

# *Factors influencing the development of agricultural products e-commerce based on the perspective of supply chain*

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**Abstract:** China's agricultural products e-commerce has developed rapidly, but it also faces many problems, mainly from the "supply chain horizon" of agricultural product production and circulation. In order to coordinate the development of agricultural products e-commerce, it is necessary to conduct research on the "supply chain" factors affecting the development of agricultural products based on the analysis of China's agricultural product operation mode and supply chain, systematically analyze the development of agricultural products e-commerce from the perspective of supply links, and propose a solution strategy.

## **1. Introduction**

With the mutual promotion of informationization and economic globalization, e-commerce has emerged and developed rapidly. Under the background of "Internet +", e-commerce has increasingly become an indispensable way for commodity circulation and people's lives. According to relevant data, the scale of China's e-commerce economy reached 8.2 trillion in 2012, more than 10 trillion in 2013, and reached 26.5 trillion in 2015. It is expected to reach 50 trillion by 2020. The development of e-commerce has also brought new opportunities for the development of modern agriculture, which has an important impact on the construction of new rural areas and the transformation and upgrading of agriculture. The state attaches great importance to the development of agricultural products e-commerce. However, objectively speaking, although China's agricultural products e-commerce has developed rapidly in recent years, it is still in its infancy, and the development of infrastructure, market mechanism and operation system is not sound enough, and it faces many problems. And difficult. In-depth analysis of these problems and constraints, boiled down, mainly from the agricultural production and distribution supply chain. Therefore, from the perspective of supply chain, systematic analysis of the problems affecting the development of agricultural products e-commerce, targeted countermeasures, is a research topic of great value.

## **2. Agricultural product e-commerce operation mode and its supply chain**

### **(1) Common patterns of agricultural products e-commerce**

At present, there are many kinds of operation modes of agricultural products e-commerce in China. From the perspective of supply chain, there are mainly the following common modes:

1) B2B mode. It is a business-to-business e-commerce operation model, which refers to the

production, processing, sales and logistics of agricultural products, which use e-commerce technology to market agricultural products, including information services and online transactions.

2) B2C mode. It is an e-commerce model between agricultural product manufacturing enterprises or sales enterprises and agricultural product consumers. Agricultural product manufacturing enterprises or sales enterprises open agricultural product online stores through self-built websites or through third-party platforms, and send agricultural product information to provide online sales and services of agricultural products.

3) P2B mode. It is an e-commerce model between agricultural product demand enterprises (agricultural processing or distribution enterprises) and agricultural product producers. The agricultural product producers are the audience, and the agricultural product demand enterprises publish demand information for the agricultural product producers through the e-commerce network, which is determined by the agricultural product producers. Whether to accept business needs.

4) O2O mode. It is an e-commerce model for agricultural products that is combined online and offline. Reinventing the agricultural product supply chain by integrating online and offline advantages. It includes three types of agricultural product processing enterprises, agricultural product wholesale market leading, and agricultural products e-commerce. The main operation mode of the agricultural product processing enterprise-oriented supply chain is: online promotion and information transmission + online transaction + offline business process. The agricultural product wholesale market-oriented supply chain operation mode is to solve the problem of information asymmetry by opening flagship stores. Consumers can see the detailed information of the products in the flagship store, and then purchase them. After the network processes the orders, Third party logistics for distribution. The agricultural product-oriented supply chain of agricultural products, products come from large wholesale markets, consumers buy on the website, and then distribute by logistics.

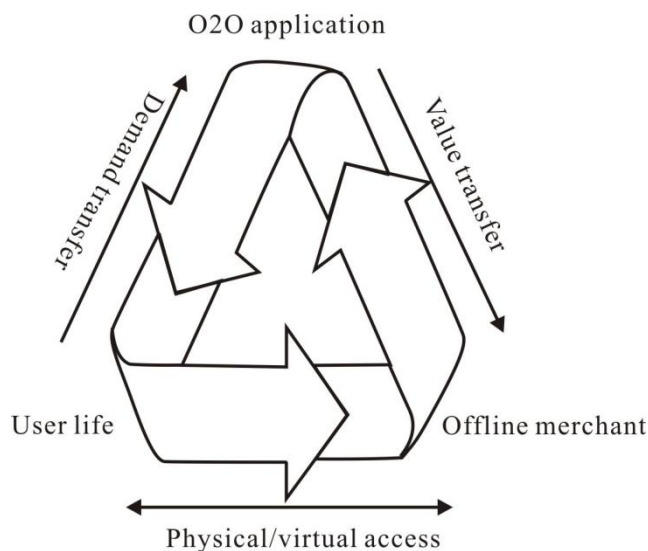


Figure 1 Flow chart of agricultural product e-commerce operation mode

(2) Description of supply chain of agricultural products e-commerce

From the perspective of supply chain, the paper briefly summarizes the current common patterns of agricultural products e-commerce. Although the agricultural product supply chain under these modes is not consistent, but has the common feature, it is an e-commerce information platform based on information network, which organically combines the production, processing, sales, distribution and consumption of agricultural products, showing the trend of cross-border integration. Banks and other institutions can use the e-commerce information platform to conduct payment and settlement related to agricultural product transactions. Relevant government agencies can

implement supervision and guidance on the quality and standards of agricultural products, market access, etc. through e-commerce information platforms. The e-commerce information platform, in addition to the purchase of agricultural products, can also obtain the corresponding pre-sale, sale, after-sales service, as well as to achieve quality inquiries, traceability of the origin of the purchased agricultural products. The agricultural product e-commerce supply chain model can be described in Figure 1.

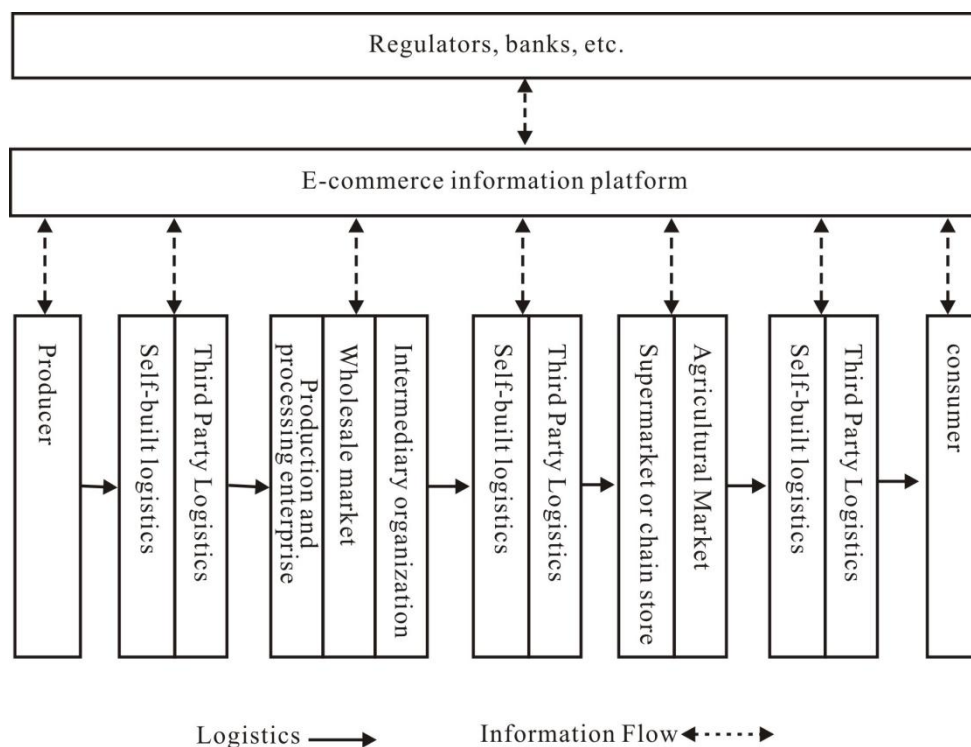


Figure 2 Schematic diagram of agricultural product e-commerce supply chain

### 3. Problems faced by the development of agricultural products e-commerce —based on the supply chain perspective

Under the background of rapid development of e-commerce, China's agricultural products e-commerce has developed rapidly. But at the same time, there are still many deficiencies, and there are many problems that need to be analyzed systematically. This paper focuses on the main issues facing the development of China's agricultural products e-commerce from the perspective of supply chain.

#### (1) Relatively insufficient investment in rural information infrastructure

Promoting the development of e-commerce of agricultural products requires the improvement of rural information infrastructure. Although the national and local government's policy support and financial support have significantly improved the construction of rural informatization infrastructure in China, due to insufficient financial investment at all levels. The main body of production and management of agricultural products also lacks the willingness to invest, and the basic conditions for informationization in some regions are still relatively backward. For example, in some areas, broadband network coverage is not in place, and broadband network fees are high in most areas, which seriously affects the development and popularization of agricultural products.

#### (2) Low degree of organization of agricultural products

Most of China's agricultural production is still a decentralized small-scale farming model. The production scale of individual farmers is small, the ability of agricultural products to export

information and market information is weak, the market capacity is poor, the leading enterprises of agricultural production are few, and the development of agricultural production cooperation organizations is relatively Lag. This aspect can not form the scale benefits of agricultural production, on the other hand, it makes the production of agricultural products with certain randomness, which is not conducive to the structural optimization of agricultural production, nor to the standardization of agricultural products.

(3) The standardization and branding of agricultural products are not high

With the improvement of income level and consumption level, people's pursuit of quality and safety of agricultural products is increasingly high. Simple, low-quality primary agricultural products are difficult to meet consumer demand. The demand for agricultural product consumption market for agricultural product standardization and branding is increasing. It is more and more apparent. However, from the current situation, there is still a big gap between the overall level of China's agricultural product standardization and the demand for agricultural products and the e-commerce development requirements of agricultural products. The branding of agricultural products is also relatively lagging behind, "three products and one standard" (ie pollution-free agricultural products) Green food, organic agricultural products, geographical indications of agricultural products) The number of agricultural products is small and the proportion is not high. Many agricultural products have safety problems such as pesticides and hormone residues, which have largely restricted the development of agricultural products.

(4) The awareness of agricultural products is not strong

The popularity of computer and Internet knowledge in rural areas is generally low. Many farmers do not have the basic skills and knowledge to engage in e-commerce. Many consumers do not realize the convenience and efficiency of using e-commerce. In recent years, although there have been great breakthroughs in the construction of rural e-commerce outlets, such as the government's vigorous promotion, the coverage of "Taobao Village" construction has increased significantly, but due to insufficient understanding of agricultural products e-commerce, and the lack of corresponding knowledge and technology, Farmers' interest in e-commerce of agricultural products is not high, and participation is low. In many places, "Taobao Village" has not played its due role in the development of e-commerce of agricultural products.

(5) Lack of e-commerce talents for agricultural products

The development of agricultural products e-commerce requires a large number of e-commerce professionals in agricultural products. It is necessary to master the relevant technologies of e-commerce, familiarize themselves with the production and sales of agricultural products, and understand the market information of agricultural products. However, from the current situation, there is a considerable lack of talent in this area. Not only are the shortages of professional talents such as e-commerce technology, design planning, and photography art of e-commerce enterprises in agricultural products, but also the shortage of talents familiar with e-commerce in the vast rural areas. Nowadays, rural young and middle-aged people have flowed to cities. The rural areas are "hollowized" and the rural population is aging. The age and knowledge of the rural population are difficult to adapt to the development requirements of agricultural products.

#### **4. Suggestions on the development strategy of agricultural products e-commerce based on supply chain perspective**

(1) Institutional supply and environmental aspects

Strengthen the construction of laws and regulations, and establish a legal environment and policy environment that is suitable for the development of agricultural products. At the national level, e-commerce legislation should be incorporated into the legal system. First of all, according to the

situation and trend of e-commerce development, the relevant laws and regulations should be revised to adapt to the needs of e-commerce development. Secondly, it is necessary to focus on the development of e-commerce, to regulate the e-commerce market, and to establish laws and regulations on the operation of e-commerce. Third, we must focus on the internationalization of e-commerce and focus on coordination with international e-commerce laws and regulations. At the regional level, it is necessary to base on local realities and further improve the regulations and policy systems involving e-commerce on the basis of national laws and regulations, and focus on solving agricultural product quality standards and safety, electronic transaction security, data communication confidentiality, and e-commerce intellectual property protection. , e-commerce taxation and other issues, improve relevant standards and industry norms.

Give play to the leading role of the government, increase financial input, further strengthen rural network infrastructure construction, provide farmers with various forms and targeted network information services, provide appropriate subsidies for farmers to purchase computers and access the Internet, and provide farmers with free information basic knowledge. E-commerce technology and knowledge training, as soon as possible to achieve "village and village network, households can access the Internet." Improve the information service system for agricultural products, establish a fully covered agricultural product information network system, and provide comprehensive, timely and accurate agricultural product information services for the majority of farmers and agricultural production and management enterprises. Give play to the role of demonstration and demonstration of agricultural informatization projects, give priority to cultivating a number of demonstration enterprises for the application of e-commerce for agricultural products, and demonstration enterprises for the application of Internet of Things, and give play to the role model of pioneering enterprises in agricultural informatization.

#### (2) Agricultural product supply level

At present, the production of agricultural products is mainly based on the production of scattered households. It is necessary to vigorously support the leading enterprises in the production and processing of agricultural products, focus on cultivating the main production and management of new agricultural products, promote the development of cooperative agricultural production organizations, promote the scale of land production, intensive planting operations, and improve agricultural products. The level of production organization, to solve the problem of poor communication of information and difficult distribution of logistics caused by decentralized production of agricultural products.

Based on the actual situation of each place, according to the analysis of market information, the structure of agricultural products is adjusted and optimized from the perspective of supply side. Based on the advantages of local resources, vigorously develop characteristic agriculture-related industries, rational regional layout, take industrial bases and industrial parks as the starting point, do a good job in production planning and layout, strengthen the construction of characteristic industrial bases, and lead the development of agricultural products e-commerce with characteristic agriculture-related industries.

#### (3) E-commerce level of agricultural products

Guided by the government, we will establish a number of brand-related agricultural websites with specialization level, give full play to the government website resources and brand advantages, and establish an e-commerce website for agricultural products with individuality and industry characteristics according to the characteristics of regional economic development. Integrate and enhance the regional agricultural products e-commerce information and trading platform, increase support, encourage and support regional agricultural products e-commerce enterprises to build e-commerce platforms, and create regional agricultural product information portals and regional agricultural products e-commerce alliances. Guide farmers, agricultural products processing and

sales enterprises to join regional agricultural products e-commerce alliance, and expand agricultural products e-commerce.

#### (4) Agricultural product logistics level

In view of the vast rural areas, scattered population, some rural transportation facilities are not complete, and the scope of logistics and distribution is difficult to cover, strengthen the construction of rural transportation networks, increase the construction of agricultural product storage systems, and smooth the “last mile” of agricultural product logistics and distribution. Effectively solve the problem of difficult transportation of agricultural products and difficulties in entering the city. Under the leadership of the government, the top-level design and system planning of the regional agricultural product logistics distribution system will be carried out. The advanced network technology and information technology will be used to transform and upgrade the traditional agricultural product logistics distribution methods, promote the reorganization of agricultural product logistics enterprises, and eliminate backward enterprises. Use information technology to improve the operational efficiency of logistics enterprises, and realize the scale and information management of agricultural products logistics.

## 5. Conclusion

At present, although the development of China's agricultural products e-commerce is still in the initial stage, some structural problems have arisen, and it is necessary to actively adjust the structure and fill in the shortcomings. Therefore, it is necessary to conduct systematic research from the perspective of the supply chain, comprehensively and systematically understand problems, clear up ideas, formulate strategies, and promote the healthy development of agricultural products.

## References

- [1] Zakaria S A S, Brewer G, Gajendran T. *Decision Making of Industrialized Building System: A Supply Chain Perspective on the Influence of Behavioral Economic Factors*[J]. *Lecture Notes in Electrical Engineering*, 2013, 229(5):767-779.
- [2] Gao D, Shao S. *Influencing Factors and Dynamic Mechanism of Industrial Structure from the Perspective of Supply-side Reform*[J]. *Asian Agricultural Research*, 2018, 10(12).
- [3] Franco M, Pereira C. *Exploring the reasons and factors influencing the formation and development of alliances in the hospitality industry*[J]. *Baltic Journal of Management*, 2013, 8(4):438-462.
- [4] Chen Y F, Lu H F. *We-commerce: Exploring factors influencing online group-buying intention in Taiwan from a conformity perspective*[J]. *Asian Journal of Social Psychology*, 2014, 18(1):62–75.
- [5] Wei-Tsong Wang, Hui-Min Li. *Factors influencing mobile services adoption: a brand-equity perspective*[J]. *Internet Research*, 2012, 22(2):142-179(38).