

# Study on the Mode of “Internet + Circulation” Serving Agriculture

## —Analysis of Four Typical Cases in Jiangsu Province

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### Abstract

In order to analyze the spatial characteristics of “Internet + circulation” servicing agriculture, the purchase and sale activities of “Internet + circulation” enterprises servicing agriculture can be divided into four modes: “buy the local, sell the local”, “buy the local, sell the whole country”, “buy the whole country, sell the local” and “buy the whole country, sell the whole country”, by the direction of commodity flow. Then, this paper analyzes the features of each mode in reducing circulation costs, food safety, brand and service, expanding the scope of purchase and sale, collecting information, etc. Finally, the optimization strategy of each mode was put forward.

### Keywords

Internet + Circulation, Serving Agriculture, Commodity Flow, Mode, Optimization Strategy

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## 1. Introduction

There are still some problems in the trade of the merchandise related agriculture. Since the reform and opening up, China’s agricultural production has made remarkable achievements. The output and the per capita output of major agricultural products have increased significantly, and the agricultural structure has been constantly optimized. Agricultural development has gradually shifted from relying on resources mainly to relying on technological progress mainly [1]. However, there are still some problems around the supply of materials used in agricultural. The manufacturing and selling of counterfeit agricultural materials has been banned repeatedly, but the actions have little effect [2]. And the quality of agricultural materials has not been guaranteed [3]. The problem of the diffi-

cult marketing of agricultural products has not been solved fundamentally, and it is still one of the key problems that restrict the income of farmers [4]. The Ministry of Agriculture and the National Health and Family Planning Commission have adopted a series of measures in the field of agricultural products safety, but the risk of agricultural products caused by pesticide residues and other problems continues to affect the safety level of agricultural products [5]. Food safety related to the safety of agricultural products has been the top of the most worrying ten security issues in China for five years consecutively [6].

E-commerce has an important impact on the trade of the merchandise related agriculture. The rapid development and extensive application of Internet technology provide new thinking, new driving force, new approaches and new model and promote the upgrading of traditional industry [7]. The rural E-business with the help of Internet technology has an important impact on the purchase and sale of farmers and agricultural materials selling of enterprises. The scope of the procurement and sale of merchandise related agriculture have specific spatial characteristics. Therefore, there are three problems in this area worthy of further study. First, according to the flow characteristics of the merchandise related agriculture, what kinds of mode the “Internet + circulation” enterprise services agriculture can be divided into? Second, what is the impact of different modes of the “Internet + circulation” enterprise services agriculture on the inspection and traceability of merchandise quality, agricultural product sales range, agricultural product brand construction, and even the collection of product purchase and marketing information? Third, How to optimize the different modes?

In order to analyze the above problems, this paper chooses four “Internet + circulation” enterprises serving agriculture in Jiangsu province which is one of the most developed provinces in China. At the same time, the difference of economic and social development between different regions within the province is very significant. Among the four “Internet + circulation” enterprises, one is distributed in the developed areas of South Jiangsu, and three are distributed in the developing areas of North Jiangsu. The combination types of the spatial characteristics of merchandise related agriculture purchase and sales include four possible types. The choice of study area and the research enterprises is reasonable. The four “Internet + circulation” enterprises are divided into four modes according to the combination of the spatial characteristics of purchase and sales of merchandise. And the influence of the above models on the circulation of agricultural products, display and display of commodities, quality inspection and quality traceability, and brand building of agricultural products are analyzed. This paper puts forward a new division method of the “Internet circulation” company mode and provides a new perspective for analyzing the effects of “Internet circulation” on developing modern agriculture and ensuring the safety of agricultural products.

## 2. Literature Reviews

“Internet + Circulation” has an important impact on the purchase and sale of the

merchandise related agricultural. The Internet is open, free connection, and without time and space limit, no geographical distance concept [8]. In real life, many products or services sold through the Internet can also be sold through physical stores, and means that the contents of the Internet market overlap with the traditional market [9]. The most direct manifestation of the development of the network economy is the innovation and leap of the development and operation mode of the traditional electronic commerce [10]. The Internet platform can effectively expand the marketing channels of agricultural products and broaden the channels for the spread of agricultural products [11]. E-business provides a new way to innovate of the marketing model of agricultural products and solve the problem of small farmers' production and the big market; it can improve the intelligentized level of agricultural production and provides a new way to ensure food safety [12]. The operation of E-commerce leads to the reforms of the mode of consumer purchase decision, the mode of leisure agriculture operation and the marketing mode of leisure agriculture project [13]. There are a variety of business models in the fresh supermarket under the Internet + background: the mode of O2O (online and offline) sales based on the consumer convenience in "Internet +" supermarkets, the mode of customized and fine processing sales of based on consumer personalized demand in "Internet plus" supermarket, and the mode of C2B sales based on consumers' experience needs mode in "Internet +" supermarket [14]. The Internet has evolved the traditional purchase logic which is from the brand to the product to the Internet purchase logic from the product to the brand, and makes the brand have a strong plasticity [15]. In addition, the academic community has also studied the impact of Internet group purchase [16] and the farmers' application of the Internet [17] on agricultural products sales.

E-commerce enterprises servicing agricultural have different models. From the operating mode, E-commerce enterprises can be divided into E-shops, E-procurement, virtual community and other 10 kinds of modes [18]. From the perspective of profitability, E-commerce enterprises can be classified into seven modes: commission, commodity markup, consulting intermediary, and fee-based service [19]. The highest acceptance, the most commonly used is based on the main transaction of the e-commerce model [20]. Initially, people classified E-commerce into two modes: B2C mode and B2B mode. Among them, B2C mode was concentrated in the United States while Europe focused on B2B mode [21]. Subsequently, people divided the E-commerce enterprises into B2B, B2C and C2C mode, according to the subjects of the transaction [22]. There are four types of E-commerce modes, including B2B mode, B2C mode, B2G mode and C2G mode [20] [23] [24]. And there are also four types of modes, including B2B mode, B2C mode, C2C mode and B2B2C mode [25], and four types of B2B mode, B2C mode, C2C mode and B2G mode [26]. Based on the spatial position of the main transaction, E-commerce is classified into three modes: city E-commerce, county-township E-commerce and cross-border E-commerce [27]. In addition, there are a variety of E-commerce mode classification methods,

such as classification based on value chain, the original mode, old and new modes, control, Internet business functions and B2B, B2C modes, etc. [28] [29]. There are many classification methods and results of the mode of e-commerce of agricultural products, such as, the e-commerce platform mode expanding to agriculture, the e-commerce platform mode of transformation and upgrading of traditional agricultural market and e-commerce mode of agricultural products [30]. According to the online and offline integration of e-commerce enterprises, the e-commerce mode of agricultural products can be classified into Online to Offline mode, Offline to Online mode, Offline to Online to Offline mode, Online to Offline to Online mode, etc. [31]. In addition, the e-commerce mode of agricultural products and its improvement have also attracted much academic attention [32].

In summary, the academic circles have made a pioneering study on the influence of the Internet on the sale of agricultural products, the sales model of fresh supermarket, the brand construction of agricultural products, and the model of the Internet trading company. These studies have a positive effect on people's accurate understanding of the characteristics of the "Internet + circulation". Internet technology has played a very important role in changing the traditional purchase and sale of merchandise related agricultural. The spatial characteristics of the "Internet + circulation" purchase and sale of goods affect the institutional settings for online and offline activities, the location selection of the experience store off line, the management of commodity quality, brand construction, after-sales service and the information collection and so on. So far, there is no research about the spatial characteristics of commodity procurement and sales activities of "Internet + circulation" company published in public. For this reason, there are three problems need to be studied. First, according to the spatial characteristics of the merchandise related agricultural procurement and sales activities, what kinds of mode the "Internet + circulation" enterprise services agricultural can be divided into? Second, what is the impact of different modes of the "Internet + circulation" enterprise services agricultural on the inspection and traceability of merchandise quality, agricultural product sales range, agricultural product brand construction, and even the collection of product purchase and marketing information? Third, How to optimize the different modes?

### 3. The Mode of E-Commerce Serving Agriculture

E-commerce can serve agriculture deeply in all aspects of agriculture industry, including agricultural production, sales, circulation and other links. Based on the survey of three cities in Jiangsu Province, Zhenjiang, Huai'an and Yancheng, we found significant differences in the spatial characteristics of merchandise purchase and sale activities as a result of the different fields of service and their service target of the mode of e-commerce serving agriculture. According to the spatial characteristics of the commodity purchase and sale activities in the process e-commerce serving agriculture, we select Huai'an Mei-xianjia Co., Ltd.,

Huai'an Supply-and-Marketing E-commerce Co., Ltd. and Zhenjiang Yafu Online Industry Co., Ltd., Yancheng Xin-hezuo E-commerce Co., Ltd. four representative cases for comparison (Table 1).

According to the four agricultural-related e-commerce products flow it can be classified into four modes: local purchase and local sale mode, local purchase and countrywide sale mode; countrywide purchase and local sale mode and countrywide purchase and countrywide sale mode (Table 1).

### 3.1. The Mode of Local Purchase and Local Sale

In this mode, we select Huai'an Mei-xianjia E-commerce Development Co., Ltd. as a typical case, which is located in Huai'an City E-commerce Industrial Park. It is an e-commerce enterprise mainly engaged in local food, vegetables, meat, aquatic products and other agricultural products sold locally. The company purchases agricultural products mainly from the local agricultural cooperatives, farms, large farming households and ordinary farmers and other agricultural products production units. At present, the supply of agricultural and sideline products has reached more than 3000.

The company sales agricultural products to the local ordinary citizen and collective canteens etc., it provides the family kitchen, collective canteens (hotels, weddings and funerals, schools and military kitchen, government canteens, etc.), as well as enterprises and institutions with one-stop customized shopping services. The company's sales business is classified into three kinds: First, delivering

**Table 1.** Modes of the e-commerce serving agriculture.

E-commerce mode	Typical case	Purchase		Sale		Offline display center		Quality inspection organization	Enterprise brand
		Supplier	Area	Consumer	Area	Yes/No	Area		
Local purchase and local sale mode	Huai'an Mei-xianjia E-commerce Development Co., Ltd.	Agricultural products production units	Local	Local ordinary citizens, collective canteens	Local	Yes	Local downtown, living areas	Yes	No
Local purchase and countrywide sale mode	Huai'an Supply and Marketing E-commerce Co., Ltd.	Native products production units	Local	Specialty agricultural product consumers	Countrywide	Yes	Local scenic spots, airport and bus station	No	No
Countrywide purchase and local sale mode	Agricultural Resources Benefit Project of Zhenjiang Yafu Online Industrial Co., Ltd.	Agricultural materials production corporation	Local and foreign	Agricultural management unit	Local	Yes	Local towns and villages	No	No
Countrywide purchase and countrywide sale mode	Yancheng Xin-hezuo E-commerce Co., Ltd.	Snack food supplier	Local and foreign	Snack food consumers	Local and foreign	No	-	No	Yes

Data sources: according to the field survey and analysis.

agricultural products to local kindergartens, primary and secondary schools, government agencies and other unit canteens directly. The second is providing community residents with fresh vegetables, grain and oil and other agricultural products. The third is providing customized services for the generation after 80, 90 and other consumer groups having special needs. The company serves more than 300,000 people.

Huai'an Mei-jiaxian E-commerce Development Co., Ltd. built warehousing, cold chain logistics, agricultural product quality testing center, franchisees and living experience museums in city center. At present, there are more than 10,000 square meters of warehousing in Huai'an urban area and more than 10 refrigerated trucks in the transportation of vegetables, grain and oil. In the urban cold-chain logistics center, the agricultural product quality testing center tests every batch of vegetables for quality and transmits testing data to the municipal food and drug administration in a timely manner. In the urban areas and the surrounding towns, it establishes more than 30 fresh franchise stores, which have the function of an offline display center at the same time. The Mei-jiaxian fresh living museum, located in the downtown, includes lozenge zone, baking zone, standardized vegetable zone, standardized fruit zone, aquatic seafood zone, fruit salad zone, dry seasoning zone, cloud kitchen and other more than 20 functional areas. At the same time, live, self-help kitchen, on-site processing and other demonstration functions and self-help function are embedded in the fresh living museum, providing consumers with fast, safe, transparent, trustworthy and efficient service. The Mei-jiaxian fresh living museum also provides VIP with free vegetables washing, cooking, packing, juice and other eight VIP services.

Although agricultural products are transferred from other field when the supply of local is tight, the Mei-jiaxian company mainly sells local agricultural products and the sales scope is also on the spot. Therefore, the mode of commodity purchase and sale activities has the spatial characteristics of local purchase and local sale which is called L2L e-commerce mode (**Table 1**).

### **3.2. The Mode of Local Purchase and Countrywide Sale**

Huai'an Supply and Marketing E-commerce Co., Ltd. is a typical case of the model. The company was established in September 2015, and China Supply-and-Marketing E-commerce Co., Ltd. invested in capital in May 2017. The company is located in Huai'an District, Huai'an City, Jiangsu Province, closed to Huai'an Zhou En-lai Memorial Hall, Huai'an High Speed Rail Station under construction and the Beijing-Shanghai expressway Huai'an exit. Taking advantage of geographical advantages, the company specializes in selling local agricultural products such as high-quality local rice, meat, aquatic products and special agricultural products to E-commerce enterprises online outside the region. Its suppliers of specialty agricultural products are local native products production units and commodities sales targets for consumers across the country.

The company headquarters has a 7000 square meters of e-commerce building and a more than 3000 square meters of logistics and distribution center. In order to organize fresh and high-quality supply sources, more than 20 town-level franchise outlets have been set up, more than 120 village-level e-commerce service stations have been established throughout the city. In the city, it establishes many Huai'an specialty agricultural products marketing centers which have a total of more than 2000 square meters showing visitors Huai'an agricultural products in a number of scenic spots. The company builds tourist restaurants which have 1500 square meters totally, and provides visitors with a series of dishes made of Huai'an specialty agricultural products at low prices, near the Zhou Enlai memorial hall, former residence of Wu Chengen, Huai'an Airport, Huai'an High Speed Rail Station and other major attractions and transportation hubs. With the excellent tourist resources of Huai'an City and the brand effect of Huaiyang Cuisine, Huai'an specialty agricultural products are promoted to the whole country and even overseas by the way of tourists enjoying Huaiyang delicacies.

Huai'an Supply and Marketing E-commerce Co., Ltd. sales of high quality specialty agricultural products are supplied by the local agricultural production units, sales across the country, and even overseas. Therefore, the commodities purchase and sale activities have the spatial characteristics of local purchase and sale all over the country. Therefore, it is called local purchase and sale country-wide mode (**Table 1**).

### **3.3. The Mode of Countrywide Purchase and Local Sale**

Agricultural Resources Benefit Project of Zhenjiang Yafu Online Industrial Co., Ltd., headquartered in Runzhou District, Zhenjiang City, is the representative case of the mode. The company, relying on the Supply-and-Marketing e Home of national Supply-and-Marketing cooperatives, the horizon of Supply-and-Marketing cooperatives in Jiangsu Province and Zhenjiang Yafu Online, is a network service platform specializing in sales of fertilizers, pesticides, seeds, plastic sheeting and other agricultural means of production. The agricultural materials, whose suppliers are the production unit of local and foreign agricultural products, are sold to local agricultural cooperatives, farms, large-scale farming households and ordinary farmers in Zhenjiang.

Agricultural Resources Benefit is an e-commerce enterprise selling fertilizers, pesticides, seeds and other agricultural products in local areas, which operates online and offline synchronously. Currently, Agricultural Resources Benefit has set up 32 standardized service outlets in the central towns of three districts and three cities under the jurisdiction of Zhenjiang City (including 1 in Runzhou District, 7 in Dantu District, 12 in Danyang City, 9 in Jurong City and 3 in Yangzhong City), and established more than 80 primary service outlets in other towns and villages. Standardized service outlets and grassroots service outlets have the function of agricultural product exhibition center.

On this basis, the Agricultural Resources Benefit Project plans to establish Zhenjiang agricultural production materials corporate to undertake the local reserve tasks of agricultural materials such as chemical fertilizers, pesticides and seeds and to gradually promote the construction of zero-slip agricultural resources central distribution system. The Agricultural Resources Benefit also has agricultural technology service, which can carry out services such as soil testing and formulating, agricultural technical guidance, agricultural production information dissemination and farmer technical training. In 2016, sales of Zhenjiang Yafu Online Industry Co., Ltd. were more than 20 million yuan, profiting about 1.5 million yuan. While obtaining good economic benefits, the outlets of Agricultural Resources Benefit cover Zhenjiang City, making positive effects on the use of high-efficiency, low-toxicity biological pesticides, eliminating the inflow of high-toxic and high-residue pesticides into the local agricultural market, ensuring the local food safety.

Agricultural Resources Benefit purchases agricultural means of production such as chemical fertilizers, pesticides and seeds which were sold in all townships and towns in Zhenjiang, from all over the country were sold. The purchase and sale of commodities in this model showed the spatial characteristics of purchasing in the country and selling in local areas of agricultural products, which is called the mode of countrywide purchase and local sale (**Table 1**).

### 3.4. The Mode of Countrywide Purchase and Countrywide Sale

Yancheng Xin-hezuo E-commerce Co., Ltd. is the typical case of this mode. Company is located in Chengguan Town, Sheyang County, Yancheng City, mainly engaged in online sales of snack foods. The raw materials of snack food, whose clients are consumers across the country, are supplied by the relevant online suppliers.

In July 2014, Sheyang County Supply and Marketing Cooperative invested 7.5 million yuan to establish Yancheng Xin-hezuo E-commerce Co., Ltd. The company introduced e-commerce operators, set up an e-commerce operations team, and set up a corporate office center, the company's web site, sub-seized and packaging workshop, cold chain logistics, warehousing and so on. Through the well-known e-commerce platforms such as Jingdong, Taobao, No. 1 Mall, Alibaba, Meituan, Nuomi, Dianping and other platforms, the company sells different flavors of sunflower seeds, walnuts, Northeast pine nuts, Hawaiian nuts, macadamia and more than 20 kinds of snack foods. In the package, there are small packages, food portfolio, snack spree and other different styles. **The sale of snack foods is crowned with Zhao Qi brand**, in order to create a healthy and green agricultural products brand.

Since the official operation of the company, the influence of Zhao Qi brand has been continuously increasing. It has accumulated more than 300,000 consumers across the country, which is still increasing. During Double 11 in 2015 and 2016, the company accepts over 10,000 orders every day. In August 2017, the company accepted orders of more than 1500 every day.



The raw materials suppliers of Yancheng Xin-hezuo E-commerce Co., Ltd. throughout the country, and the scope of sales also cover the whole country. The mode has the spatial characteristics of purchasing raw materials from the country and selling products across the country, which is called countrywide purchase and countrywide sale mode (Table 1).

#### 4. The Effect of E-Commerce Serving Agriculture

The above analysis shows that there are four different spatial characteristics in the Internet + Commerce agricultural procurement and marketing activities, namely four different modes. Each mode has different effects in terms of commodity circulation, food safety, brand and services and information accumulation. Therefore, we analyze the strengths and weaknesses of each mode (Table 2).

##### 4.1. The Effect of Local Purchase and Local Sale Mode

Huai'an Mei-xianjia E-commerce Development Co., Ltd. is a typical case of the local purchase and local sale mode, because of its unique spatial characteristics of buying and selling activities. In the circulation of commodities, food safety, brand and service and information accumulation, this mode has specific advantages and shortcomings.

**Table 2.** Effects of strengths and weaknesses of the four modes.

Mode	Local purchase and local sale mode	Local purchase and countrywide sale mode	Countrywide purchase and local sale mode	Countrywide purchase and countrywide sale mode
Circulation of commodities	Reducing the circulation costs of agricultural products, but it is unfavorable to expand the scope of purchase and sale of goods.	Reducing the circulation cost of agricultural products, and it is favorable to expanding the scope of sale of goods.	Reducing the circulation cost of agricultural products, and it is favorable to expanding the scope of purchase of goods.	Reducing the circulation cost of agricultural products, and it is favorable to expanding the scope of purchases and sales of goods.
Food safety	This mode has quality test before the sale of agricultural products, but the quality of agricultural products cannot be controlled from the source.	The quality of agricultural products is traceability after sale, but it cannot be controlled from the source.	The quality of agricultural products is traceability after sale, and it also can be controlled from the source.	The quality of agricultural products is traceability after sale, but it cannot be controlled from the source.
Brand and service	The brand consciousness is weak, providing related cooking technology and nutrition knowledge, and the service content needs to be enriched.	The brand consciousness is weak, providing related cooking technology and nutrition knowledge, and the service content needs to be enriched.	The brand consciousness is weak, it can carry on the agricultural technology promotion, and the agricultural information dissemination, the service content needs to be rich.	The brand consciousness is strong, providing the relevant food nutrition knowledge, the service content needs to be rich.
Information accumulation	Accumulate a large number of agricultural production information and consumption information in a specific area, the value of direct utilization of information is high.	Accumulate a large number of sales information of specific agricultural products in a specific region, the value of direct utilization of information is high.	Accumulate a large number of demand information and production information of specific agricultural products in a specific region, the value of direct utilization of information is high.	Accumulate a large number of sales information of specific agricultural products throughout the country, the value of direct utilization of information is low.

Data sources: according to the field survey data collation and analysis.

First of all, this mode reducing the circulation costs of agricultural products. The application of the company makes it a bridge and link between farmers and consumers of agricultural products, shortening the circulation of agricultural products, reducing the circulation cost and the price of agricultural products, which improving the competitiveness of agricultural products and the development of regional agriculture. In addition, the company serves 300,000 people in the urban area. The huge purchasing volume makes it strong bargaining power, which decreases the price of agricultural products.

Second, this mode is unfavorable in the geographical expansion of the purchase and sale of goods. The mode mainly purchases agricultural products from the local area. Although a certain amount of vegetables and aquatic products need to be imported from other places when the local agricultural products are in short supply, the major suppliers are locally-located, which makes it difficult to expand the procurement scope of the products. In addition, the company's sales target is mainly the local collective food units and ordinary residents, which is difficult to expand the sales scope of local agricultural products.

Third, this mode ensures food safety. Huai'an Mei-xianjia E-commerce Co., Ltd. has its own agricultural product quality testing center, which conducts quality test before the sale of agricultural products. In addition, the company signed a cooperation agreement with the suppliers of agricultural products, and the quality of agricultural products can trace back to after-sales, to some extent, ensuring food safety. However, this mode cannot control the use of chemical fertilizers and pesticides in the process of agricultural product production, that is, the quality of agricultural products cannot be controlled from the source.

Fourth, it provides customers with better service. Hiring professionals to purchase agricultural products can increase the quality of the agricultural products they purchase. Providing generations after 80, 90 and other special consumer groups with customized raw and cooked dishes and guidance of operation can meet the needs of different customers and enrich people's lives.

Fifth, it can accumulate agricultural production and sales information. This mode can accumulate a large number of agricultural production information and consumption information in a specific area. Due to the large proportion of the amount of agricultural products purchased and sold by the company, the information has great statistical significance and can be directly used to analyze the production and consumption of agricultural products in the region, where the value of direct utilization of information is high.

#### **4.2. The Effect of Local Purchase and Countrywide Sale Mode**

The mode of local purchase and countrywide sale, represented by Huai'an Supply-and-Marketing E-commerce Co., Ltd., has specific spatial characteristics. It has certain advantages and shortcomings in terms of commodity circulation, food safety, technical service and information accumulation.

First, it can reduce the costs of flow of agricultural products. The platform connects the production and consumption of specialty agricultural products di-

rectly, reducing the circulation steps. The establishment of exhibition hall, tourist restaurant in tourist attractions, airports and stations, etc. allows foreign consumers to directly experience the quality agricultural products in the region, reducing its circulation costs.

Second, it is conducive to the integration of different industries. It is conducive to combining the sales of high quality specialty agricultural products with the tourism, catering and service industries by the construction of exhibition halls, and tourist restaurants in tourist attractions, airports and stations, which benefit the integration and development among different industries.

Third, this mode ensures food safety. Huai'an Supply-and-Marketing E-commerce Co., Ltd. establishes a number of affiliate outlets and village-level E-commerce service points in the city, thus, agricultural products of different sources can be traced back to sources. Because the company does not have a quality inspection agency, it lacks the quality control before sales of agricultural products and cannot control the quality of agricultural products from the source.

Fourth, it provides certain services for customers. In order to sell high-quality and characteristic agricultural products, e-commerce companies have introduced their specialties based on agricultural products as well as their cooking techniques and nutrition knowledge to provide customers with appropriate cooking knowledge, enriching people's material life and promoting the spread of food culture.

Fifth, it promotes the accumulation of certain agricultural product sales information. This mode accumulates sales information of certain agricultural products sold all over the country and is of great significance to optimizing the structure of local agricultural production and formulating the marketing strategy of high quality and characteristic agricultural products. Because of the low share of agricultural products sold in the national market, the value of direct use of this information in other regions is limited.

### **4.3. The Effect of Countrywide Purchase and Local Sale Mode**

Agricultural Resources Benefit Project of Zhenjiang Yafu Online Industry Co., Ltd. is a typical case of the mode of countrywide purchase and local sale. The spatial characteristics of the purchase and sale activities leads to its advantages and disadvantages in the aspects of commodity circulation, food safety, brand and service, information accumulation and so on.

First, it can effectively reduce the circulation costs of agricultural materials. The model links local agricultural production enterprises with local agricultural production enterprises. On the one hand, it will reduce the circulation of agricultural materials and reduce the circulation costs of agricultural materials; on the other hand, it will help lower the prices of agricultural resources by expanding the scope of procurement of agricultural materials, increasing the amount of agricultural materials purchased and further enhancing the bargaining power with manufacturers.

Second, it ensures the quality of agricultural resources. Due to the centralized procurement of agricultural resources in the region, the purchasing amount of agricultural materials is large, the supply and marketing links of agricultural materials are few, and the reliability of agricultural materials quality is strong, which can ensure the quality of the agricultural materials sold.

Third, it ensures food safety. Through agricultural technology services, such as soil testing and formulating services, it can effectively control the use of fertilizers and pesticides, restrict the use of highly toxic and highly residual pesticides to ensure the quality of agricultural products from the source, having a positive effect on food safety.

Fourth, it provides certain technical services for the main agricultural operators. In order to sell agricultural products, this mode provides Agricultural business households with agricultural technology promotion, agricultural information dissemination, soil testing and fertilizer application and other services, which is conducive to the progress of regional agricultural production technology.

Fifth, it can accumulate regional agricultural demand and agricultural production information. Information such as chemical fertilizers, pesticides and seeds in the area can be obtained. With the number of seeds in the area, information such as planting area and planting structure can be obtained. These information are of high direct value but difficult to obtain regional agricultural product sales information.

#### **4.4. The Effect of Countrywide Purchase and Countrywide Sale Mode**

The model of e-commerce service agriculture, countrywide purchase and countrywide sale, represented by Yancheng Xin-hezuo E-commerce Development Co., Ltd., has certain advantages and disadvantages due to the specific spatial characteristics of its procurement and sale activities.

First, it can reduce the cost of goods circulation. A nationwide platform for establishing links between snack food suppliers and snack food consumers can reduce the merchandise circulation links; expand the scope of procurement and sales of commodities, reducing the level of distribution costs effectively.

Second, to some extent, it ensures food safety. Through online shopping, online sales, the quality of the goods sold can be traced back. However, quality control cannot be done before sales and food safety cannot be guaranteed at the source.

Third, it provides certain services for customers. In order to sell snack foods, this mode provides the nutritional knowledge of snack foods, taboos when eating, etc., which have a positive effect on enriching people's daily life.

Fourth, it has strong brand awareness. The model registered Zhao Qi brand when operating. Through vigorous promotion of the brand, the recognition of the brand continues to increase, making the sales of snack foods of Zhao Qi brand growing.

Fifth, it accumulates certain product procurement and sales information. The company has accumulated a certain amount of raw materials procurement information and product sales information, playing a guiding role in improving the quality of raw materials purchased. Because of its sales all over the country, and sales accounted for a low proportion, the accumulated information has a certain role in developing product sales strategy, but the role is limited.

## **5. The Optimization Strategy of Operating Mode of Agricultural Electricity Supplier**

The above analysis shows that all four modes of e-commerce serving agriculture have their unique advantages and disadvantages. Therefore, they need to be optimized.

First, from point of view of single mode, it is need to further enrich the service content. For example, the mode of local purchase and local sale can add specialties, nutrition packages and other services, in order to meet the needs of different consumer groups. The mode of local purchase and countrywide sale can add the service such as online chef and health care, in order to strengthen the combination of regional agricultural products with food culture, health care and other knowledge, and promote the regional special agricultural products to a broader area. Based on the soil testing and formula fertilization, the countrywide purchase and local sale mode can carry out soil zoning and establish corresponding database and simulation technology. According to crop growth, temperature, precipitation, soil characteristics and regional pest and disease conditions, simulation technology can simulate dynamic changes in the process of nutrient changes and the development of pests and diseases, in order to precise fertilization, accurate medication, improving fertilizer efficiency and agricultural product quality.

Second, from the industrial chain, a variety of modes need to be integrated. The above several modes serve different links of agricultural production and sales respectively, and their integration can exert their respective advantages and avoid their shortcomings. For example, the combination of countrywide purchase and countrywide sale mode with the local purchase and local sale mode, or the local purchase and countrywide sale can control the quality of agricultural products, not only from the source, but also before and after the sales of agricultural products. The information of production and sales of agricultural products can be collected. According to the characteristics of regional, national and even international economic and social changes and the regional brand characteristics of agricultural products, it can determine the crop varieties and areas, to avoid major fluctuations in agricultural markets. E-commerce serving agriculture will be expanded to e-commerce serving agriculture, rural areas and farmers, providing farmers with online financial services and rural pension services.

Third, from the perspective of technical development, it needs to strengthen the use of new technologies. In various modes of e-commerce serving agriculture, the Internet technology can be connected with the Internet of things, GIS

technology, remote sensing technology, cloudy computing technology, Big Data and so on. The integration of Internet technology and Internet of Things technology can monitor sowing, nursery, fertilization, pest control in the agricultural production process, having a positive effect on improving the quality of agricultural products, brand awareness and recognition. According to the crop production process, soil conditions, fertilizer and pesticide, changes in temperature and precipitation, the integration of Internet technology and GIS technology, remote sensing technology can perform simulation and forecasting of soil, nutrition of surface water and groundwater, pollutant concentration. The simulation process and results provide guidance for the agricultural production, promoting the refinement of agricultural production process, precision and standardization services. The appliance of the process and results in agricultural products sales step, in order to judge the quality of agricultural products and services accurately, improve brand awareness of agricultural products. The combination of big data and cloud computing technologies with Internet technologies can predict the characteristics and market conditions of specific agricultural products in specific regions, helping people arrange agricultural production and consumption reasonably.

## 6. Conclusions

First, according to the spatial characteristics of the commodity procurement and sales, the E-commerce serving agriculture is divided into four modes: “buy the local, sell the local”, “buy the local, sell the whole country”, “buy the whole country, sell the local”, “buy the whole country, sell the whole country” and so on. In the Midwest rural areas where agricultural products are difficult to sell, we should focus on developing “buy the local, sell the whole country” type “Internet circulation” enterprises, so as to solve the problem of sales of agricultural products. In the main producing areas of agricultural products with large area of cultivated land, we should focus on developing the “buy the whole country, sale the local” type “Internet + circulation” enterprises, and improve the quality and efficiency of agricultural material supply.

Second, the four modes of “Internet + circulation” enterprise service agriculture have their own advantages in expanding the scope of agricultural products purchase and sales, product quality management and control, brand building and sales information collection. Therefore, the government should strengthen the integration of the four modes so as to make the “Internet + circulation” enterprises play the positive role in serving agricultural production and ensuring food safety.

Third, from the perspective of commodity quality control and brand building, the “buy the local, sell the local” type “Internet + circulation” enterprises have the commodity quality testing system, and “buy the whole country, sell the whole country” type “Internet + circulation” enterprises pay more attention to brand building. The government should introduce corresponding policies to

strengthen the quality management and control of the commodities sold by the “Internet + circulation” enterprises, and actively guide the enterprises to focus on brand building and the brand strategy making.

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