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Standardization of the Industrial Chain of Distinctive Agricultural Products Based on Network Platform

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Abstract In the paper, the concept of circulation industrial chain of distinctive agricultural products is introduced. By using the e-commerce platform, the new industrial chain for the circulation of distinctive agricultural products on the basis of online transaction is established. In view of the standardization problems in the production and processing section, online exhibition and trade section, after sale section, the related solutions are put forward. In the production and processing sections, the fruit farmers should implement scale cultivation; pick and store fruits according to the local situation; pack fruits by using green package which can represent the features of the brand; establish the agricultural products association. In the section of online exhibition and trade, the identity of network platform should be normalized and the authentication technique and system should be perfected; the unification of product exhibition should be paid attention to; the specialization of negotiation should be intensified and the differences in communication should be represented; the price should be made comprehensively and the reference factors should be diversified; the entrance situation should be legalized and the account should be managed differently. In the after sale section, the business scope of logistics should be expanded and technology should be input; taking the customers as the center, the subsystem of distinctive service standard should be stipulated; the credit evaluation standard and punishment mechanism should be clarified; the customer-related management system should be implemented as well as the supervision mechanism.

Key words Distinctive fruits, Online trade, Standardization system, Agricultural industrial chain, China

With the development and popularization of networking and information technology, the on-line trade on the basis of internet provides us opportunities for creating new agricultural industrial chain. The industrial chain is characterized by high efficiency and low costs, which is far more advantaged than traditional industrial chain. But the weak standardization awareness seriously restricts the construction and development of circulation industrial chain of agricultural products. Many scholars have conducted substantial detailed researches on standardization of industrial chain. For example, ZHANG Li-yang (2007) pointed out that modern agricultural industrial chain should establish the chain mechanism of longitudinal integration and adopt the organization form of "company + garden + rural households" to form the operation mechanism of "brand + standard + scale"^[1]; WANG Ya-fei (2009) thought that the strategic thought pattern of intensifying Chinese agricultural industrial chain is to strengthen agricultural industrial chain organization and increase the science and technology content to establish perfect and effective standard management system in industrial chain^[2]. Taking distinctive agricultural products-fruits as an example, the standardization problem of the construction of each section is analyzed from the perspective of constructing and improving the circulation of industrial chain of agricultural products on the basis of network platform. Circling the three sections including production and processing, on-line exhibition and trade and after-trade service, the paper establishes the standardized

system to realize the normalization and integration of realizing the whole industrial chain.

1 The concept of circulation industrial chain of fruit agricultural products

The circulation industrial chain of fruit agricultural products is to take the fruit agricultural products as the constructing sections and elements. The network structures composed by the relevant industrial cluster of primary products include planting, picking, processing, packing, storing, order trade, transportation, clearance and settlement and after-sale service, as well as information and financial service. By closely integrating with the circulation industrial chain of fruit agricultural products, the complete industrial chain is formed, which can be seen as Fig. 1.

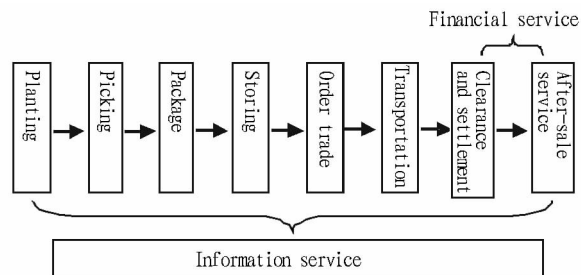


Fig. 1 The industrial chain of distinctive agricultural products of fruits

Due to the multiple main bodies in the whole industrial chain, the management standard of "unified brand, unified purchase, unified price and unified package" should be promoted to realize the operation aim of scale, industrialization, integration and ecology. Besides, the pillar industries should be culti-

vated to form the commercial mode of "small rural households-enterprises-distributors" to make them into the marketing center of marketable agricultural products to motivate the healthy development of the whole industrial chain.

2 New industrial chain on the basis of network platform

Network platform refers to the e-commercial business platform which relies on advanced internet technology and used by enterprises to sell products and provide services to consumers. In the platform trade, after registering, the sellers (enterprises) issue the information of products through internet platform and the buyers (consumers) browser the information through the internet platform, after forming the purchase wiliness, the buyers and sellers negotiate through internet. After making the agreement, the sellers and buyers sign the order and purchase contract. The sellers and the buyers entrust the third-party logistics and the third-party payment to complete the transportation and payment. In the end, the buyers and sellers judge the trade through internet platform. The specific contents can be seen on Fig. 2.

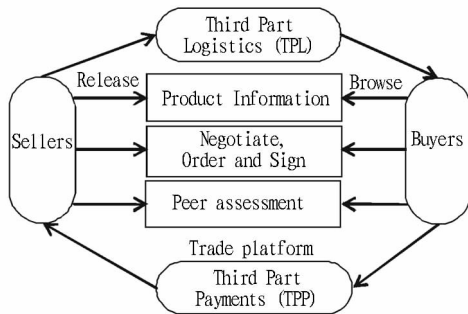


Fig. 2 Online trading flowchart

On the basis of the virtuality and timeliness of internet platform, the trade section and after-sale section of circualiton industrial chain of agricultural products are expanded and widened. The specific contents can be seen on Fig. 3.

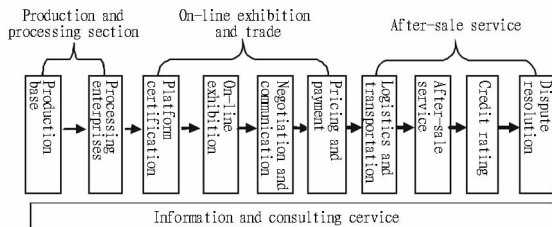


Fig. 3 New circulation industrial chain of distinctive agricultural products based on online trading

Compared with traditional circulation industrial chain of agricultural products, the internet platform pays close attention to the qualification eligibility and the standardized test of products of the participated main bodies except the strict supervision on the production and processing sections. In view of various kinds of participated main bodies, the legal supervision of various entrance standards should be set up. For example, the nation issues special license and regularly evaluates the on-line

trade of the third-party to avoid the cheating behaviors. The platform adopts the responsibility system of the products and implements the standardized management of "integration, simplification, coordination and selection" from production to marketing and normalizes each section of industrial chain from overall directions, which will promotes the construction and development of fruits agricultural products.

3 Standardization of each section of fruits distinctive agricultural products

3.1 Standardization of production and processing section of production base

3.1.1 Standardization problem. Production and processing is the basic guarantee for the smooth circulation of production chain. Production and processing should rely on resources and promote the standardized production according to the industrial developmental thought pattern of "constructing production base, introducing science and technology, intensifying brand" to cultivate the distinctive agricultural products. However, at the present stage, the standardized awareness of farmers is low and they do not apply the production mode of standardization and science and technology to practical production. In cultivation, most farmers still follow the traditional way for preventing and remedying diseases and pests, which lead to the excessive residual of pesticides in fruits, at the same time, the small scale cultivation still has impeding function for the practice of agricultural standardization. In terms of picking and storing, farmers use the single picking mode for different kinds of fruits which has gravely reduced the picking rate. Part of the farmers use ripening agents which has great threats on human health. In terms of package, the phenomena of "distinctive without brand" is prominent, which leads to many famous fruits but can not find market. Besides, due to the ignorance of high added value in the primary process, the agricultural interests are affected.

3.1.2 Solution case of standardization. In order to answer readily the standardization problems, the following solutions can be taken into consideration. In the first place, the intensive scale cultivation. Through the unified standard of fruit tree cultivation, the single cultivation mode of multiple rural households changes into the intensive scale planting mode and use the high effective and low residual biologic pesticides. In the second place, the farmers should pick and store according to the local conditions. Production bases or pillar industries should organization farmers to harvest and store fruits according to the standards and local varieties and climate environment. After harvesting the fruits, farmers should grade the products according to standards and then classify them. When storing the fruits, farmers should control the temperature, humidity and display gap according to the standard to improve the yield production to replace the ripening agents. In the third place, farmers should use green package to show the distinctiveness of brand. The package should apply the nonpoisonous and biodegradable materials and use the geographic protection market to create the safe and non-pollution famous brand. In the fourth place, farmers should construct the fruits organization. The or-

ganization should process and pack the fruits to supervise.

3.2 The standardization of on-line display and trade section

3.2.1 Standardization problem. On-line exhibition is the key factor for promoting trade. Standardized norm and verified product exhibition are the prior strategies for attracting consumers. At present, most platform still lays in the primary stage in exhibiting products, for example, fake identity information gives chance to the entrance of low-quality products; substandard normalization, production exhibition with single information lower people's attention to the platform. In the transaction section, there are problems in terms of exaggerating products, substandard pricing, the credible degree of the third-party payment and the management on the fund in float.

3.2.2 Solutions on standardization. In view of the above standardization problems, the following countermeasures should be taken into consideration. In the first place, the platform should normalize the identity authentication of it and perfect the authentication technology and system. For example, the platform can use the third-party institution to authorize the identity of the digital identity of buyers and sellers. The platform reserves and regularly checks the legal authentication results of each legal user. In the second place, farmers should pay attention to the unified exhibition of products and enrich the information of products. For example, the exhibition of golden pears should include names, size, quantity, price, country of origin, transportation method, and payment way and contact information. When necessary, the related inspection and quarantine certification should be provided. In form, the products should be exhibited by using unified maps (the size and format is fixed), relevant written description and video expression (time limit of video should be set up). In the third place, the professional negotiation should be intensified to show the differences of communication. During the negotiation, special marketing people should be hired and the honest attitudes should be adopted. In the fourth place, the price should be made comprehensively and multiple factors should be taken into consideration. When a kind of agricultural product ranks between two grades, it can be classified according to the standard of the two grades. When testing the agricultural products, each item should be considered comprehensively. According to the features and edible features of golden pear, the different weights should be added according to different features and then form the price after summing the weights. In the fifth place, the entrance situation should be legalized and the account should be managed discriminatively. The third-party payment platform should have the license issued by the nation and its registered capital should satisfy the minimum registration fund demanded and accept the supervision and guidance of the relevant government. At the same time, the third-party payment should discriminate the self-owned capital and registered fund and receive the payment as fast as possible after getting the agreement of users.

3.3 Standardization of service section after trade

3.3.1 Standardization problem. Comprehensive, high effi-

cient and low cost logistics distribution; perfect credit evaluation system and dispute coordination mechanism are the important measures for enhancing the core competitiveness of circulation industrial chain. On current stage, the small overall scale of Chinese logistics, backward and simple infrastructure; low mechanism degree; few intelligentized and automatic inventory; backward information construction lead to the blocking flow of information, high costs and low efficiency^[3]. In after-sale service, the service can not take market as the target and most services can not satisfy the demand of consumers. In terms of credit evaluation, the vogue evaluation standard is universal and sometimes the buyers and sellers give dishonest and bias evaluation. The platform lacks the strict break faith punishment mechanism which leads to the functionlessness the credit evaluation^[4]. There are many problems in managing dispute solving mechanism including impeding reporting and complaining, high costs, lack of flexibility, complex situations for building the report, long time for handing it and indifferent to response^[5].

3.3.2 Solutions on standardization. The following countermeasures can be used to solve the problems of above mentioned standardization problems. Firstly, farmers should continuously expand the business scale and pay attention to the technology input. The third-party logistics should expand the multiple and distinctive service and pay much attention to research and develop logistics distribution technology and equipment, for example, the cold fresh handle of Mopanshi and anti-cold and anti-crack equipment, besides, farmers third-party logistics should establish the perfect information exchange system and intensify the information construction. Secondly, farmers should make the substandard system of distinctive service. Farmers can through the market investigation and informal discussion meeting to reflect the demand and expectation of users to the standardization of after-sale service. The subsystem of after-sale service includes the fundamental basis, function standard and individual standard. For example, farmers should establish the systematic standard for managing the change and return of agricultural products; complaint of consumers, response and solution of users 'quality information and establishment of users' files. Thirdly, farmers should clarify the credit evaluation standard and the strict break faith punishment mechanism. Besides, farmers should perfect the calculation of credit evaluation and connect evaluation score with transaction volume. Strict break faith punishment mechanism will be stipulated to punish the buyers who give fake and bad evaluation and the sellers who have been badly judged frequently. The third-party arbitral body will be introduced into to solve the disputes. Fourthly, the management system of customer relations should be implemented to perfect the supervision mechanism. For example, when the buyers report that the exhibition of the Mopan persimmon is not in accordance with the reality, the platform should investigate it and negotiate with sellers. When necessary, the arbitration should be applied to solve the disputes.

4 Conclusion

From the perspective of constructing and improving the

new industrial chain of agricultural products in circulation section on the basis of on-line platform, the paper analyzed the standardization problem in the construction of industrial chain of fruits. Through discussing the three major sections including production and processing, on-line exhibition and trade and after-sale service, the systematic and standard industrial chain management thought pattern is put forward. The major conclusions include taking scale production to replace the dispersed and low-efficient farming; through the targeted and discriminated identity authentication to guarantee trade safety from the origin; building the famous brand of distinctive agricultural products and expanding the transaction scale through multiple and distinctive on-line exhibition, unified negotiation and high-quality after-sale service; taking strict credit evaluation mechanism and dispute solution to reduce the possibility of dishonest behaviors. The new industrial chain in the circulation section of distinctive agricultural products on the basis of network platform and

(From page 87)

B comprehensive score of members' development equals to $\sum b_{ij}$ evaluation element score multiply the weight of each element.

C comprehensive score of social development index equals to $\sum c_{ij}$ evaluation element score multiply the weight of each element.

Through the above analysis and calculation, the score of each second level index of farmers' cooperative economic organization can be obtained. According to the different weights taken by each first level index in the total score, the final evaluation score can be calculated.

The comprehensive score of operation effects of farmers' cooperative economic organization = A comprehensive score of the second level indexes \times A weights of first level indexes + B comprehensive score of first level indexes \times B weights of the first level indexes + C comprehensive score of the second level indexes \times C the weights of the first level indexes.

In the final score, the score between 80 and 100 is excellent; between 70 and 80 is good; between 60 and 70 is mediocre; and score lower than 60 is bad operation.

According to the above score results, the government should provide discriminated, targeted and systematical support for farmers; cooperative economic organization according to the specific situation of each area, the different developmental degree and different standard degree to facilitate the well development of farmers' cooperative economic organization.

In the process of developing Chinese farmers' cooperative economic organization, due to the special regulations, farmers, as the weak group, can not enter the market directly and compete fairly with their rivals. If the government do not supervise the market but let it go, the weak group will be nipped in the bud by the competitive one under harsh market law. Therefore, farmers' cooperative economic organization needs the government' encouragement, direction and support.

However, it should be known that the development of farmers' cooperative economic organization relies not only on

standard system is the necessary demand of modern agricultural products.

References

- [1] ZHANG LY, ZHANG XC. China's industrial chain integration of modern agriculture[J]. Teaching and Research, 2007, 10: 14 – 19. (in Chinese).
- [2] WANG YF. Research on the management theories of agricultural industry chain[J]. Journal of Anhui Agricultural Sciences, 2008, 36 (27): 12004 – 12005, 12011. (in Chinese).
- [3] SHEN Z. Strategies and research on third – party logistics development[J]. Business Economy, 2010, 4: 107 – 108. (in Chinese).
- [4] YANG Y. Problems and solutions of online shopping credit evaluation[J]. Science & Technology Economy Market, 2009, 3: 98 – 99. (in Chinese).
- [5] LI L. From transactions disputes of Taobao Network to see the customer relationship management [J]. Management Observer, 2009, 18: 92 – 94. (in Chinese).

the entire economic, social and cultural development level, but also its own professional level, socialized level and developmental scale, so it is a system project concerns wide areas and its development still needs a long process. As an external engine, the government just accelerates or postpones the developmental process of farmers' cooperative economic organizations, rather than basically changes the developmental role of farmers' cooperative economic organizations^[4].

Under the current developmental status, farmers' cooperative economic organization needs the interference of governments on the primary stage. But if the farmers' cooperative economic organization enters the normal state, the government should withdraw from the market and adopt new supporting pattern to avoid the old problems of indiscriminating the government and the enterprises. Therefore, when supporting farmers' cooperative economic organization, the government should not be excessive enthusiasm; that is to say, the government should help cooperative organizations to operate independently. The governmental functions on farmers' cooperative economic organization should be reflected on the macro aspects of making economic supporting policies and providing public goods to create healthy and favorable system space for the development of farmers' cooperative economic organization.

References

- [1] KONG XZ, SHI BQ. Operating mechanism, fundamental function of current farmer professional cooperative organizations and factors effecting them[J]. Rural Economy, 2009(1): 3 – 9. (in Chinese).
- [2] PETER F DRUCKER. Corporate Performance Assessment [M]. Translated by LI Y, JIANG Y. Beijing: China Renmin University Press, 2000.
- [3] YU N. Evaluation of expenditure on R&D in China: Indicators' formulating and verification[J]. Shanghai Economic Review, 2005(9): 3 – 14. (in Chinese).
- [4] XIONG SL, XU L. Studies on the example of the cooperation improved by the important person – based on the Shandong, Henan Province investigation[J]. Journal of Shandong Agricultural University: Social Science Edition, 2010(1): 6 – 10. (in Chinese).