

Research on Promotion Mode of Wuyuan Specialty Based on Blockchain

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Abstract: Wuyuan's existing specialties have a long history and a rich variety, but due to geographical restrictions, insufficient market demand and the contradiction between the slow sale of goods under the epidemic situation, the development of Wuyuan's specialty retail industry has encountered bottlenecks. At present, blockchain as the underlying support technology of digital currency has been applied to varying degrees in the financial industry, sharing economy, supply chain management and other fields, while there is still insufficient research on the promotion of special products and the application of retail models. Relying on the characteristics of immutability, instant plasticity and decentralization of blockchain, this paper systematically analyzes the application status and development advantages of blockchain. In order to improve the efficiency of the supply chain and ensure the quality of the supply of special products, this paper combines preliminary practices such as field investigations, sorts out the sales model of Wuyuan specialties, puts forward development countermeasures and suggestions, and develops the "Four Colors Wuyuan" WeChat Mini Program suitable for product tracking and traceability by building a specialty sales platform that can supervise and feedback in real time, boosting the digital development of Wuyuan's economy, promoting the optimization and reform of economic structure, and helping rural revitalization.

Keywords: Block chain, Rural revitalization, Online specialty retail, Product quality assurance.

1. Block Chain Technology

1.1. An overview of blockchain technology

Blockchain technology is a brand new mode different from traditional network architecture. Based on consensus mechanism, secure communication and cryptography, it builds a trusted independent operation network mode, which has the characteristics of imtamability, instant plasticity and decentralization. Blockchain originated from Bitcoin, and its core is to act as a public ledger to securely and effectively record all transaction information. The information is stored in the traceability system based on blockchain, which is very reliable and enhances the integrity and security of data.

1.2. Based on the advantages of blockchain characteristics in retail application

As the backbone of the digital economy and emerging technologies, the integration of blockchain and the real economy is an important direction for high-quality development of the digital economy in the post-pandemic era. The traditional offline retail model has long been unable to meet people's demand for high-quality products. The emergence of blockchain technology can provide strong technical support and solutions for the practice of new retail model. Blockchain links several blocks that record transaction data in a chronological order, and each block takes over the transaction data of the previous block, so as to build a chain that cannot be tampered with. The blockchain distributed accounting method discloses the detailed information of retail product storage and transportation to consumers in the whole process, which greatly reduces the transaction risk and reduces the credit cost and management expenses of users in the transaction process.

1.3. The development status of blockchain

Based on the security, efficiency and sharing of blockchain

technology, blockchain has played a great role in the recovery and development of global economy and the construction of digital economy. Blockchain has gradually become an important basic measure of "Internet of value". All countries have begun to actively embrace blockchain technology and seize the commanding heights of a new round of industrial innovation to strengthen international competitiveness. IDC data shows that in 2020, the global blockchain market size shows a stable growth trend, blockchain market spending reached \$4.31 billion, is expected to reach \$14.533 billion in 2023. Compared with developed countries, China's blockchain market started relatively late. In 2020, China's blockchain market size accounted for only 13% of the global market. However, as an important part of the international market, China's blockchain market has huge potential for development.

China has included blockchain and other emerging digital industries in the outline of the 14th Five-Year Plan. The Chinese government actively encourages enterprises in various regions to explore and study the application of blockchain technology, so as to promote the implementation of blockchain technology. Under the situation that regional economic and technological development level in our country still shows unbalanced, the development status of block chain industry also shows more obvious regional difference. At present, four major blockchain industry clusters have been formed in China, where technology, talent, capital and other essential resources are rapidly pooled. The blockchain industry ecology is taking shape, and the radiating and driving ability of surrounding areas is further enhanced.

However, as a traditional agricultural development county, Wuyuan in Jiangxi Province has a slow economic development, mainly relying on agriculture and tourism, with a single economic development structure and poor anti-risk ability. In addition, due to the underdeveloped economy and the slow development of science and technology, there are no relevant high-tech enterprises in the county, and the

application of blockchain technology is not mature. There are few related projects with blockchain as the main core technology. In order to seize the opportunities and seize the industrial upgrading opportunities that may be brought by blockchain technology, Wuyuan is in need of relevant projects to make up the development shortcomings, accelerate the development of blockchain technology + specialty retail, and build future competitive advantages.

2. Introduction to Macro Background

As socialism with Chinese characteristics has entered a new era, the principal contradiction facing society has been transformed into the contradiction between unbalanced and inadequate development and the people's ever-growing needs for a better life. The economy has also shifted from a stage of rapid growth to a stage of high-quality development. From the strategic deployment of rural revitalization to the implementation of the requirements of all regions and departments, to the summary of comments and feedback and further improvement of the plan, it reflects the importance and strong support of the current government to rural revitalization.

Agricultural NongCunBu to the country to promote "2021 digital agriculture rural new technology new product new model good example", finally chose has a high level of technological innovation, high application value and conform to the development of the digital village, construction of intelligent agriculture new development concept features of 205 cases, beneficial to the development bottleneck in the period of the country to learn and stimulate innovation. At the same time, the state has issued relevant policies on blockchain technology industry to promote the prosperity and development of rural economy and blockchain technology integration. In December 2016, in the "13th Five-Year" National Informatization Plan issued by The State Council, blockchain technology was included in the "National Informatization Plan" for the first time. In June 2017, the People's Bank of China issued the 13th Five-Year Development Plan for China's Financial Information Technology, explicitly proposing to actively promote the application research of blockchain, artificial intelligence and other emerging technologies. In May 2018, the Ministry of Industry Information officially released the "2018 China Blockchain Industry Development White Paper". As the first official white paper on the blockchain industry, it shows that the national government attaches great importance to the research and application of blockchain technology. In this context, Wuyuan County, Shangrao City, Jiangxi Province, grasped the opportunity under the current policy situation to build a platform and develop the economy.

3. Micro Environment Analysis

3.1. Wuyuan specialty promotion advantages

Wuyuan County in Jiangxi Province is located in the northeast of Jiangxi Province, at the junction of Jiangxi, Anhui and Zhejiang provinces. In view of its unique geographical advantages, Wuyuan County has made great efforts to develop rural tourism and promote local characteristic products, among which "Wuyuan green tea, Jiangwan pear, Longwei inkstone and red carp in purse" are the four main specialties. Up to now, Wuyuan has 72 scenic spots (including rural tourist spots), with rural tourist spots covering all townships and homestays covering all villages

and villages. Wuyuan is a truly all-region tourism county. There are 13 5A scenic spots and 167 4A scenic spots in the whole province. Wuyuan has 1 5A scenic spot and 14 4A scenic spots. The number of scenic spots above 4A level ranks first in the country at the county level. In recent years, with the goal of "becoming a model and benchmark for national rural tourism and rural revitalization", Wuyuan has continuously promoted the high-quality development of regional tourism. It has successively won more than 30 "golden signs", such as the national "Two Mountains" Practice and innovation Base, the first batch of national all-region tourism Demonstration Area, and National Emblem Cultural and Ecological Protection Area. Relying on Jiangxi Wuyuan, film and television creation base construction, successfully attracted the toward sunset cloud rain "pale fire", "youth" CCTV columns, popular TV dramas and variety shows, such as a batch of auteur, Mingxi, stretch into the Wuyuan, increasingly vocal "natural studio" brand, "China's most beautiful village" brand. In China, With the advantages of brand and scenic spots, WUYuan will expand its popularity for the sales of local characteristic agricultural products, and the online discussion triggered by a variety show will play a positive role in the integrated development of WUYuan's specialty products and tourism industry. The county's gross regional product in 2021 was 15.481 billion yuan, up 8.8 percent year on year.

3.2. The challenge facing the promotion of Wuyuan specialty

(1) Limited by mountainous terrain, transportation is inconvenient and information is relatively closed.

Most of the local products in Wuyuan have strong regional cultural characteristics, but due to regional limitations, many of them are not well known, and most of them are mainly sold in the local and nearby areas. Moreover, due to the immaturity of supply chain, insufficient market information feedback, low efficiency of product supply, and low sensitivity of producers to market changes, it is difficult to adjust the production structure according to the market.

(2) Wuyuan farmers have weak safety awareness of agricultural products and low brand awareness.

Good brand effect can bring higher brand premium to enterprises and form value-added effect. With the improvement of living conditions, people's requirements on the quality of food have gradually increased. However, some local specialty enterprises in Wuyuan have weak brand awareness and only consider short-term profits while ignoring long-term benefits, so as to pass off substandard products as good ones, which greatly affects consumers' impression on Wuyuan specialty and leads to a decline in the reputation of specialty products.

(3) The COVID-19 pandemic has brought a huge impact on the development of tourism in Wuyuan.

According to field research, dealers of various kinds of Wuyuan specialty products have expressed that the epidemic is one of the main factors affecting the sales in the past two years, especially the uncertainty risk will affect the stable development of specialty sales. During outbreaks, people go out inconvenience, tourists' desire to drop, as the huge consumer groups of wuyuan specialty - a sharp drop in the number of visitors, lead to local specialty distributor sales decline, the market demand and outbreak under the contradiction in unsalable goods, so old age only relying on the scenic spots of the single mode of sales have been unable

to meet the needs of consumers, New sales channels are needed to deal with the difficulties and alleviate the negative impact of the epidemic on Wuyuan specialty trade.

(4) The production end and client end of agricultural products have relatively single ability to obtain information.

The circulation of agricultural products needs to go through the upstream production end, middlemen, and downstream clients. If there is a phenomenon of bad middlemen underpricing in various forms, the production cost of agricultural products will increase, and farmers will get less profit. At present, the rate of farmers using e-commerce in Wuyuan is low. So far, there are only more than 100 rural e-commerce service stations in the county. However, the vast majority of farmers in Wuyuan operate as smallholder farmers with small operation scale and low supply capacity. They mainly rely on small agricultural stores nearby and cannot directly trade with downstream clients. In order to increase profits, some farmers will increase output and reduce quality, which will temporarily increase farmers' profits, but will also reduce customers' trust in agricultural products over time.

3.3. Conclusion

Based on the above situation, in order to enable consumers to buy safe, authentic, high-quality and inexpensive Wuyuan specialties at any time and expand the popularity and market demand of Wuyuan specialties, the "Four-Color Wuyuan" project came into being. "Four-color Wuyuan" wechat mini program, relying on the characteristics of blockchain, such as imtamability, instant traceability and decentralization, improves the efficiency of supply chain, guarantees the quality of specialty supply, creates a high trust specialty brand, and realizes the traceability and tracking of specialty. In terms of consumers, "four color wuyuan" small application platform can set the detailed product information, block chain technology real-time monitoring products sources, quality and inventory, price changes, etc., can promote people's trust in the agricultural products, at the lowest cost and highest efficiency to solve the food security problem for the user to provide quality services. In terms of specialty suppliers, strict product standards should be selected, product quality should be well controlled, and an efficient and low-cost online sales platform should be built to directly connect upstream and downstream, so as to reduce the pressure faced by middlemen in underpricing layers and facilitate the implementation of the strategy of rural revitalization in Wuyuan.

4. Blockchain Technology + Specialty Retail

4.1. Build small program purchase platform

Through field research, we find that the current sales mode of the four special products in Wuyuan still adopts traditional offline retail and e-commerce retail in a smaller scope. In addition, most Wuyuan specialty retailers only sell single specialty, and lack a platform to sell four specialty products at the same time. "Four color wuyuan" project is built up based on block chain technology a WeChat small program, by relying on block chain technology tamper-resistant, instant traceability, the characteristics of decentralization, provide consumers with a safe and reliable platform for the wuyuan specialty consumption, specialty producers to provide a low cost, high efficiency of wuyuan specialty sales platform.

On the platform, consumers can buy four different Wuyuan specialties at the same time. The centralized sale of the four

special products not only improves consumers' consumption willingness, but also improves the retail efficiency of the special products in Wuyuan to a certain extent. Product details page can not only let consumers intuitively see the real quality of products, but also understand the origin of products, the environment of origin, product processing steps, etc. At the same time, consumers can choose door-to-door delivery or pick up points according to their own needs. For consumers in distant areas, they can also choose express transportation services.

For short-term temporary unlisted products, such as green tea, red carp, snow pear supply these three is a specialty of seasonal, timeliness, customers can order products, by means of booked order this opens to booking a model not only makes the relationship between the consumer and supplier more closely, but also can speed up the supplier the money collecting, improve their production enthusiasm, To a certain extent, it will reduce the loss caused by blind production due to the wrong prediction of market demand, and enable consumers to receive products they want in a timely manner within the pre-order period. And the manager can through the background data, timely observation of the current inventory, sales and price changes of the four specialty, timely control and management.

4.2. Two-dimensional code traceability of specialty information

In the whole process of production recycling, from the initial production link to the final consumption link, consumers can only participate in the last link of the product and cannot understand the other links, which leads to the information asymmetry between consumers and producers. In the whole process of product circulation, there are many other intermediate links, which make the safety of the product under certain potential threat, so it will affect consumer confidence.

This project based on the real-time traceability chain blocks, green tea products, for example, producers, processors, logistics enterprises through the backstage after timely input information specialty, consumers green tea by scanning the qr code on the package can query to the circulation of green tea, consumers can also be brought to bear on to tea tree age, what kind of fertilizer, When to pick, when to tea packaging and other production processes. Let consumers see where goods come from and how they come, not only can improve consumer confidence, but also can increase the supervision of the production, processing and circulation of specialty products, and urge producers to improve the quality of specialty products. At the same time, the blockchain itself has the characteristics of immutable, once there is any quality problem of the product, we can accurately and quickly find the source of specialty problems through the blockchain, to achieve efficient accountability.

4.3. Real-time monitoring of logistics information, inventory information

For the present logistics in China, despite the rapid development of the traditional logistics industry in recent years, there are still some unsolved problems, such as excessive storage or inventory shortage, information leakage, wrong connection and so on. "Four-color Wuyuan" mini program can realize real-time product tracking and timely visibility of supply chain information through blockchain technology, so as to truly and reliably record logistics and

information logistics, build and utilize blockchain basic platform, and provide perfect supply chain visualization for consumers, farmers and managers.

In terms of logistics information, blockchain technology enables the platform to track and monitor the status of goods in real time from the issue of agricultural products to the receipt of goods. The transportation process of goods is also recorded along the chain, and the whole process of loading, transportation and picking is clearly visible, so as to better improve the overall efficiency. Every step in the process of obtaining goods is recorded via blockchain, ensuring traceability of information to avoid problems such as lost packages and mismanagement. For the signature of express delivery, consumers can directly check the blockchain to prevent the Courier from forging the goods and other problems. Meanwhile, suppliers can also grasp the direction of product logistics through blockchain to ensure the fresh delivery of products and ensure their good reputation.

In terms of inventory information, the platform sets an automatic alarm function to notify consumers and merchants through platform warning, wechat warning and mobile phone message warning respectively for the problems of missing, missed and wrong delivery of express delivery and insufficient warehouse inventory in the process of transportation. Allowing producers to understand the product inventory in the supply chain activities at any time, depending on the platform trading volumes to provide optimal inventory for producers, shortage or excess inventory, reduce product cost and waste, increase the supply of producer sustainability, and transport capacity, improve the efficiency of the supply chain as much as possible.

4.4. Build a brand and build a trust chain

Through the advanced blockchain technology, the platform constructs the above traceability platform and agricultural products of one item and one code, and realizes the collection of a series of information of the whole chain, such as commodity information, logistics information and inventory information, so as to ensure that the product information traceability can not be tampered with and commodities can not be switched, so as to ensure the freshness of products. The blockchain technology can protect the rights and interests of consumers from the source, and at the same time ensure the information visualization, so that consumers can have a sense of identity with the products and brands, and improve their trust, so as to better build the local specialty brand of Wuyuan and improve the brand appeal.

For order bigger consumers, such as restaurant, supermarket, factory can block chain, such as check the authorized four data related to the product chain blocks in the realms of product the seller to see the process of its production and processing, thus the source of the certification of products, such as pouch red carp, consumers can clearly understand the fish procurement to feed feed and other details. The program will distinguish different grades according to the dealer's willingness to invest money, and assign the producers matching the grades. The producers of each grade show different production processes, and their production standards and product processes vary greatly with the change of the grades. Consumers willing to buy can fully understand the production capacity of producers of different levels and

choose the objects they are willing to cooperate with for a long time, so as to realize the reasonable matching between farmers and consumers. In this way, the long-term trust chain can be well constructed to promote the fixed transaction between consumers and farmers and the stable development of brands.

5. Anticipated Vision and Social Effects

According to block chain as the carrier of wuyuan specialty retail platform, based on the specialty source, growing environment, picking process, production process, production and processing, logistics, sales and after-sales service and so on each link can be tracked, information once uploaded to block chain cannot be easily change or delete, largely contain malicious fraud and data loss situation, It effectively guarantees the true information and quality of products, puts an end to fake and shoddy products, and controls the quality of products. At the same time to data encoding of each specialty, make every product has its unique "id card", set up with data, using data management, data supervision and operating mechanism, each product on the retail platform for effective regulation and combination marketing wisdom, overall improve product quality, increase product sales.

Such projects are expected to promote the development of rural economy in WUYuan, build WUYuan specialty brands, and help WUYuan characteristic products go out of WUYuan, Jiangxi and the whole country. At the same time, it will promote the regional characteristic culture and ancient traditions of WUYuan, improve the popularity of WUYuan and enhance the attraction of rural tourism, so as to promote the strategic adjustment of the economic structure of WUYuan, promote the high-quality development of digital economy, and promote the coordinated development of tourism with the first, second, and third industries. We will inject new blood into the economic and social development of rural areas and make rural areas and people rich. Through this innovation, we will open up new fields, provide a reference template for other rural economic development, play a leading role, drive the high-quality development of rural economy in China, let the Chinese people feel the huge dividend brought by scientific and technological progress, accelerate the pace of rural revitalization, and help realize the great Chinese dream.

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