Analysis on the Development Trend of Rural Electric Business Under the View of Cold Chain Logistics and Supply Network

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Abstract

In modern society, information technology has become an important driving force for the development of the national economy and society, and national economy, the living standard of urban and rural residents, residents' cultural quality are constantly improving. With the development of rural information construction, electricity suppliers have penetrated into people's daily lives. Electricity suppliers break the geographical restrictions, and become an important means of the current new rural construction. So the analysis of the obstacles and countermeasures of logistics development of rural electricity suppliers has a clear practical significance. In this paper, we analyze the development trend of rural electric business under the view of cold chain logistics and supply network.

Keywords: Development Trend, Rural Electric Business, Cold Chain Logistics, Supply Network, Electricity Suppliers.

Introduction

The construction and development of China's agricultural electricity business platform has been accelerated, the number of agricultural websites has doubled, and agricultural enterprises have begun to enter the electricity business platform or self-built electricity business.

The development of e-commerce has the characteristics of quickness and low running cost. Rural electric business and logistics market are in the development period, due to its own particularity, such as scattered market distribution and unimpeded traffic, rural courier and logistics market need to spend more time and delivery cost during distribution. At the same time, the cost of logistics activities during the formation is higher than profits, resulting in a lot of courier companies do not offer rural areas delivery.

- Because there is a big flaw of the information infrastructure in rural areas, logistics-related information in rural areas cannot be timely transmission.
- Logistics companies and electricity companies did not form a good cooperative relationship, thus restricting the electricity providers in the rural market development and construction.
- Many areas of China's rural areas did not achieve the full coverage of the Internet, and the network signal is instable, resulting in electricity during the distribution business; rural areas cannot be related to the effective monitoring of logistics information, resulting in more business to the electricity business additional costs.

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• For consumers, the instability of the network information cannot lead to real-time monitoring of logistics-related information, reducing the development of information to bring people's welfare.
• The imperfect website has also affected the effective development of rural electricity providers, although there is establishment of rural sites, but the electricity providers and logistics sites and related information is relatively small.

Promoting the progress of China's rural electricity logistics, is conducive to the continuous development of rural economy. In order to realize the modernization of rural logistics service model, we introduce the theory of cold chain logistics and supply network. China's cold chain logistics development is still at a low level, there are still many problems. The study found that in order to promote the development of China's cold chain logistics, and cold chain links to solve the practical problems of the key points is to expand the public demand for cold chain, effective demand is the development of cold chain logistics power.

Figure 1. The E-commerce Model.

The Proposed Methodology

Cold Chain Logistics. With the increasing demand for food safety and quality, cold chain logistics has become the focus of attention of the logistics industry. In order to protect the perishable food cold chain is developed, which is widely used in primary agricultural products, processed food, biological and pharmaceutical circulation system. The cold chain can guarantee the quality of perishable foods, and reduce the food in circulation loss and prolong the food preservation time. Cold chain not only provides consumers with high quality food at the same time, but also brings huge benefits for the cold chain in all aspects of the manufacturers, suppliers and distribution companies.
The development of cold chain logistics industry is an important feature of modern agriculture. Cold chain logistics, as an important part of the food safety chain, has become an important symbol to measure the level of development and scientific and technological content in the field of circulation of a country. China's cold chain logistics has just started, which has not formed a large-scale, systematic, standardized cold chain logistics system, and the market cannot meet the needs of modern agricultural development and export of agricultural products. Cold chain logistics is to ensure the safety and quality of food and reduce food losses in food production, processing, storage, transportation, sales, to ensure the food is a system engineering in a low temperature environment throughout the implementation of temperature control in front of all aspects of consumption.

In the whole process of transportation, handling, changing the mode of transport, changing the packaging equipment and other links, the transported goods always maintain a certain temperature. The mode of chain transportation can be road transport, water transport, rail transport, air transport, but also can be composed of a variety of modes of transport integrated transport. Cold chain transportation is an important link of cold chain logistics, and the cost of cold chain transportation is high, and it contains more complex mobile refrigeration technology and insulation box manufacturing technology.

- Highway cold chain transport.
- Railway cold chain transport.
- Shipping and container cold chain transport.

Cold chain logistics’ scope of application include: fruits and vegetables, meat, aquatic products, frozen food, dairy products, pharmaceuticals, chemical products, biological products.

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Figure 2. Cold Chain Logistics.

At present, the United States, Canada, Germany, Japan, South Korea and other countries have formed a complete agricultural cold chain logistics system. The main practices and experiences of cold chain logistics of agricultural products in developed countries can provide reference for the establishment of cold chain logistics system for agricultural products in China:
• Set up specialized management agencies.
• Develop national or industry standards.
• Government should support the development of electronic commerce.
• Adopt advanced technology.
• Public product information.

**Supply Network.** The stability of the supply network determines the development of electronic commerce. The goal of logistics is to achieve the established logistics service level with the lowest possible total cost. Supply network management involves a very complex network optimization problem, and its network optimization process can be carried out under the guidance of some scientific methods. Supply network resource allocation, the number of nodes, scale, resistance planning and design decisions and production layout, market distribution, supply channel planning and design, and other factors are closely related. Due to the large number of network decision-making work and program comparison and selection, these issues can be achieved through a number of existing management decision-making software.

Logistics capability mainly includes three aspects: flow, resource and network, and the link between these elements is an important part of logistics system. Supply network is the link between conflict and cooperation, stalemate. The conflict between supply network mainly includes the goal, the property and the operation conflict.

• The inconsistency of logistics nodes in the supply network leads to the mismatch of logistics capability, so the hysteresis phenomenon between nodes often occurs. Therefore, enterprises need to position each node from the internal logistics capacity of a reasonable position, and choose their own core logistics capabilities, and then consider the appropriate direction of development from the perspective of the entire supply network.

• There must be a property conflict between the nodes in the supply network. A supply network cannot be established by an enterprise, it is built by different property rights organizations. Regardless of the number of firms involved, theoretically, firms on the supply network have distinct borders. In the supply network, the power of each enterprise is often reflected by the competitiveness of enterprises, if the company's core competitiveness is relatively strong, then it has a relatively large power.

• Operation conflicts between supply networks are mainly due to the inconsistency between different modes of operation. In the absence of the establishment of the logistics capacity based on the operation of norms and standards, there often have a conflict.

In the case of a conflicting supply network, it is necessary to consider how each enterprise can collaborate in terms of logistics capabilities. Collaboration is a way to facilitate the operation of the system, in order to achieve synergy, companies need to achieve the objectives of the elements and property rights consistent and seamless connectivity.

• The goals of the supply network must be adjusted. The whole starting point is that the goal of all logistics capability elements is subject to the objectives of the system above all elements.

• Unified logistics capacity between the elements of property rights. The supply network requires an agreed supply system in order to avoid property conflict.
Build a seamless connection. An obstacle exists in the connection between the supply network and the enterprise due to the existence of organizational boundaries. In order to realize the seamless connection of the logistics ability, it can be solved from three aspects: leaning network, visualizing network, building systemic logistics capability.

Research on supply network is a complex problem, because of it is a complex system, and the dynamic performance of the system is relatively strong, which brings difficulties to the research. We consider supply network management from the perspective of logistics. In the supply network, the link between enterprises is mainly through the logistics, and the logistics capability of the enterprise is related to its core competence.

![The Supply Network](image)

**Figure 3. The Supply Network.**

**Conclusion**

With the development of rural information construction, electricity suppliers have penetrated into people's daily lives. In this paper, we focus on the development trend of rural electric business under the view of cold chain logistics and supply network, and we analyze the theory of cold chain logistics which is widely used in primary agricultural products, processed food, biological and pharmaceutical circulation system. At the same time, the stability of the supply network determines the development of electronic commerce. Nowadays, rural electric business and logistics market are still in the development period, thus many of the rural infrastructure is not perfect, such as service base station, communication facilities, etc. In order to realize the modernization of rural logistics service model, we should make full use of cold chain logistics and the supply network, and some strategies are proposed in this paper.

**Acknowledgement**

This paper is financially supported by the Zhejiang Science and Technology Department of the Soft Science Key Research Topic in 2016, the project name is: Research on Path, Mode and Countermeasures of the Development of Electronic Commerce in the County of Zhejiang Province under the Background of Economic New Normal. The Project Number: 2016C25006.
Reference


