms of storage, Yonghui Life Logistics Center is divided into normal temperature distribution center (including transit warehouse) and constant temperature distribution center according to temperature zone, mainly transporting vegetables and fruits, frozen and refrigerated goods. According to the temperature, the logistics center can clean up the damaged fresh products in time, improve the efficiency of fresh transportation, and lay a good foundation for the distribution link. The store-store model can use the backcourt space in the original store to reduce the investment cost of “home” business. At the same time, the store has a relatively complete cold chain, storage and other hardware infrastructure. This mode can maintain the independence and flexible layout and operation of the front warehouse, realize low-cost expansion and replication in different places, and lay the foundation for promoting the omni channel retail strategy.

In terms of logistics mode, there are three modes of distribution: distribution, direct and direct. The direct delivery method is to deliver the goods directly from the origin to the main stores. Both distribution and direct transportation need to pass through the logistics center. Fresh goods are picked again in the logistics center, and then graded and sent to each store. The goods are

transported to the logistics center by the supplier, which can be processed in the warehouse of the logistics center and suitable for fresh distribution, and then uniformly distributed to the main stores by the logistics center. Direct goods are directly delivered to the logistics center by the supplier. Instead of entering the warehouse of the logistics distribution center, the goods are directly delivered to the store. Compared with distribution, there is less access to the warehouse. This method is applied to the goods purchased by Yonghui. For example, Yonghui's self-supporting vegetables, fruits, meat and poultry, and fresh food are basically purchased from suppliers. After some fresh products are purchased by Yonghui, they will be initially selected in the field. The distribution from the logistics center to each store is dependent on third-party logistics. In terms of the last kilometer landing, Yonghui Life Satellite Warehouse allocates its own team to ensure the response efficiency and quality of orders[7].

## **5.2 Pupumall**

### **5.2.1 Upstream of Park Supply Chain**

For pupumall, which is positioned as a full-category operation, the mode of supplier procurement is more appropriate than that of direct purchase from the origin. Pupumall's supply of goods depends entirely on docking suppliers. Therefore, pupumall is very thorough in controlling the penetration of suppliers. Park's unique supplier management system is an important reason for its development and growth. pupumall is young, has no historical burden, and keeps an open mind to suppliers. Therefore, supplier management is very different from traditional retail enterprises. This is reflected in the fact that there is no need for the supplier to pay the passage fee, and the supplier is not required to bear the return and replacement caused by the quality problem of the goods. Based on this situation, all kinds of suppliers have the opportunity and are willing to enter the Park system. Both parties are mutually beneficial and win-win. Due to the convenience of the preferential treatment offered by pupumall to the suppliers, the prices of the goods offered by the suppliers to pupumall are often 30% - 35% lower than the market price. With this kind of discount, pupumall feeds back the profit of the passage fee to the retail price of goods. The price of fresh food on the platform is usually cheaper than that of supermarkets and competitors. Finally, the price performance of Park products was higher than that of competitive products, which attracted a large number of users to continue to use the Park platform.

In addition, pupumall has played a role of transformation and education for suppliers in the development process. Pupumall focuses on the sale of goods, and its fresh products are all standard products. Therefore, it entrusts the processing of fresh products to suppliers, and does not include the processing of fresh products into its own business. For some suppliers with the advantages of origin but no processing capability, Park will introduce the partners with processing capability to cooperate in production.

### **5.2.2 Midstream of Pupu Supply Chain**

The establishment of pupumall Park did not rely on the support of e-commerce giants, and its capital strength and size were far inferior to other competitors of the same kind. Instead of imitating the model of the classic e-commerce of fresh agricultural products, pupumall chose to open a front warehouse near the residential area. In the warehousing phase, the supplier needs to deliver the goods to the city's general warehouse of pupumall, and then Park will transport the goods from the general warehouse to the front warehouse. The front warehouse can cover a distribution range of 1.5 kilometers around, with a wide coverage density, forming a licensed location model and commercial closed-loop, making the coverage density of the front warehouse

far higher than other similar fresh food distribution platforms. Due to the large purchase volume and cost price, the pricing of online platform products is basically the same as that of other platforms, and there are even large preferential subsidies. In addition, pupumall kept the Stock Keeping Unit of the online product of the platform at about 3000, meeting the customers' high-quality and diversified consumption needs, and the reputation effect of pupumall kept rising.

### 5.2.3 Downstream of Park Supply Chain

Pupumall can follow up and analyze users' consumption behavior preferences in real time, and has realized thousands of stores and thousands of faces by using digital technology. In terms of supply chain management, pupumall can determine production based on sales, analyze based on historical sales data and customer consumption habits, and predict the future demand for goods in advance. For example, for a new batch of strawberries in Fuzhou, pupumall can independently call the users with strawberry purchase history in the front warehouse in Fuzhou and push the strawberry promotion information during the afternoon tea to maximize the marketing effect. Even, pupumall can be precise to a certain front warehouse and adjust the commodity structure according to the nearby business district, for example, the commodities near the school district are mainly stationery. Users in different regions can see products and corresponding promotional information similar to their own consumption habits after opening the Park APP, so they place an order.

## 6. Conclusion

Through the research on the supply chain of fresh agricultural products e-commerce platforms, it is found that these platforms have similarities and differences.

The common point is that the new retail e-commerce platform combined with the Internet can effectively improve the circulation efficiency, and this result is due to multiple factors in the supply chain. For example, the e-commerce supply chain in the new retail context is shorter and the loss is lower. The model has few levels of circulation, and has been internalized from an earlier level. The management of transportation and cold chain in each link is more standardized, and the loss can often be controlled below 10%. However, the total chain loss of the traditional fresh food channel is generally up to 30%.

Then analyze the differences. Horizontal comparison of e-commerce of fresh agricultural products in the context of new retail, due to the different characteristics of their own platforms, the ways to achieve the same purpose may be the same, but the specific means are different. For example, Yonghui life and pupumall both implement the buyer system at the upstream of the supply chain. pupumall's buyer system is linked to sales and needs to undertake sales indicators, such as sales volume, consumer feedback, and purchasing stability, as a standard for performance evaluation. The buyer system of Yonghui Life is not only bonus distribution under special assessment, but also equity incentive for buyers. The two platforms operate in different ways, but their goals are the same. They both omit the traditional agricultural product circulation model of agricultural product brokers, product wholesale markets, transportation merchants, and wholesale markets through the buyer system, and the buyer directly completes these complicated steps.

## References

- [1] Shen P. Y., Fan X. C. (2016). *Online retail enterprises' social responsibility behavior and consumer response: A moderating model in the Chinese context*. *China Soft Science*, (03):96-106.
- [2] Zhao S. M., Xu X. H. (2017). *The Meaning, pattern and development path of "new retail"*. *China Business and Market*, 31(05):12-20.
- [3] Dai F., Xu Y. (2020). *Competitive advantages, problems and optimization strategies of fresh agricultural product*

*e-commerce under the background of new retail. Prices Monthly, (02):21-25.*

[4] Peng D. H., Zhang C. X. (2007). *Countermeasures to improve the logistics status of fresh agricultural products. Market Modernization, (13): 105-106.*

[5] Zhou C. B. et al. (2021). *Theory and practice of recycle agriculture in China. Chinese Journal of Eco-Agriculture, 21(01):47-53.*

[6] Wang L. (2020). *Research on the optimization strategy of fresh agricultural products supply chain under e-commerce empowerment. Price: Theory Practice, (01):140-143+175.*

[7] Liu H., Yao Z., Zeng L., & Luan J. (2019). *An RFID and sensor technology-based warehouse center: assessment of new model on a superstore in China. Assembly automation, 39(1), 86-100.*