

Research on Fresh-keeping Development of Supply Chain under the Trend of New Retailing

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Abstract

The proposal and practice of new retail require the upgrading and development of fresh preservation in the fresh supply chain, which has always been the focus of practice and theory. With the development of technology and the distribution pattern of fresh products, the preservation situation of fresh supply chain also keeps changing in order to improve customer satisfaction and supply chain profit. In the context of new retail, we analyze the restricting factors and promoting factors of fresh-keeping upgrading in fresh supply chain, and put forward some suggestions on fresh-keeping according to the practice of new retail.

Keywords

New retail, Fresh supply chain, Fresh-keeping.

1. Introduction

In the era of rapid development of e-commerce and logistics, the real economy still occupies a certain market share because of consumer shopping experience and consumer value perception. In 2016, Jack Ma proposed the term "new retail", indicating that in the future, combined with online shopping, offline shopping and logistics, new retail will be born. At present, domestic and foreign scholars begin to pay attention to the development of new retail, but the theoretical research has just begun, showing the characteristic of practice-oriented theoretical research. Du et al.[1] proposed that new retail is based on the internet and uses advanced technologies such as big data and artificial intelligence to upgrade the production, distribution and sales processes of commodities, thereby changing the format structure and ecosystem. A new retail model that integrates online services, offline experiences, and modern logistics. Zhao et al.[2] believe that the so-called new retail is all activities that apply the advanced ideas and technologies of the Internet, improve and innovate traditional retail methods, and use the latest ideas and thinking as a guide to sell goods and services to end consumers. Although scholars have not yet agreed on the definition of new retail, most of them notice that there is a significant difference between new retail and traditional retail. Most scholars [3] agree that the new retail focuses on the consumer experience and will be deeply integrated online shopping and offline shopping, meet consumer demand with experiential consumption, and will develop along the path of supply chain and resource reconstruction. At the same time, some scholars have begun to explore problems that may be encountered in the development of new retail. For example, Xuan et al.[4] proposed that new retail development will encounter three problems: first, how to choose offline locations for offline stores. Second, how to avoid price competition between products sold online and those sold in physical stores, and finally how to solve the difficulties of consumer recognition in the two sales channels. It is found through research that solving the difficulty of consumer

recognition will cause new retail companies to replace traditional enterprises to gain more market share and possibly obtain higher profits.

In the business activities, many new retail development models are presented, including Amazon's unmanned retail store[5], offline expansion of Internet brands, such as "three squirrels" opening physical stores[6], and the emergence of consumer experience shopping malls such as Hema Xiansheng and Super Species. Among them, Hema Xiansheng, Super Species and other experiential retails have quickly seized the fresh produce sales market in the past two years. As of January 2019, there have been 120 stores nationwide, becoming the new retail leader in the fresh produce field. Consumers also have higher expectations for these companies: faster delivery, fresher fresh products, intelligent service, agile response and so on. Therefore, the fresh preservation work of companies operating fresh products in the context of new retail will also face new challenges. For example, the use of stores as warehouses requires retailers to pay more freshness efforts and operating costs, and the integration of online shopping and offline shopping requires companies to have more accurate data support. Under the new retail background, the focus of the circulation model of fresh products will be upgraded from one-way circulation to two-way interconnection. Combined with the development of modern logistics transportation systems and big data, the time and space distance from "field to table" will be reduced. Therefore, the fresh-keeping of fresh products during the circulation process also needs to be upgraded.

At present, scholars' research on new retail mainly focuses on the definition and development direction of new retail, and quantitative research based on mathematical models is still relatively small. Quantitative research methods are used to study the freshness preservation development of fresh product supply chains under the new retail background. Existing research mainly includes Fang & Yang[7] proposed that under the new retail background, when the price competition mode of the retail industry changes significantly, the revenue sharing contract can coordinate the fresh produce supply chain. [8] studied that different trading mechanisms under new retail will have different impacts on the interests of members of the supply chain, mainly including carbon-free trading mechanisms, carbon trading mechanisms, free quota allocation, and paid quota allocation. Chen et al.[9] studied that under the business model of "online browsing + offline experience + online purchase + offline delivery", the revenue sharing contract mechanism can effectively achieve supply chain coordination under strategic customer behavior. Although there is not much research on supply chain coordination under new retail, "new retail" has been developed on the e-commerce model and has the characteristics of multiple channels, high level of information and high degree of intelligence. At the same time, the academic circles are more mature in the exploration of multi-channel supply chain coordination under the e-commerce model. There are also many researches on supply chain coordination under the development of informatization and intelligence. Therefore, how to improve the preservation effect of fresh product supply chain under new retail can be started from these two aspects. We need to consider the coordination of the fresh product supply chain when researching how to improve the freshness quality of the fresh product supply chain. At the same time, the coordination of the supply chain is a prerequisite for the new retail model to take advantage of its intelligence and agile service response. Therefore, the research on the development of fresh supply chain preservation needs to systematically consider the supply chain coordination under the new retail model. At present, most of the research on fresh agricultural product supply chains considers the freshness of agricultural products. Under the new retail model, in addition to freshness, it needs to be considered in terms of consumer utility and other aspects that can reflect the characteristics of the new retail model. In addition, scholars have noticed the importance of cost sharing for supply chain coordination, but in practice because most companies that are currently following the new retail model are business giants, they have

ignored the issue of cost sharing for developing new retail (such as cold-chain fresh-keeping facilities Equipment purchase and technology use). However, with the development of the industry, some small and medium-sized enterprises have begun to enter the new retail field. If the cost input gap between members of the supply chain is too large, it is easy to oppress suppliers, which will make the supply chain more difficult to coordinate and prevent new retail Advantages of the model.

Therefore, we will analyze the promoting factors and limiting factors of the freshness preservation of the fresh product supply chain from multiple perspectives such as supply chain cooperation, the development of the Internet and freshness preservation technology. Based on this, according to the development of new retail, the fresh retail operation model under new retail is divided into consumer experience-oriented, which is characterized by improving service quality, and a dual-channel type that combines online purchases and offline purchases, which is more convenient for consumers to buy. Further, we propose suggestions for improving the quality of fresh-keeping in the fresh-fresh supply chain based on the characteristics of these two types.

2. Promoting and Restricting Factors of Fresh-keeping Upgrading

2.1. Facilitating Factors

Development of fresh-keeping facilities and Internet technology. In modern enterprises, fresh-keeping equipment such as refrigerated trucks and refrigerators have been widely used. Increased freshness awareness of farmers at the source provides a basis for optimizing freshness of fresh products. The development of sensors and RFID enables the fresh-keeping situation in the transportation and sales process to be monitored at any time, further improving it effectively, making the fresh-keeping work of each node enterprise transparent, and improving the efficiency of fresh-keeping cooperation. Extensive use of various applications, including payments, purchases, within the enterprise and between merchants and users, enables companies to more effectively obtain fresh market information, which can be used to make directional freshness investments and reduce the bullwhip effect. It can reduce the risks brought by each node enterprise by improving its preservation efforts.

Consumer demand for fresh products has been upgraded. With the continuous improvement of people's income levels, consumers have gradually shifted from subsistence consumption to enjoyment consumption, pursuing higher product quality and better service, and reducing the sensitivity to prices, which makes enterprises have greater profit margins to enhance investment and improve the quality of fresh products. Improve the quality of fresh products. At the same time, white-collar workers and other office workers love processed fresh products and home delivery services on time, and they are also able to pay the corresponding fees. Therefore, the upgrading of consumer demand for fresh products is the source of power for enterprises to enhance their freshness preservation capacity and improve the quality of fresh products.

The circulation pattern of fresh products has changed. The traditional fresh produce circulation model is roughly as follows: "origin-acquisition-wholesale-retail", which has many shortcomings, for example, the links are cumbersome and time consuming, and production lags behind market changes. After the fresh food circulation model began to change, the forms became more diverse, such as the connection between farmers and supermarkets, and direct contracted land planting by supermarkets, which reduced the circulation of fresh products and lowered costs. At the same time, because powerful enterprises have more complete fresh-keeping equipment, unified operating standards and strict management, it is better for them to keep fresh products fresh.

2.2. Limiting Factor

There is a shortage of fresh-keeping professionals. The upgrade of fresh products preservation under the new retail background, emphasizing the effective connection of each node from the origin to the consumer. In order to ensure the efficient operation of freshness preservation on all nodes, practitioners are required to have solid professional knowledge and strong organizational and operational capabilities. Each node of the chain fully performs the freshness preservation work, and finally the fresh-keeping upgrade can be achieved. However, the theoretical reserves of practitioners in the existing fresh product circulation system are insufficient, and they do not have the ability to predict the value-added in each link of fresh product circulation. As a result, practitioners cannot fully and reasonably apply fresh-keeping treatment to achieve freshness preservation and value-added. Practitioners lack the awareness and ability to identify and seize opportunities during the freshness upgrade of fresh products. They pay attention to freshness in offline transactions, but cannot effectively obtain and organize online transaction information of fresh products. Therefore, some products that are traded online lack effective freshness preservation input in warehousing and distribution, resulting in loss of quality and quantity of fresh product.

The strength of enterprises is uneven, and the standards of freshness are not uniform. When the concept of new retail broke out, some companies have proposed the development of new retail, but their strengths are different, especially for small and medium-sized enterprises. There are many problems, such as lack of information collection and processing capabilities, slow customer response, weak supplier capabilities, and lack of adequate fresh-keeping facilities. When companies in the supply chain are engaged in fresh-keeping cooperation, if the cost of each member of the supply chain is reduced too much, it is easy to oppress suppliers and make it difficult for fresh-keeping cooperation. And because it is difficult to unify the standards of freshness preservation, members of the supply chain are prone to hitchhiking when they invest in freshness preservation efforts, and it also makes enterprises have no reference standards when they make freshness efforts, so it is more difficult to maintain freshness.

Incomplete infrastructure construction in some rural areas. Transportation is the intermediate link of product circulation, and the smoothness of transportation affects the transportation time and the cost of keeping fresh during the transportation process. Fresh agricultural products are mainly concentrated in rural areas. And in some areas, due to remote areas and rugged terrain, roads are not accessible, which makes transportation more difficult. At the same time, the decentralized production by households makes the regional output small, reduces the capacity of road transportation and increases the cost of fresh-keeping. The popularity of the Internet is the key to uploading transaction information for fresh product and is important for retailers to master production information. But in some areas, due to the relatively low level of informatization construction, the lack of freshness processing information at the source of fresh agricultural products has seriously restricted the process of the fresh agricultural products' preservation informatization.

3. Suggestions

According to the operating characteristics of companies selling fresh agricultural products in the context of new retail, the business model is divided into a consumer experience type represented by Yonghui Super Species and a combination of online sales and offline sales represented by Suning Sun Fresh.

The consumer experience pattern mainly exists in offline physical enterprises. Consumers contact retailers directly to buy fresh products with high freshness and quality. This type of product is mainly kept fresh during the supply and sales links. Because consumers have high

requirements for product quality, all links in the supply chain also need to increase the requirements for product packaging, cold chain transportation, and refrigeration conditions. Improving the circulation and freshness efficiency of the entire supply chain is the fundamental approach. Supply chain members can do the following suggestions. First, Enterprises in the supply chain sign contracts for preservation, purchase and pricing. Moreover, the fresh agricultural products trading information platform among enterprises is established to ensure the freshness of fresh products and improve the fresh-keeping motivation of enterprises on each node. Second, Supply chain members strictly check the quality of fresh products when they are delivered, and establish a reward and punishment mechanism between retailers and suppliers according to the fresh preservation effect. Third, it is necessary to establish a long-term partnership between suppliers and retailers. If the strength of members of the supply chain is unequal, large enterprises can help the party with weak preservation ability to provide preservation equipment, or to provide technical guidance and opportunities for communication among practitioners, or the party with sufficient preservation ability to carry out preservation. In short, it is necessary to ensure that all nodes in the supply chain have paid sufficient efforts to maintain freshness and improve the quality of fresh products.

Online and offline dual-channel enterprises have increased their online ordering and offline distribution businesses on the basis of physical operations. Therefore, the single-channel supply chain has been expanded to dual channels. Retail enterprises must not only ensure the coordinated operation with suppliers, do a good job of freshness in the supply and retail links, but also pay attention to quality control during distribution. Offline distribution can be divided into enterprise employee distribution and outsourced third-party distribution. Regardless of the distribution method, first of all, it is necessary to formulate freshness and quality control standards in distribution, establish an information platform to obtain user's response. And the profit of the delivery staff is linked to the quality of the product when delivered to the customer. Secondly, we must do a good job of staff training, formulate standards for product selection and packaging, improve the fresh-keeping ability of employees, and reduce the loss of fresh products in stores. Taking measures in supply, retail, and distribution, members of the supply chain can effectively improve the freshness preservation effect.

4. Conclusion

The freshness preservation of fresh agricultural products has always been the focus of enterprises and researchers. As consumers' spending power increases and they focus more on the quality of fresh products, members of the supply chain need to put more effort into keeping fresh to win customers. The proposal and practice of new retail not only put forward higher requirements for freshness preservation, but also provide support for improving the preservation effect. The upgrading and development of preservation work not only requires the cooperation among the members of the supply chain, but also requires the enterprises to strengthen technical exchanges to improve the preservation capacity of the whole chain, relying on the information platform, which can realize the visualization of fresh preservation information in the production, transportation, storage, sales and distribution stages of fresh products, and ultimately improve the interests of enterprises and consumers by improving fresh preservation efficiency.

Acknowledgements

We acknowledge the support of the Innovation Fund Designated for Graduate Students of Chongqing Technology and Business University, project No. yjscxx2019-101-91.

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