

Research on Digital Music Copyright Distribution Mechanism based on Blockchain

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Abstract

Blockchain is a newly technology in recent years. It has high application value in digital music copyright distribution because of its data cannot be tampered, trust mechanism and decentralization. Based on the analysis of the current digital music copyright distribution mode, this paper proposes a new copyright distribution mechanism according to the characteristics of blockchain, which mainly solves the problem of copyright protection and centralized pricing.

Keywords

blockchain; digital music; copyright distribution.

1. Introduction

In the past three decades, the digital technology and Internet technology revolution has an impact on the national economy and social undertaking. The music industry is also an important application area for digital technology and Internet technology. Music copyright distribution is a core component of the music industry chain. The development of digital technology promotes the development of the music industry, and online digital copyright distribution has gradually become an important business model of the music industry in the distribution of music copyright.

2. Historical Evolution of Music Copyright Distribution

Music can be seen as meaningful information from the angle of informatics. Before human invented electronic storage technology (such as records and tapes, etc.), the spread of music after generation was very limited in both speed and space. Before Edison invented the phonograph in 1877, music could not be preserved and transmitted in a sound way, only the music scores produced by printing technology can be preserved and spread. And people can only rely on the live performance of performers or singers to appreciate music. Therefore, music was far from being called an industry in that era.

The invention of recording technology makes music can record, save and distribute sound. The advancement and popularization of recording technology cause the cost of recording and copying music rapidly decrease, in the emerging markets where copyright protection is weak, such as China in the 1980s and 1990s, the informally called "pirated" music gray industry rapidly expanded, resulting in the dilemma of music creation companies. This dilemma continues to the Internet era.

3. The Status Quo of Music Copyright Distribution in the Information Network Era

The information network era is the Internet era; the Internet originated in the 1990s was gradually applied in various fields, which has achieved simple information acquisition, huge storage capacity, rapid dissemination, and crosses time and space. These features were quickly

applied to the music field. The mode of music copyright distribution generated in the era of analog audio technology continues to develop in the Internet era.

In the first decade of the 21st century, the Internet industry has developed rapidly, which has gone through the WEB1.0 era of portal web, and has entered into information sharing era of decentralized mode such as blogs and Weibo. During this period, music copyright distribution evolved from the centralized distribution of music portals to the decentralized distribution centered on individuals. In the Chinese Internet industry, in the first decade of the 21st century, since copyright protection lags behind the development of the Internet industry, music piracy was more and more serious, unauthorized music uploading and downloading can be seen everywhere.

The popularization of 4G network technology leads the Internet from PC era rapidly develop to mobile era. Due to the promotion of industrial giants and the maturity and perfection of national laws, the copyright protection mechanism in the era of mobile Internet is becoming more and more perfect. The distribution mode of digital music copyright is relatively fixed. Due to the absolute advantages of Internet giants in capital, channel and user volume, the Internet platform has become a strong side in the distribution of digital music copyright. On the one hand, the Internet platform can require music creators to create and produce music according to market requirements. This has caused music creation to be mainly oriented by interests, secularization of music creation, commercialization is too serious, and artistry is neglected. Various artistically low catchy songs and template music are popular in the network, which is quite unfavorable for the improvement of the whole social art level. On the other hand, in order to attract the largest number of users, each Internet platform has to purchase almost all music copyrights, which has caused the cost of the Internet music platform to remain high and the profit model has been delayed.

In the existing information Internet mode, music creators, distribution channels (Internet platforms) and users (listeners and music users) are relatively simple music information search, music information transmission and music information receiving mode. Therefore, the current music copyright distribution is an information-based distribution mode, and value transfer is not realized in the music information flow. The Internet itself is an information delivery network, and the realization of value transfer requires new technologies. The combination of blockchain technology and Internet technology can realize the value delivery.

4. Blockchain and Value Internet

4.1. Blockchain Technology

"Blockchain" technology is a new decentralized infrastructure and distributed computing paradigm[1], which uses encrypted chain block structure to validate and store data, utilize distributed node consensus algorithms to generate and update data, and utilize automated script code (smart contracts) to program and manipulate data[1].

4.2. Value Network

The Internet has developed into a decentralized phase. The core of decentralization is that any information node in the network is a producer and communicator of value. Therefore, the use of blockchain technology in Internet technology has developed the original information Internet to the value Internet. The core issue of value Internet is the trust problem among network nodes, and the purpose of blockchain technology is to solve the trust problem in decentralized society. There are three core elements in the blockchain technology, the relationship between block and chain, decentralized storage, and consensus mechanism, a complete closed loop is formed among the three.

4.3. Digital Music Copyright Distribution based on Blockchain

Since the combination of blockchain and Internet technology can build a decentralized value Internet. In the value Internet, the value of the individual is recognized and accepted by the participants in the network through the trust consensus mechanism, and the data cannot be distorted. This feature has unique advantages in digital music copyright distribution. Therefore, this research attempts to construct a digital music copyright distribution model by using blockchain.

(1). Participants in the distribution of digital music copyright

The digital music copyright distribution network is a complex system involving a wide range of organizations and departments, including copyright holder groups, content providers, telecom operators, service providers, terminal equipment manufacturers, technology providers, and users. [3]

(2). Digital music copyright distribution based on blockchain

There are two core problems in the digital music copyright distribution at present. The first is copyright protection. In the Internet era, the copy, distribution, broadcasting, and information network spread right in copyright present a vague boundary, and the integration of rights makes the works definition of right use in the protection process become complicated and diverse [5]. The second is centralized pricing. The problem caused by traditional central pricing is digital music copyright and even music creators, and the pricing power of performers or singers is concentrated in the hands of powerful parties. These two problems have gradually hindered the upgrading and development of the digital music industry, and there is an urgent need for new models.

(1) Use blockchain technology to solve protection problem of digital music copyright

The blockchain technology is used to build a digital music value Internet and can solve two core problems. Under the support of blockchain technology, the current information Internet will develop to the value Internet. Data authenticity, Consensus-based trust and value will form three inseparable elements in the industry.

(2) Use blockchain technology to solve centralized pricing problems

In the digital music copyright distribution mode constructed by blockchain technology, the initiator of copyright value will be returned to the music creator, by using the consensus mechanism, all organizations and individuals involved in copyright distribution form a consensus on the value judgment of music copyright, similar to the workload proof, as copyright is continuously distributed and consumed, its value will be objectively increased or decreased because adhere to the same workload proof. Every link involved in the distribution can get incentives, and this incentive is generated in the transmission of copyright value. In this distribution mode, the pricing power is shared by each participant involved in the distribution, and a decentralized pricing way is formed.

5. Realization Conditions of Digital Music Copyright Distribution Mode based on Blockchain

The new mode of copyright distribution envisaged in this paper is based on solving the above two core problems, first, the blockchain data cannot be tampered with and its trust mechanism, it can be used to establish a public chain of digital music copyright, all activities related to copyright, such as copying, dissemination, trading, broadcasting, sharing, etc. are recorded and transmitted in the chain, second, the consensus and incentive mechanism of the blockchain are used to establish decentralized value Internet with value generation, transmission, pricing and transaction. Value the Internet. In order to achieve this new model, it is necessary to change in technology, market, policy and other links.

The blockchain is still in the early development stage, whether the technology itself, application areas and laws and regulations, all are still in the exploratory stage, but the whole information Internet is becoming clearer in the direction of value Internet development, therefore, we need to do research early in the field of digital music copyright distribution, believe that a new copyright distribution mode will emerge under the support of new technologies, which will have a major impact on the music industry.

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