Study on Risk Control Of Fresh Supply Chain Demand Interruption Under Computer E-Commerce Environment

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Abstract. Fresh food due to easy corrosion, increased the difficulty of businesses to supply fresh food. At the same time, in the e-commerce environment, fresh food in distribution services, logistics costs and food safety and other aspects of the problem to be solved urgently. This paper firstly explains the existing problems in the operation of fresh agricultural products e-commerce in China, and at the same time discusses the role and optimization of fresh agricultural products supply chain under the background of big data for readers' reference.

Keywords: Electronic Commerce, Fresh Supply Chain, Risk Control, Big Data Technology

1. Introduction
With the rapid development of information technology era, the application of computer technology in e-commerce can change the traditional way of business decisions. The fresh supply chain of enterprises can effectively reduce the demand cost of fresh supply chain by using big data. At the same time can get the fresh market accurate information, effectively improve the quality of service to customers.

2. Problems existing in the operation of fresh electricity suppliers in China

2.1. Procurement of fresh products

2.1.1. There are many intermediate links in procurement
Production and sales of scattered collection degree is not high, the speed of fresh products in the process of transportation is slow. In the circulation process, some products will go through more intermediate links, and those unnecessary intermediate links not only hinder the timely transportation of goods, but also increase the corresponding costs, leading to higher commodity prices than brick-and-mortar stores, thus losing competitiveness in price. Moreover, it takes a lot of capital to run the entire circulation system, which results in the price of the end product being higher than the price of the farmers' market product [1-3]. Therefore, the high-efficiency purchasing method is to send the commodities directly from the supplier to the customers by the fresh e-commerce platform.
2.1.2. Unscientific procurement methods and poor standardization level
Currently, there are two ways of purchasing: one is to sign contracts with farm households; Second, staff according to the product season and market response to purchase high quality goods. Although the two approaches can complement each other, they sometimes fail to meet the random needs of consumers, and they often fall into the dilemma of being out of stock or unsalable. In China, the production of agricultural and sideline products is generally loose and personalized, and it is difficult to have a unified quality inspection standard, which will also be affected by the individual subjective wishes of customers [4-6]. Therefore, it is inconvenient to unify the standard of food freshness.

2.2. Inventory management of fresh products
Freezing and refrigerating storage of fresh products is the main task of product inventory in fresh e-commerce supply chain. Since it is manually operated, it is generally inefficient and time-consuming, and product storage cannot be well realized. Due to the short quality and time limit of fresh products, only by having a keen judgment of customer demand can we reduce the loss and save the cost as much as possible. But in fact, it is very difficult to accurately predict orders. Once the prediction is wrong, the inventory pressure will increase, which will lead to high economic losses and even affect the operation of enterprises in serious cases. In addition, the staff in each link of the supply chain work independently and lack communication with each other. Due to the opposing interests of both sides, problems such as quality decline, product backlog, and late delivery often occur, which increase losses and make the whole supply chain run smoothly and inefficient, affecting the development of the industry.

2.3. Logistics distribution problems of fresh e-commerce

2.3.1. China lacks a perfect cold chain logistics and transportation system, and its refrigeration and processing capacity are insufficient
China's refrigeration facilities are backward in technology, refrigeration is insufficient, serious lack of professional cold chain vehicles, logistics and transportation costs account for 70% of the cost. At present, there is a gap between China and developed countries in terms of the number of vehicles and the volume of cold-chain transport. The refrigerated trucks in China's freight transport industry account for only 0.3%, far less than Germany's 3% and Britain's 2.5%. Therefore, China will strengthen the construction of cold chain logistics and transportation in the future.

2.3.2. High product consumption and logistics cost
The survey found that 60% of the total cost of the fresh e-commerce industry is spent on logistics. Fresh products attach great importance to timeliness and have high requirements for distribution facilities. However, due to the large loss in the transportation process, the overall cost will also increase.

2.3.3. Distribution problems of the "last kilometer"
Fresh electricity suppliers are still facing the "last kilometer" difficulty in logistics, mainly because the delivery time is inconsistent with the free time of consumers. During the delivery process, various influences cannot determine the time point of arrival. In addition, the last part of the journey from the cold storage to consumers will also produce transportation time, which will inevitably affect the freshness of products and lead to the decline of consumer satisfaction.

2.4. Consumer issues
Customers' shopping habits have been solidified, and they have conservative views on the quality of fresh e-commerce food. Many people are used to buying fresh products in physical stores, and there are fewer online users, which leads to scattered orders from fresh e-commerce companies and difficult distribution. In people's impression, online shopping products are likely to cause many problems. In
addition, food safety is the top priority of people's attention, and many users still lack trust in it. Consumer loyalty is hard to maintain. When shopping, people will generally compare prices and not be limited to a certain platform. After multiple comparisons, they choose the platform they are satisfied with. Therefore, it is difficult for e-commerce enterprises to maintain regular customers. Most of the customers of fresh e-commerce companies are college students and white-collar workers. They pay more attention to consumption experience. If there is a problem in the purchasing process, they may give up the products of this platform, which will lead to the loss of some customers.

3. Fresh Agricultural products supply chain under the background of big data

3.1. The application of big data technology changes consumer behavior
In recent years, food safety problems emerge in endlessly, and people pay more and more attention to such problems. Through RFID technology, network communication technology, Internet of Things technology, remote video monitoring technology and other technical means, the production, storage, processing, transportation, sales and other links of fresh agricultural products from the farmland to the food quality of the whole process, to obtain and collect comprehensive information. At the same time, the government's policy guidance on food safety and the promulgation of industry norms enable consumers to conveniently inquire the whole-process traceability information of fresh agricultural products from multiple channels, so as to understand the origin, freshness and nutritional value of agricultural products in real time.

Nowadays, people are more and more used to scan the barcode or two-dimensional code of a product by mobile phone to inquire information, and share the product picture, introduction, evaluation and shopping experience through WeChat circle of friends and other ways. Negative information about commodities can spread out in a short period of time in a wide range, and enterprises take a positive attitude to deal with the change of consumer behavior. For example, platforms such as "let me check" continuously provide real-time price information of products. Consumers can also log in e-commerce enterprises such as sf preferred and T-mall fresh at the same time when shopping in supermarkets such as carrefour and rt-mart.

Changes in consumer behavior to realize that, the current application of Internet of things, big data technology has achieved product related information gathered on the consumer end, consumers have more abundant information, better real-time performance, at the same time, the join of electricity enterprise makes consumers have more channels to choose, so the influence factors of consumer demand will be more and more volatility (figure 1 cold fresh product information obtained through qr code).

![Figure 1. Cold-fresh product information is obtained by two-dimensional code.](image)

3.2. Changes in competition in the fresh agricultural products industry
Under the background of the Internet of things, big data, consumers use information technology to enhance their bargaining power, greatly reduce product information asymmetry degree and produce premium based on the closed channel is more and more difficult to maintain, forcing firms to review
their own work flow, logistics process from chasing after the cut to dig new profit growth point, through the provision of fresh, high nutritional value of agricultural products for a profit.

From the reality of the industry, jd, Tmall, sf, the original life network and so on have been in the nationwide layout of the warehouse, the establishment of a professional distribution system to achieve door-to-door service. Both e-commerce enterprises and traditional supermarkets no longer regard price as the sole focus of competition, and they emphasize improving the freshness and nutritional value of fresh agricultural products while controlling costs to attract consumers.

To improve the freshness and nutritional value of fresh agricultural products, logistics distribution should be flexible enough to make rapid responses to speed up distribution or change transportation conditions when changes in external environment affect product quality. The random change of demand needs to be able to timely adjust the inventory, reduce the loss caused by unsalable. In order to improve the flexibility of logistics, cost control should be considered. At present, more and more traditional retail enterprises begin to form strategic alliances.

4. Risk control of fresh supply chain demand interruption under computer e-commerce environment

4.1. Big data + agriculture
Agriculture is indispensable to fresh food. By building a platform related to agricultural big data, the development trend of agriculture can be grasped in a timely and comprehensive manner, the optimization of agricultural economy can be promoted, the industrial structure of agricultural regions and the planting structure of crop varieties can be reasonably adjusted, and the early warning system of agricultural land and the natural disaster prevention system can be built. Relying on the existing natural resources and environmental advantages to build green agriculture, ecological agriculture. Agricultural production data: Through the statistical analysis of crop production data and breeding production data, effective measures should be taken to improve the efficiency in the aspects of seed selection, field management, agricultural materials and machinery procurement, epidemic prevention and so on. Agricultural market data: solve the contradiction between supply and demand of agricultural products through timely acquisition of agriculture-related information, reduce the purchase cost of agricultural materials, and improve farmers’ income level (Figure 2. Realize field management by means of information technology).

![Figure 2. Field management by means of information technology.](image)

4.2. Big data + logistics
E-commerce cannot do without logistics. The cold chain logistics big data transmitted by the entity in the fresh e-commerce supply chain mainly refers to the logistics enterprises, especially the whole process logistics, including procurement, transportation, storage, distribution, packaging, etc. A large amount of data will emerge in every link at any time, which can create profits for the enterprises. The purchasing process uses the historical purchasing transaction data records to help select quality suppliers to reduce operational risks and operating costs. In the transportation process, GIS and other
technologies are combined to understand real-time road information through video, pictures and positioning, reasonably plan the driving path, realize remote scheduling, and implement whole-process monitoring of the cold chain. Use modern communication means and network platform to make full use of social transport capacity, avoid no-load waste and build all-round intelligent logistics transportation platform. Based on the application of RFID, sensor and other technologies, the storage link can realize intelligent storage inventory control, storage space management, goods sorting and other aspects. Reasonably plan the location of the warehouse center based on historical circulation data, etc. (Figure 3 Real-time understanding of commodity distribution status through positioning technology).

4.3. Big data + retail
The e-commerce era still cannot completely replace traditional retail. For e-commerce, although it is convenient to a certain extent, it cannot minimize the time cost, offset people's trust and worry about online shopping, and also cannot meet people's sudden shopping needs, let alone their shopping experience. As for fresh retail, retailers can draw consumers' consumption behaviors based on the retail big data platform and the offline open data entry, which is conducive to in-depth understanding of consumers' shopping preferences, and thus to provide help for making reasonable management and decision-making plans to create excellent shopping experience for consumers.

5. Conclusion
To sum up, the demand of cold-fresh supply chain in the era of e-commerce can provide consumers with more consumption platforms through the use of big data technology, which brings great convenience to consumers. At the same time, the enterprise carries on the informationization processing to the cold fresh purchase, the transportation, the storage, the distribution, the packing process, has improved the cold fresh enterprise's work efficiency, is advantageous to the enhancement enterprise's comprehensive efficiency.

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