



Research on the Development Mode of Agricultural Digital Collection in China

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Abstract. At present, digital collection has become a hot spot of social concern. This paper gives the development model and basic framework of agricultural digital collection in China. Firstly, this paper introduces the definition, product type, characteristics, product form, production mode and scope of digital collection, and briefly describes its development status. Secondly, the significance of developing agricultural digital collection in China is discussed, and the basis of building China's agricultural digital collection is analyzed. Thirdly, the contents of China's agricultural digital collection are described. Finally, the relevant qualifications and risks of building Chinese digital collections are introduced.

Keywords: Development model · Non-Fungible Token · Digital collection · Financial risk

1 Introduction

Agricultural culture exhibition is a combination of exhibition economy and agricultural culture. With the vigorous development of China's digital economy, how to use digital collections to display the development achievements of China's long and splendid agricultural civilization, help rural revitalization, and innovate the development mode of China's agricultural culture exhibition requires us to think and explore deeply.

2 Overview of Digital Collections

2.1 What is a Digital Collection

Non-homogeneous Tokens (NFT) were first introduced by American artist Kevin McCowie on the nanocoin blockchain in 2014. When NFT entered China, it was mostly in the form of "digital collections". Digital collections are works with unique digital credentials generated based on blockchain technology in order to realize the credible digital distribution, purchase, collection and use of digital works, protect their digital copyright. Compared with NFT, digital collections weaken the property of investment and transaction and highlight the cultural property of collection [1].

Digital collections are divided into two product types: blockchain works copyright and blockchain digital publishing products. In China, the former, as the object of copyright digital assets trading, shall be legally carried out in the exchanges approved by the provincial government or above; The latter, once published online, can be sold as a limited number of blockchain digital publications.

Digital collection mainly has three characteristics: first, it is an original intellectual achievement; second, it has copyright; third, it is a new form of digital publication.

At the present stage, digital collections are mainly manifested in two product forms: one is the same work, a one-time single sale, that is, the sale is copyright; The second is the same work, limited to multiple copies of sales, sales is digital publishing products.

At present, there are three ways of produce digital collections: The first one is the digital acquisition of physical objects. Some digital collections are the collection of cultural relics, artworks of the original data scanning means to generate digital products. Second, digital original works. Third, digital works and physical objects or rights integration.

The range of digital collections is very wide, and almost all kinds of works can be linked and traded as digital collections. In addition, the digital collection has spawned other blockchain application scenarios, including digital insurance, digital education, digital scientific research, digital social, metaverse and other fields.

2.2 Development Status of Digital Collections at Home and Abroad

In the first half of 2022, a total of 5,282,069 transactions with a total value of \$10.094 billion were made in digital collections worldwide [2].

According to the “2021 China Digital Collections (NFT) Market Analysis summary” on the website of China.org.cn (Science China), the number of digital collections sold in China in 2021 is 4.56 million, with a circulation market value of about 150 million YUAN and an average price of 33 yuan. In 2021, there were nearly 40 digital collection platforms in China. Among them, 7 digital collection platforms have the background of central media, more than 20 digital collection platforms have the background of state-owned assets, and more than 25 digital collection platforms have the background of listed companies. It can be seen that digital collections have gained a broad foundation for development in China.

3 Construction of the Significance of Agricultural Digital Collection Development in China

The 5,000-year history of Chinese civilization is a history of agricultural civilization. The connotation of Chinese agricultural culture is the sum of the material culture and spiritual culture related to agriculture created by the practice of Chinese agricultural production, which is broad and profound. According to its development stage, Chinese agricultural culture can be divided into three stages: primitive agricultural culture, traditional agricultural culture and modern agricultural culture, which has laid an incomparable rich cultural resource foundation for the development of agricultural collections.

Take China’s 24 solar terms for example. The 24 solar terms are a time knowledge and practice system formed by observing the annual movement of the sun. They are

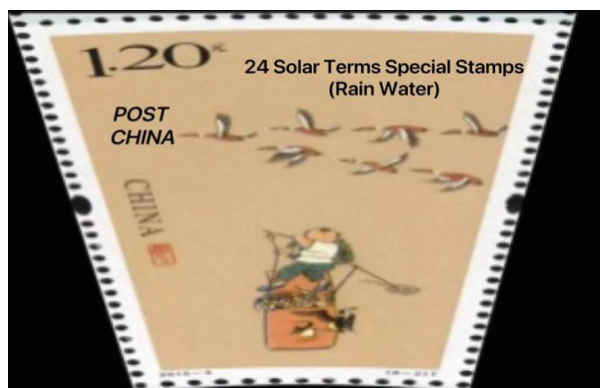


Fig. 1. 24 Solar Terms Special Stamps (Rain Water)

used to recognize the seasonal, phenology, climate and other changes in a year, and to organize agricultural activities and arrange daily life around each solar term. The 24 solar terms are rich in scientific, philosophical and cultural connotations, including the scientific outlook, world outlook and values of the Chinese people. In recent years, the academic work and cultural creation activities of the 24 Solar terms culture have achieved considerable development. For example, in cooperation with China Post, the China Agricultural Museum held the launch ceremony of four sets of special stamps for the 24 solar terms “spring”, “summer”, “autumn” and “winter” in the beginning of Spring 2015, the Beginning of Summer 2016, the Beginning of Autumn 2018 and the Beginning of Winter 2019. This set of stamps with 24 solar terms expresses the idea of the cycle of the four seasons, and conveys the spirit of harmony of ancient Chinese culture. The elements of the 24 solar terms continue to be integrated into the creative design of ancient books, calendars, health tea, purple clay POTS, screens and other articles of life [3] (Fig. 1).

At present, combining with the hot spots of China’s agricultural construction, digital collections have been tried. For example, on July 13, 2022, in order to promote the local fresh lotus seed sales in Chuzhou, Anhui province, Hefei Squid version of science and technology combined with Oriental easy dog platform to sell the “Aid to agriculture, rural areas and farmers” digital collection “ink lotus series”, 2664 pieces of collection sold out in 5 s (Fig. 2).

4 Build the Foundation for the Development of Agricultural Digital Collections in China

4.1 Accumulation of Cultural Resources

The Chinese Agricultural Museum is the main site for the preservation of China’s agricultural collections. It was set up in July 1983 and officially opened on September 13, 1986. By 2021, the Chinese Agricultural Museum has collected more than 100,000 pieces (sets) of various agricultural cultural relics from the Neolithic period to contemporary times, among which 4,423 pieces (sets) are precious cultural relics and 213 pieces

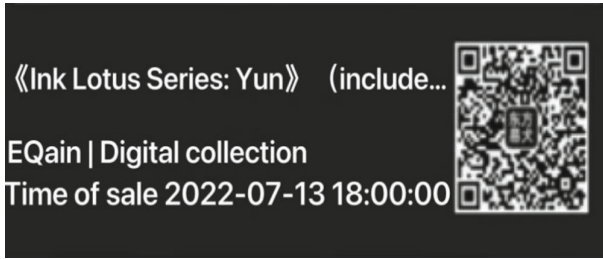


Fig. 2. “Ink Lotus Series: Yun”

(sets) are first-class cultural relics. In 2012, the China Agricultural Museum became a first-class national museum. The basic displays of the Chinese Agricultural Museum include “Chinese agricultural Civilization”, “Chinese traditional farm tools”, “Youth science popularization”, “Ancient Agriculture in Painted Pottery” and “Chinese soil”. At present, a collection system with the characteristics of agriculture and museology has been initially established [4].

4.2 Digital Practice

The construction of China Digital Agriculture Museum provides strong technology accumulation and rich digital resources guarantee for the construction of China’s agricultural collections. Digital museums originated in the United States in the 1990s. As a supplement and extension of physical museums, digital museums play an important role in deepening the exhibition theme, expanding the contents of exhibits, expanding the capacity of exhibition halls, filling the lack of physical performance, enriching exhibition forms and interactive experience [5]. The construction of digital museums also creates a talent base for digital collections [6].

China Agricultural Museum is one of the earliest industrial museums in China to make a digital attempt. At present, the basic display of China Agricultural Museum has been made in digital exhibition hall, and the online exhibition has been realized through three-dimensional panorama, so that the audience can browse the panorama of the exhibition hall online. Since 2013, the China Agricultural Museum has launched a digital exhibition hall to showcase its collections in conjunction with the theme of May 18, the International Museum Day. For example, in 2013, “Memory of the Countryside – the Best of Farmers’ Paintings Exhibition”, in 2014, “Unforgettable Memory – the Best of Agricultural Propaganda Paintings Exhibition”, in 2015, “Unforgettable Nostalgia – traditional farm tools exhibition”, in 2016, “Civilization of Earth and Fire – Painted Pottery Relics Exhibition”, and in 2017, “Gaomi Ash New Year Painting”.

5 Contents of China’s Agricultural Digital Collection

China’s development of agricultural digital collections should be equipped with national blockchain security technical guarantee, as well as blockchain digital rights management,

online publishing and distribution, content audit, authentication and other core capabilities. It carries out digital authentication, traceability protection, authentication exchange, research interpretation, display and dissemination of agricultural cultural relics and artworks, and provides one-stop application development services of cultural and cultural digital art collections for the majority of agricultural cultural and cultural lovers. China Agricultural digital collection service platform can have agricultural digital cultural innovation and trading, agricultural cultural and museum art appreciation, agricultural cultural and museum industry information and other service plates. It will provide digital asset right confirmation for all kinds of agricultural cultural and blog IP, assist offline rights and interests or technical play experience of agricultural digital cultural and creative services, and carry out agricultural digital cultural and creative transactions and distribution.

5.1 The Collection Scope

In 2004, the Collection Department of China Agricultural Museum centered on the collection system construction, carried out the subject of “connotation and extension of agricultural cultural relics” research, the connotation and extension of China’s agricultural cultural relics collections were relatively accurate positioning. This is also the main scope of the contents of China’s agricultural digital collections in the future, including the following categories.

- Unearthed cultural relics, relics and relics that reflect the agricultural production conditions and important agricultural historical events of the past dynasties in China;
- Buildings, murals, paintings, statues, portraits, signs, plaques, calligraphy and paintings, books, photographs and other image materials that reflect the agricultural activities of successive Dynasties in China;
- Traditional farming tools still used by ethnic minorities in rural areas and remote areas in China;
- Agricultural machinery, tools and specialized agricultural instruments reflecting the level of agricultural productivity in different periods;
- Articles for daily use and appliances reflecting traditional Chinese agricultural life;
- Relics related to agronomists and figures who made great contributions to agricultural production in the past dynasties;
- All kinds of intangible cultural heritage materials, solidified materials and carriers closely related to agriculture, rural areas and farmers;
- Samples of agricultural products that can reflect agricultural scientific and technological achievements.

5.2 Agricultural Digital Collection Business Process

The business process of agricultural digital collection should comply with the relevant regulations and documents of the national financial security, copyright protection, agricultural propaganda policy and so on, to prevent the occurrence of financial risks and infringement. It mainly includes the following aspects.

First, copyright audit Before any digital collection is put on the blockchain platform, it should have the copyright ownership certificate of the digital collection, which is usually confirmed and registered in the provincial copyright registration department, or provide its own original proof or legal authorization certificate.

Second, the digital collection blockchain platform audit institutions will audit the digital collections to be linked, not only the copyright ownership, but also the content orientation and artistic value of the collections. Only digital collections with healthy content and artistic value can move up and down the chain.

Third, the digital collections that meet the audit standards are stored on the chain to generate blockchain digital products.

Fourth, the digital collections that meet the conditions of online publishing and are to be published shall be examined and verified three times to form blockchain digital publishing products and sign an electronic agreement for commissioned publication.

The fifth is to evaluate the value of the digital collection and give the reference price of the transaction.

Sixth, digital collection distribution. Digital collections can be released on various sales platforms.

The seventh is the use of digital collections. After any user buys them, he or she can query the relevant information of the products on the front-end platform, read and appreciate them, and transfer them as gifts according to law.

Eight is the trade in digital collections. Legalized trade may be carried out in accordance with the state regulations on trade in cultural products.

The above aspects are only the main part of the business process, the actual business is much more complex, there will be many spin-offs.

5.3 Selling Way

5.3.1 Low Circulation, High Prices

Powerful IP flow of digital collections, with high collection value. Such as “magic core” of Tencent Group, “meta-vision” of Visual China Group, and other high-priced digital collections.

5.3.2 Bundle Sales

Beijing Haina Nebula Has developed a pill card platform that generates digital collections of props from movies on the blockchain. Buyers of the collection will split 1% of the film’s specified date box office.

5.3.3 Large Circulation, Low Unit Price

For example, Jingtian (The ant group), Lingxi (Jingdong group) and other issuing platforms, the number of each issue varies from 6,000 to 10,000, and the price is about 10–30 YUAN.

5.3.4 Blind Box Sales

For example, Guizang (Wuhan Riemann Technology Co. LTD), DongYiyuan (Beijing Kuaishitingl Technology Co. LTD) and other platforms.

5.3.5 Merge with the Meta-universe

DongYiyuan, Hongdong (Hongdong Technology Co. LTD) digital collection platform, the purchase of digital collections can be entered into its meta-universe priority.

5.3.6 Classification of Sales

Lanmao Digital platform and OneMeta platform divide digital collections into multiple levels of sales, decreasing in quantity and increasing in price.

5.3.7 The Secondary Market

In foreign countries, digital collections with small circulation and high unit price can be sold again. In the future, China may develop secondary markets in cultural exchanges above provincial level.

6 Relevant Qualifications for Digital Collections

In China, managing digital collections requires qualifications. Including blockchain information service record, copyright service qualification, online publishing service license, value-added telecom business license, network culture business license, etc. details are as follows.

6.1 Blockchain Information Service Filing

In 2019, the Cyberspace Administration of China issued the Regulations on the Management of Blockchain Information Services, requiring online filing of information service platforms such as websites. The record service content is divided into three categories: infrastructure provider, application operator and technology provider.

6.2 Copyright Service Workstation

When issuing and selling products, the digital collection platform shall have the qualification of the copyright service workstation approved by the copyright management agency, or issue and sell products approved by the copyright service workstation.

6.3 Network Publishing Service License

A digital collection platform shall issue and sell products with the Qualification of Network Publishing Service License, or issue and sell products published by a platform with the qualification of Network Publishing Service License.

6.4 Value-Added Telecom Business License

If the digital collection platform wants to issue and sell products, it should have the Value-added Telecom Business Operation License. To engage in telecommunications business, it is necessary to obtain, in accordance with relevant provisions, a telecommunications business license issued by the competent department of the information industry under The State Council or the telecommunications administrative body of a province, autonomous region or municipality directly under the Central Government.

6.5 Network Culture Business License

If the digital collection platform wants to issue and sell products, it should have the Network Culture Operation License. And apply to the cultural administration department of the people's government of the province, autonomous region or municipality directly under the Central Government for the "Network Culture Operation License".

6.6 Equity (Digital) Exchanges

As a platform for issuing and selling copyrighted digital assets and securitized products, the block chain works copyright of the digital collection platform shall have the exchange qualification approved by provincial or above governments, or be issued and sold by the exchange according to law.

7 The Risks of Digital Collections

From the development of digital collections in the world, while China has a great potential for development of digital collection, but if China open up the secondary market of digital collections under the current environment, and will be faced with under the guise of digital collection hype, money laundering, illegal pyramid selling, illegal securitization, infringement, piracy and illegal publications, data security risks.

On April 12, 2022, the State Administration of Cultural Heritage organized a symposium on the situation of digital collections. In view of the development status of digital collections, in-depth discussions were conducted around the public welfare attributes of cultural and cultural institutions and consumer rights and interests. This meeting formed the following conclusions: cultural institutions should firmly grasp the correct ideological orientation and ensure the security of cultural relics information, should not directly sell the original data of cultural relics as limited commodities; Cultural institutions should actively promote the open sharing of cultural heritage information resources; In the development and utilization of cultural relics information resources, cultural institutions should adhere to the public attribute.

On April 13, 2022, The Internet Finance Association of China and other departments jointly issued the Initiative on Preventing Financial Risks related to NFT. The Initiative called on member units to jointly curb the tendency of NFT financialization and securitization and strictly prevent risks of illegal financial activities.

7.1 Access to Public Chain

If the digital collection is applied on the blockchain public chain, it will face the problem of cross-border circulation, which involves the risk of exchange control, anti-money laundering, anti-telecom fraud and other aspects. For example, users can launder money by bidding up the value of digital collections and then trading them across borders.

7.2 Virtual Currency, Token

If digital collections are allowed to use virtual currency for settlement and circulation, digital collections will be attached with financial attributes, which will easily lead to the risk of illegal financial activities, which will threaten the status of national legal currency and cause great financial risks. The People's Bank of China and other institutions issued the Notice on Further Preventing and Handling the Risks of Speculation in Virtual Currency Trading, which clearly stipulates that Bitcoin, Ether, Teda and other virtual currencies are not legally compensable, that is, virtual currencies do not have the same legal status as legal currencies. Using virtual currency to carry out related business activities is illegal financial activities.

7.3 Hype, Money Laundering

In the absence of effective compliance supervision, if digital collections are allowed to be traded for any second time, digital collections will be separated from their actual value and become the object of financial speculation, which will become a pyramid selling game of "beating the drum and passing the flower". At present, although China controls the secondary trading of digital collections, there is still a phenomenon of online secondary trading under the pretext of donation. This is a disguised speculation, money laundering behavior.

7.4 Illegal Fund-Raising

If digital collections allow equity split, centralized listing auction, coin offering financing (ICO), it will be used in the name of "digital assets" to spread in the form of pyramid selling, circle money, promise of income, return, buyback, this will cause illegal fund-raising activities.

7.5 Infringement and Piracy

The copyright attribute is the core attribute of digital collection. If the distribution platform does not conduct copyright audit of digital collections, it will be unable to eliminate infringement and piracy from the source. The sale of unauthorized digital collections will constitute an infringement on the property rights of the holders of digital collections.

7.6 Illegal Publication

Online platforms providing digital collection works with editing, production, processing and other publishing characteristics to the public are illegal publishing acts and will be punished in accordance with the Provisions on the Administration of Online Publishing Services.

7.7 Information and Data Security

Digital collections are based on the blockchain platform, and blockchain technology belongs to information technology, of course, there are information security risks. The security risks of blockchain system can be divided into Internet system security and blockchain system-specific security in general. Internet system security issues refer to common information system security issues such as communication and network security, host security and mobile security. The specific security issues of blockchain system include consensus mechanism security, smart contract security and so on.

In addition, the common forms of centralized data storage and inert casting in digital collection business are easy to cause information security problems of digital collections, resulting in data loss and property loss of digital collections.

8 Conclusion

To sum up, China's agricultural digital collections not only need advanced information technologies such as blockchain and virtual reality, but also need rich agricultural cultural resources and reserves. They also need to strictly comply with China's laws and policies and pay special attention to avoid all kinds of risks.

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Authors' Contributions. This paper analyzes the significance and resource basis of the development of China's agricultural digital collections, expounds the main content of the construction of China's agricultural digital collections, points out the existing risks, introduces the relevant qualifications, which provides reference for the construction of China's agricultural digital collections.

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