PEST-based Analysis of the Competitive Environment for E-commerce in China's Agriculture

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Abstract. E-commerce in agriculture is an advanced business model that can improve the outstanding contradictions in the market circulation of agricultural goods in China. Chinese agricultural e-commerce is still at the primary development stage of online agricultural business information services. The study uses the PEST analysis tool of competitive intelligence theory, the author analyses the macro-competitive environment of Chinese agricultural e-commerce industry from four perspectives: political, economic, social and technological. The results of the study show that although there are still many shortcomings in the credit system and standardisation of products from agriculture sold online in China, the basic hardware conditions are already in place. The largely conventional ideologies of farmers' users are the biggest barrier to the growth of agricultural e-commerce. Farming-related online shopping enterprises should fully recognise the need for agricultural e-commerce. They should help farmers change their traditional thinking and increase their understanding of agricultural e-commerce in accordance with national agriculture policies.

Keywords: E-commerce in agriculture; competitive environment; PEST analysis.

1. Introduction

Information technology develops rapidly which has contributed to the continuous improvement of the Chinese agricultural online trading volume in China. Since the 1990s, due to the fast development of the network and Internet economy, e-commerce has become an efficient and innovative marketing way that has received increasing attention. E-commerce is characterized by freedom, openness, high efficiency, and low cost from space and geography. Therefore, it can efficiently solve the problems of small circulation radius, high cost of dissemination and many intermediary links in the current flow of agricultural commodities in China. As a new model for the growth of modern agriculture, e-business in agriculture has modified the traditional way of consumption and effectively facilitated the circulation of goods in China's agricultural market. In this regard, e-trade and the integration of agriculture is an unavoidable trend. However, e-commerce in agriculture in China is still in the early stage and the actual operation still exists many problems [1]. In the long run, to grow agricultural electronic commerce, our nation and related departments must meet the challenges in the midst of opportunities and make appropriate adjustments on the basis of the original foundation to make agricultural e-commerce continuously adapt to the demands of social progress. With the transformation of modern agriculture in China and the change in people's consumption habits, how formulating agricultural e-commerce strategies in the new era and improving the level of competition in China's agriculture has become the focus of attention.

PEST analysis is a commonly used analytical tool that deals with four categories of factors: technological, economic, political, and social, which provide a general overview of the macro environment in which an industry or company is located. The authors aim to use this model to analyse the macro-competitive environment of China's agricultural e-trade industry and supply a benchmark for Chinese agribusiness e-commerce companies.to improve their competitiveness. This essay will take advantage of the PEST analysis method from the perspective of political, economic, social environment and technical perspective to investigate the developmental situation regarding e-commerce in China.

2. The Development of Electronic Trade in Agriculture

Foreign agricultural e-commerce started earlier, and the development is more mature. According to a survey, by 2001, there were 1,000 to 1,500 e-commerce websites in the food sector worldwide, accounting for 4% to 6% of the overall number of e-commerce sites around the world. The fastest-growing countries and regions are the United States and Europe. In the United States, due to the government's emphasis on the construction of rural information technology infrastructure, the scale of agricultural e-business in the United States has been in rapid development. In 2007, the number of farms engaged in online transactions in the US had reached 35%, up 3 percentage points from 2005 and much higher than the 20% in 1997. Europe is the fastest-growing region for agricultural e-commerce after the US. One of the more prominent agricultural e-commerce sites in Europe is Farm Online. In Asia, Japan and South Korea have also been developing e-commerce in agriculture in recent years. The Japanese Ministry of Agriculture, Forestry and Fisheries formulated a strategy on agricultural and rural informatisation in December 2000 to promote a fundamental change in the way agricultural products are distributed. The Korea Agriculture, Forestry and Fisheries Information Centre promoted online trading of agricultural products through an e-commerce platform in 2000. By 2004, Korea had established five agricultural e-commerce trading platforms of a certain scale. It shows that agricultural e-commerce in developed countries has reached a certain scale and has become an indispensable means of circulation for agricultural products.

After over a decade of growth, Chinese agricultural websites have basically covered all aspects of the agricultural sector. Agricultural e-commerce functions and rural information services have been increasingly enhanced. Many excellent websites providing agricultural e-commerce services have emerged, such as Nongbo.com, Jinnong.com and China Vegetable Market, which have a significant effect in revitalising the flow of agricultural goods and increasing the efficiency of agriculture and farmers' income. In recent years, Nongbo.com has played a key part in promoting the movement of agricultural products, improving farm efficiency and raising farmers' incomes. Among them, Nongbo.com has made many useful attempts in recent years to classify agricultural products online, negotiate and pay online. Its Nongbo Tong e-commerce platform has become the largest online trading platform for agricultural products in China.

3. PEST-based Competitive Analysis of Agricultural E-commerce in China

3.1 Political Environment Analysis

3.1.1 Establishment of a national e-commerce platform

The government in China is actively encouraging the establishment of e-commerce platforms. The State Council of the Communist Party of China and the Central Committee issued "Document No. 1" in which the construction of an e-commerce service platform for agricultural products is highlighted. It is mentioned in the document that the flow of agricultural products is organically combined with electronic information, actively creating a new agricultural economic model that combines online and physical transactions, and promoting the steady development of agricultural e-commerce in China. In the document, it is mentioned that the flow of agricultural products will be organically combined with electronic information to actively create a new agricultural economic model combining online and physical transactions, and to promote the steady development of agricultural e-commerce in China. In particular, with the current national strategy of "mass entrepreneurship and innovation", a large number of innovative and representative business platforms have emerged, which have laid a good foundation for developing agricultural e-commerce in China.

3.1.2 E-commerce legislation

E-commerce legislation is a positive way for the Chinese government to improve e-commerce. The Eleventh Five-Year Plan for E-commerce Development, released in 2007, sets out the principles for the growth of e-business in China.

In the meaning time, the process of e-commerce legislation has been stepped up in China, and the Contract Law was established to establish the lawful status of electronic contracts in 1999; the first full-fledged Chinese online business law was passed in 2005, that is, the Electronic Signature Law of the People's Republic of China. In April of the same year, the core of the Electronic Signature Law, the Administrative Measures for Electronic Authentication Services, was formally implemented.

3.1.3 The golden agricultural project

To further serve agricultural advancement in China, in 1994, the Ministry of Agriculture proposed the "Golden Agricultural Project". This system includes the construction of an agricultural monitoring and early warning system, an information system for the supervision of production materials, agricultural products, a rural market, and a technology and science information service system. In 2006, the Ministry of Agriculture released the "National Agricultural Information System Construction Plan for the Eleventh Five-Year Plan", which again included the construction of the "Golden Agricultural Project" as a priority. By the last period of the Eleventh Five-Year Plan, the service coverage of the "three-electricity-in-one" information platform will try to reach 2,000 counties, benefiting 140 million households and extending the agricultural information service network to more than 90 percent of administrative villages. The introduction and construction of the Golden Agricultural Project demonstrate the importance that the State attaches to the construction of agricultural and rural informatisation, and lays a certain foundation for the development of agricultural e-commerce in China.

3.1.4 National policies in favour of agriculture

The relevant policies reflect the importance of the reform of agricultural e-trade by the State. In 2016, the State Council and the Party Central Committee proposed in the No.1 Document to accelerate the progress of e-commerce in China's agrarian areas by supporting the platform construction of e-business for rural agricultural goods [2]. In May 2015, the Opinions on Vigorously Developing E-Commerce to Accelerate the Cultivation of New Economic Dynamics was issued by the State Council, which pointed out that: supporting the use of e-trade platforms to promote and sell geographical indication products, encouraging e-commerce platforms to serve "one village, one product" and promoting branded agricultural products [3]. In November 2015, the "Guiding Opinions on Promoting the Accelerated Development of Rural E-Commerce" was issued by the General Office of the State Council, which pointed out that: accelerating the development and application of grading and packaging and transportation standards for agricultural products adapted to e-commerce; encouraging and guiding e-commerce enterprises to open up online sales platforms for agricultural products with special characteristics in old revolutionary areas and poor areas; and encouraging supply and marketing enterprises to open up online sales platforms for agricultural products with special characteristics in old revolutionary areas and poor areas. Online sales platforms; encourage supply and marketing cooperatives to create e-commerce trading platforms for the products of agriculture [4]. In August 2018, the E-Commerce Law of the People's Republic of China, the first comprehensive e-commerce law in China, was passed, which mainly provides for five parts: e-commerce operators, e-commerce dispute resolution, the conclusion and performance of e-commerce contracts, e-commerce legal liability and promotion, which are of great importance in regulating e-commerce transactions in accordance with the law, maintaining the order of the e-commerce market and protecting the legitimate rights and interests of all parties to the transactions It is of great significance [5]. In February 2018, Opinions on the Implementation of Rural Revitalization Strategy were issued by the State Council of the Central Committee of the Communist Party of China, which pointed out that: vigorously building infrastructure with the extensive promotion of rural e-commerce development, support and encouragement all kinds of market entities to innovate and modified new agricultural industry models on the basis of the Internet, speed up the rural circulation's modernization, and thoroughly implement comprehensive demonstrations of e-commerce into rural areas [6]. In February 2019, the "Several Opinions of the Central Committee of the Communist Party of China and the State Council on Adhering to the Priority Development of Agriculture and Rural

Areas and Doing a Good Job in the "Three Rural Areas" was issued [7]. "In November 2021, the State Council issued the "14th Five-Year Plan" to promote a rural and agricultural plan which emphasizes the need to promote the modernisation of agriculture and rural areas with Chinese characteristics, ten strategic directions must be adhered to, based on the basic domestic solution to the problem of feeding the Chinese people, consolidating and improving the basic rural management system, guiding small farmers into the progress of modern agriculture, strengthening agricultural technology, science, and equipment support, promoting the development of the entire chain of agriculture, orderly promoting rural construction, strengthening and innovating rural governance, promoting the development of the town and country integration, sustainable development of rural and agriculture areas, and common prosperity of farmers and rural areas. The above analysis shows that the state is actively promoting the modernisation of agriculture by means of various policies, in order to escort the construction of a new socialist countryside.

3.2 Economic Environment Analysis

3.2.1 Increased information consumption by farmers

With the continuous increase in per capita income, people's information consumption costs are also increasing year by year. So far, China's per capita consumption has been growing "steadily and rapidly", with a survey showing that the net income of rural residents per capita is RMB 3,520, rose by 3.2% over the same period last year [8]. The rising income of farmers has increased the cost of information consumption, such as broadband internet, cable TV, and personal communication devices. Therefore, the development of agricultural e-commerce has been accelerated in the context of farmers' growing consumption of information.

3.2.2 The proportion of agricultural production in CDP is gradually decreasing

In the census, there are 90.807 million farmers in China, representing 65% of all residents of the country, but rural residents live in relatively scattered areas, and the arable land of each farmer's family is only about 0.6 hectares. This small farmer model of production and management in China's economic development has become increasingly unable to meet the requirements of China's market economy. The actual production process due to the difficulty of forming a production scale, and agricultural production efficiency is low. At the same time, because of the long production cycle of agricultural products, it is difficult for farmers to obtain knowledge from the constantly changing market supply and demand information, and they cannot adjust their production in time. In the context of the new era, the share of agriculture in CDP has been decreasing, from 9% in 2014 to 7% in 2017, and the importance of agriculture as a primary industry in China's production has been decreasing.

3.3 Social Environment Analysis

3.3.1 Awareness of e-commerce in agriculture

Currently, agricultural websites are mainly based on education and science, and comprehensive government models, and are still relatively conservative in terms of agricultural electronic information service providers. The complex agricultural environment in China is the main reason, both in terms of agricultural marketing and agricultural production, is still immature and there is no agricultural e-commerce model that is more suitable for the current situation.

3.3.2 Shortage of professional e-business talent in rural regions

People living in rural areas are generally less educated, with lower quality of literacy than the urban population, and even less understanding of the Internet, and no professional training in e-commerce, so the lack of information technology is also a serious obstacle to progress in rural e-business.

3.4 Technological Environment Analysis

3.4.1 The promotion of information and communication technologies

The progress of communication and information technology strongly supports the innovation of agricultural e-commerce in the technical aspects of China. In terms of communications, for example, broadband coverage in Chinese rural areas has reached 84.3%, with 216 million people having access to the Internet in rural areas, and 4G networks have achieved full coverage. It can be seen that the development of communication networks has brought new development opportunities for agricultural e-commerce in China. Meanwhile, with the growth of information technology, people can use it to develop different applications. Simultaneously, with the development of cloud computing, big data technology, data mining and other technologies, agricultural e-commerce applies a great deal of modern information technology, and thus agricultural data can be mined to better serve the needs of customers.

3.4.2 Payment systems

With the rise of major e-commerce platforms, people are gradually changing their traditional cash payment methods, and more and more people are using online payments, telephone payments, and mobile phone payments. However, at present, there are few online trading platforms for agricultural e-commerce, and most of them only support the "online trading, offline payment" model. The reason for this is that the majority of agricultural transactions are carried out by farmers, who currently have a low level of education and find it hard to adapt to new modern payment methods, and therefore maintain the traditional cash payment method.

3.4.3 Development of logistics technology

The level of development of e-commerce in a country can be judged by the level of its information technology and other science and technology and by investigating the scale and layout of a country's logistics system. The proportion of logistics and transport costs to a country's GDP is usually used to judge the maturity and development level of a country's logistics system. The higher the proportion of logistics costs to GDP, the more inefficient a country's logistics system is. As logistics is an indispensable transport link in the area of e-commerce, inefficient logistics often restricts the advancement of online business in a country.

4. Recommendations for Promoting E-commerce in Agriculture

4.1 Improve E-commerce Laws and Regulations

First of all, the concept of regulations and laws for farmers should be strengthened, with the fast growth of agricultural goods e-trade, its business model and characteristics, etc. are also gradually highlighted, and the application of various trading regulations in agricultural products e-commerce is also gradually improved, for which farmers themselves need to understand the regulations and laws based on e-trade of agricultural goods, but because the current laws and regulations of agricultural products e-business in China are not perfect, for which China Need to improve the relevant legal and regulatory provisions for the characteristics of agricultural products e-commerce, to build a good trading platform for consumers, and then to supervise and manage agricultural products e-commerce according to the laws and regulations currently formulated in China [9].

4.2 Strengthen the Training of Talents

The competition for talent is inseparable from any industry, and at present, most countries are strengthening the construction of talent. First of all, the agricultural e-commerce platform involves a wide range of people who need many complex talents; secondly, e-commerce is a new industry that has only emerged in recent years, and high-end talents need to be introduced to provide advanced decision-making for the evolution of the entire e-business enterprise. Finally, e-commerce is inseparable from grassroots support and action. Therefore, enterprises should establish a practical

talent mechanism, give full play to their own strengths to attract the best talent in the community, and set up internal staff incentive mechanisms and training mechanisms to build a strong cornerstone for the development of online business in agriculture [10].

4.3 Government Support and Collaboration

From top-level design to basic applications, governments should increase their efforts to favour, implement and regulate agricultural e-commerce policies, and sort out policy guidelines to ensure consistency. Further laws and regulations on products, enterprises, credit and consumer rights in agricultural e-commerce should be formulated to enable the standardised, orderly and high-quality development of agricultural e-commerce. Government-led, coordinated efforts to build a synergistic digital e-trade platform for agriculture.

4.4 Strengthen Agricultural Logistics Infrastructure Construction

Agricultural products are all physical products, and in order to realise agricultural e-trade, it is necessary to use the power of logistics to help transfer agricultural products through space. It can be said that logistics activities are the basis of agricultural e-trade, and the flow of agricultural goods, industrial management, technology and efficiency all have a great deal to do with logistics

5. Conclusion

In summary, the final realisation of the flow of agricultural commodities in the context of e-business is a long-term process, which is a long-term project that integrates complexity, comprehensiveness and long-term dryness. Therefore, we should actively do a good job in building a platform for the movement of agricultural goods in the context of online trade, effectively strengthen the construction of an online business platform for agricultural produce, select high-quality and safe agricultural goods, do a good job in the fine processing and packaging of distribution centres, strive to achieve a seamless connection between the processes in the whole transaction process, and according to the current situation of market demand, formulate a reasonable and convenient distribution plan and carry out effective product marketing work. In addition, it is also necessary to actively develop a work plan for the promotion of the e-commerce model for agricultural products, i.e. government departments should provide policy support in terms of information infrastructure construction, taxation and financing, vigorously improve the informationisation of the agricultural products distribution industry, encourage and support the advancement of the third-party logistics industry, and at the same time, government departments should continue to revise and improve the corresponding laws and regulations to lend a powerful hand in building and successfully implementing the agricultural products distribution model within the framework of e-commerce. In the meantime, government departments should continue to revise and improve the corresponding laws and regulations to offer solid legal backing for the creation and well-coordinated growth of the online agriculture movement model. This study is of great significance for promoting the development of agricultural e-commerce in China. This study did not classify the types of agricultural products when analyzing the development environment and suggestions for agricultural e-commerce. The future research can be further conducted on the basis of the discussion on the classification of agricultural products.

References

[1] Zheng Duan. Analysis of agricultural products sales logistics for e-commerce. Shaanxi Agricultural Science, 2015, 61(9): 107-110.

[2] Guo Mengfei, Zhao Min. Research on the development of agricultural crowdfunding in China based on PEST analysis. Hubei Agricultural Science, 2016, 55(18): 4882-4885, 4889.

[3] State Council. Opinions on vigorously developing e-commerce to accelerate the cultivation of new economic power. 2015-05-07. 2023-01-06. http: //www.gov.cn/zhengce/content/2015-05/07/content_9707.htm.

[4] General Office of the State Council. Guiding Opinions on Promoting the Accelerated Development of Rural E-Commerce. 2015-11-09. 2023-01-06. http: //www.gov.cn/zhengce/content/2015-11/09/content_10279.htm.

[5] The Standing Committee of the 13th National People's Congress. E-commerce law of the People's Republic of China. 2015-11-09. 2023-01-06. http: //www.gov.cn/xinwen/2018-08/31/content_5318220.htm.

[6] Central Committee of the Communist Party of China, State Council. Opinions on the implementation of rural revitalization strategy. 2018-02-04. 2023-01-06. http: //www.gov.cn/zhengce/2018-02/04/content_5263807.htm.

[7] Central Committee of the Communist Party of China, State Council. Several opinions on adhering to the priority development of agriculture and rural areas to do a good job in the "three rural areas". 2019-02-19. 2023-01-06. http: //www.gov.cn/zhe-ngce/2019-02/19/content_5366917.htm.

[8] Luo Jianping. The current situation of China's rural e-commerce development and countermeasures. Agricultural Engineering, 2017, 7(4): 194-195.

[9] Liu Liwei. Practice and inspiration of America's development of "Smart Agriculture" to promote the transformation of agricultural industry Chain. Economic Review, 2016, (12): 120-124.

[10] Liu Jianbo, Li Hongyan, Sun Shixun, et al. Development experience of foreign smart agriculture and its inspiration to China. World Agriculture, 2018, (11): 13-16.