

# *A Study on Produce E-commerce Development from the Perspective of Supply-side Reform*

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**Abstract**—Produce e-commerce in China is still in infancy with a plenty of room for growth. The paper delves into the researches of current influential papers, and finds the significant role of internet + agriculture's in rural economic growth and construction. Governments at all levels must take multiple measures, such as improving rural infrastructure, establishing a produce quality standard system and production traceability system, and seeking rural e-commerce leaders, to build famous villages and towns with access to information, well-developed logistics and assured high-quality products. The practices of keeping produce moving, driving local economy forward and encouraging immigrant workers to return to villages will propel rural economy to grow rapidly.

**Keywords**—*produce; e-commerce; rural economy; e-commerce leader; rural infrastructure; product quality system*

## I. INTRODUCTION

"New economy" is included in the government's work report with supply-side structural reform as the highlight. Supply-side structural reform works to transform and upgrade traditional industries, breed new industries and improve competitiveness by starting from supply and production. Internet represents the era of new economy. The combination of virtual and real economies meets traditional industries' demand for upgrade. Now, there's the new normal for economic growth and a new stage for agricultural growth. In early 2016, the central rural work meeting made a significant plan to boost the modernization of agricultural sector, and instructed to introduce modern industrial organization approaches such as industrial chain and value chain into agriculture to promote the interaction among primary industry, secondary industry and tertiary industry. The growth of rural e-commerce should be driven. E-commerce should access the production, sale, processing, transportation and after-sales services of produce, so that products or services can be purchased, sold and paid online.

With the popularization of internet access and governmental policy support, now four modes have come into being in China. They consist of agricultural information services stations provided by government sectors, business websites among agricultural enterprises, and agricultural enterprises' e-commerce for customers and third-party trading markets. According to a report, agriculture-related websites are numerous, but with poor quality. The reason is that peasants in western rural China are uneducated, pay little attention to

produce e-commerce and lack facilities for internet access. The existing agriculture-related websites are information and promotion-based with few e-businesses that directly provide customers with complete services. A full produce distribution system is yet to come into being. The absence of a unified food standard certification prevents Chongqing's produce e-commerce from developing. At present, there's still plentiful room for Chongqing's produce e-commerce growth.

He Dehua, in his paper *A Study on Consumption Willingness of Fresh Produce E-Commerce Consumers* puts forward that the main factors influencing Chinese consumers' online produce consumption are as follows: expectation for product quality and safety; how abundant the information provided by websites is; expectation for package and logistics; and expectation for price and discount. There are confirmed in Fei Xiaoyu's paper *An Analysis on Influence of E-service on Consumers' Willingness Regarding Online Purchase- A Case of Produce*. By establishing an evaluation system, the paper concludes that online customers desire quality produce, which is related with China's food safety issue, information asymmetry and produce's being perishables and experience-oriented. In this regard, produce e-commerce should work to promote small, high-quality and high-end products to gain profit. Customers' demand pushes the supply-side of produce to reform. Chongqing, as an important produce producing area in western China, should take into full consideration its regional characteristics to improve every link in produce production and sales, and to explore ways to link dispersed production and customers through e-commerce platform to form a closed-loop operation of production, purchase, trading and distribution and realize the real connection between production and sales.

## II. CURRENT MAJOR RESEARCH DIRECTIONS AT HOME AND ABROAD

Produce e-commerce is not China's invention. Most Chinese researches on this field are still in the preliminary and exploratory phase. In western world, for years of development, the mode of internet + agriculture has been mature. The directions of western literature researches can be the references for the emerging Chinese rural e-commerce.

### A. Major Research Directions at Home

As produce e-commerce progresses, relevant researches are becoming more bountiful and more in-depth. In recent years,

environment, technologies and systems in e-commerce sector grow fast in China, but relevant researches lag behind. Now, most papers in China research macro pattern development, technical aspects like micro-platform and logistics and consumers' willingness to purchase fresh produce from e-businesses.

Macro researches on produce e-commerce: Hu Tianshi and Fu Tiexin, in their paper *An Analysis on Produce E-commerce Development in China*, analyze the current situation of produce in China through theories and cases, and sketch the prospects of Chinese produce e-commerce; Hu Tianshi, in his paper *Research on China's Produce E-commerce Modes*, puts forward 8 modes; Sun Baiming analyzes the main modes of produce e-commerce; Liu Na compares and analyzes online produce trading modes; Wu Qinlin, in his paper *An Analysis on E-commerce Modes of Fresh Produce*, puts forward the problems of and solutions to the development of e-commerce of fresh produce according to the conception, development and current situation of fresh produce; Yuan Kanglai analyzes produce e-commerce in terms of industrial structure, market, product features and organization-based development.

Micro researches on produce e-commerce: He Dehua and Zhou Deyi, in the paper *Research on Edible Produce Safety Information Management System*, state that a trustworthy social certification authority should be developed and the produce quality information management should be improved by the integration of governmental functions and the provision of stable and credible policy standards; Sheng Ge, Wang Daqing et al. delve into the ways to improve produce e-commerce platform as well as the coordination of wholesale market in building an e-commerce platform; Zhao Ping and Luo Yi analyze the produce e-commerce with Food Manager and Fresh Direct as the examples in the virtual field of produce; Xue Yueju, Hu Yueming et al. delve into transparent information framework of produce supply chain; Yuan Kanglai and Yang Yimin analyze the factors deciding the B2B e-commerce development in agricultural supply chain.

Consumers' willingness for e-purchase of fresh produce: He Dehua, Han Xiaoyu and Li Youzhu, according to their online and offline questionnaires, find that consumers' product safety and quality expectation as well as the abundance of website information have an impact on consumption desire; Lin Jiabao and Zhang Bei, in their paper, have an quantitative analysis on the consumption desire in C2C produce e-commerce; Fei Xiaoyu, based on model analysis, finds that customers are willing to purchase quality produce online with fast delivery; Wang Dan discussed the main factors that influence consumers' behaviors in online produce purchase.

Besides, there are also domestic researches on regional produce e-commerce development, especially in Heilongjiang and Hunan. Sun Baiming has discussed the development of produce e-commerce in Heilongjiang; Wang Daqing, Nie Ying et al. have a strategic conception of green produce IoT application platform in Heilongjiang reclamation area; Peng Jian delves into Hunan's strategy to promote produce e-commerce.

## *B. Main Research Directions Abroad*

Produce productions and consumptions at home and abroad differ from each other in terms of characteristics and modes. Foreign researches mostly focus on the consumption behavior of e-commerce consumers. Limayem M., in his paper *Critical Review of Online Consumer Behavior*, reviews consumers' behaviors when purchasing online; Klein and Cirtin state that produce mainly for food are more experience-based, which is the reason for their slow growth in online sales; Brady and Cronin divide service quality into interactive quality, real environmental quality and service result quality. Foreign scholars' researches started early and are accomplished enough to serve as references for researches on produce e-commerce in view of supply-side structural reform.

## **III. PRODUCE E-COMMERCE'S IMPORTANT ROLE IN ECONOMIC DEVELOPMENT IN RURAL CHINA**

In the era of internet+, China is encouraging the general public to start businesses and make innovations as well as stimulating an e-commerce boom. The Ministry of Commerce introduced *Opinion on Promoting the Development of Rural E-commerce* and the central government announced to help rural residents get out of poverty, indicating that the development of rural e-commerce is a natural outcome of the trend of times. E-commerce's access to villages helps to unblock the channels of agricultural information and produce sales, create famous produce brands and develop rural economy for common prosperity and harmonious society.

### *A. Develop Rural E-commerce, Smooth Information Channels and Promote Produce Circulation*

That farmers were worried even though they had a bumper apple harvest was nothing new in the era without efficient network. Due to market information asymmetry, fruits cannot be sold while buyers cannot find fruit sellers, and agricultural production and circulation cannot be linked well. Years ago, even though there were dedicated agricultural information service stations, business websites for agricultural enterprises and third-party trading market, relevant agriculture-related trading platforms were mainly targeted at produce wholesale, and failed to link farmers directly with a great number of customers, which generated few profits for farmers. In this regard, e-commerce's access to villages enables farmers to receive orders from all over China. Making information business-based and digital and smoothing produce information channel, it enables farmers to adjust species and numbers of crops according to the market, speed up product circulation and put an end to irrational production. E-commerce has contributed to a good sale of coconut carving in Dongjiao Town, Wenchang City, reduced inventories and revitalized coconut carving crafts through customization and production innovation.

### *B. Develop Rural E-commerce, Improve Rural Infrastructure and Smooth Produce Sales Channels*

Rural e-commerce depends on infrastructure. Now, due to underdeveloped traffic, deficient internet coverage and poor logistics distribution system in rural China, some produce

cannot be traded or circulated efficiently. To promote e-commerce, issues concerning road, internet and distribution must be well addressed so as to drive relevant infrastructure forward. Backward rural roads and scarce rural distribution sites have a major impact on produce output speed. Quality of produce fails to be assured. Roads linking villages and those linking villages with towns will be built, so that produce will be well connected with demand and delivery will be finished as quickly as possible after order placement. Secondly, due to the wide internet access gap between urban and rural areas, internet is not widely promoted in rural area and there are few farmers who are competent in online sales. According to statistics, there are 186 million rural netizens in China, and the internet coverage in rural area is 30%. In this regard, laying a network in rural areas is the premise for rural e-commerce development. With internet access, more farmers can search information, purchase and trade online, boosting rural e-commerce in a real sense.

#### IV. EXISTING PROBLEMS AND SOLUTIONS OF INTERNET + AGRICULTURE DEVELOPMENT

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##### A. *Enhanced Infrastructure Construction is The Powerful Guarantee for Produce E-commerce Development*

Rural infrastructure restricts the development of rural e-commerce. All infrastructures should be improved, and relevant supporting facilities should be developed in a timely manner. Internet access, road construction, express site planning and distribution are less common in rural areas than in cities. In this regard, it is advisable to promote hardware construction, deploy optic fibers, make internet more accessible, set express parcel receiving stations at post offices or convenience stores to strengthen goods distribution, build more roads to improve logistics distribution capacity, encourage enterprises to invest in trading distribution centers, outsourced logistics and cold-chain transportation, and build standard and intelligent agricultural production bases. Only with a solid foundation can rural e-commerce be booming.

##### B. *Developing a Produce Quality Standard and a Produce Traceability System is A Long-term Measure of Produce e-Commerce Development*

He Dehua, in his paper "Research on E-Consumption for Fresh Produce", states that the main factors influencing Chinese consumers' online produce purchase are expectation for product quality and safety, abundance of website information, expectation for quality package and logistics and expectation for price and discount. These are confirmed in Fei Xiaoyu's paper *An Analysis on Influence of E-service on Consumers' Willingness Regarding Online Purchase - A Case of Produce*. An evaluation system helps conclude that online

consumers desire quality produce. This is attributable to China's food safety issue, information asymmetry, and produce's being perishable and experience-oriented. Customers' demand forces the supply-side to comprehensively reform. Because of free-range cultivation, produce is not managed in a unified quality control standard, making it necessary for relevant departments to establish a full quality inspection system to strictly control quality and use QR code and technologies to identify produce and make the origin traceable. Only if quality is assured can produce sell well and famous produce e-commerce brands come forth.

##### C. *Training Rural E-commerce Leaders is Essential to Produce E-commerce Boom*

Human resource is the most important productivity. Now, Taobao and JD.COM have established e-commerce service stations and e-commerce classrooms in over 1,000 villages and towns. As the potential target groups to be engaged in produce e-commerce are mostly farmers who know nothing about computer or business, there is a serious lack of rural e-commerce leaders. It's vital to train talents. Local governments shall work actively to work with enterprises to educate farmers, set up training sessions and mobile schools, offer dedicated fund to encourage more farmers to be involved in e-commerce classes, bring along and retain e-commerce talents, pay irregular visits to farmers to timely address the problems baffling them in the era of informationized produce, invite agricultural specialists to give lectures guiding the scientific production for farmers and establish a learning chain covering production, sales and logistics to promote produce.

#### V. CONCLUSION

Produce e-commerce in China is in infancy, with a huge room for development. By referring to main papers, the author holds that development of internet + agriculture plays an important role in developing rural economy. Governments at all levels should take full-on multi-channel approaches, and build famous villages and towns with access to information, logistics and high-quality products by starting from improving rural infrastructure, establishing produce quality standard system and production traceability system, and seeking rural e-commerce leaders. These done, the past dilemma that produce could not be sold will disappear, which catalyzes local economy, guides villagers who go out to work to return and facilitates rural economy to take off.

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