



Research on Multi-party Co-governance Model of Commercial Digital Music Copyright Trading Market Based on Blockchain

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Abstract. In the Internet era, Chinese' digital music industry has achieved rapid development, and the protection of digital music copyright is of great significance in the process of its prosperity and development. Background music, as a segment of digital music, is facing various difficulties in copyright protection of background music while the market demand for it is gradually increasing. Blockchain has been widely used in the field of digital music due to its features of decentralization, non-tampering, and traceability, which provides a new solution to the problem of digital music copyright protection. By analysing the market status of background music and the problems it faces, this paper explores how to use blockchain technology to strengthen the copyright protection and services of background music, and promote the development of the multi-party co-governance model of the background music copyright trading market.

Keywords: Blockchain · Background music · Commercial copyright · Copyright protection

1 Introduction

Under the background of the continuous development of network information technology, the music industry has changed from the traditional offline mode to the online mode, and the music industry has entered the digital age. Different from traditional tapes and records, digital music transmitted on the Internet platform greatly reduces the cost of music production, dissemination and storage, and accelerates the dissemination and popularization of music to a certain extent. But it is also accompanied by the dilemma of rampant piracy, difficult rights protection, and difficult governance [1]. As the core resource for the development of the digital music industry, music copyright has always attracted everyone's attention. In 2015, the "Notice on Ordering Online Music Service Providers to Stop Unauthorized Distribution of Music Works" issued by the National Copyright Administration announced that it would vigorously rectify the rampant phenomenon of piracy in the digital music market, protect the legitimate rights and interests of genuine music, and promote the commercial development of the music

industry. Among them, commercial copyright refers to copyrighted music used for commercial activities such as advertising marketing, content production, and commercial and supermarket public broadcasting, such as self-media videos, TV advertisements, and background music in supermarkets [2].

As a subdivision of digital music, Background Music (BGM) refers to music that is used as a background foil in movies, TV series, games, websites or public places to adjust the atmosphere, mostly pure music without vocals. From traditional movies, TV, commercials, animations in the past, to the gradually emerging self-media such as Vlog, live broadcast, and short video, there is a long-term demand for BGM. Based on the analysis of the current situation of BGM authorization in commercial digital music, this paper proposes a comprehensive governance scheme to regulate this market segment.

2 Analysis of the Current Situation of the BGM Market

In recent years, the state has issued a number of policies to promote the construction of the music industry and strengthen the protection of digital music property rights. Among them, the “Several Opinions on Vigorously Promoting the Development of my country’s Music Industry” issued by the State Administration of Press, Publication, Radio, Film and Television in 2015 strongly encouraged the development of the music industry. In 2017, the “National “Thirteenth Five-Year Plan” Period Cultural Development and Reform Planning Outline” clearly proposed that the “music industry” should be included in the “major cultural industry” project, and the music industry should be elevated to the national strategic level [3]. In terms of copyright protection, the application of blockchain in digital music is also expanding based on its features of decentralization, non-tampering, and traceability. Digital rights management (DRM) technology uses the method of encrypting digital music and embedding license to protect digital music copyright. In addition, digital watermarking technology can also prevent unauthorized misappropriation of digital music.

No matter what type of digital music, its industry chain can be divided into three links: the upstream creation link including record companies, musicians, music studios, etc., the midstream communication link including various digital music platforms and licensing platforms, the downstream consumption links covering the majority of users and enterprises.

In the upstream link of the industry chain, more than half of music copyrights in China are scattered in the hands of independent musicians, music studios and other record companies other than Universal, Sony, and Warner. The number and value of copyrights show a trend of separation. The output channels of these music contents are limited, and their music copyright value cannot be fully reflected. Therefore, Chinese’ long-tail music copyright market still has great commercial value to be tapped.

In the midstream of the industry chain, compared with NetEase Cloud Music and QQ Music, which are consumer-oriented digital music platforms with diverse music forms and mature development, the audience of BGM authorized platforms are mostly commercial users, and the audiences on the platform are mostly commercial users. The music forms are mainly pure music and remixed music, which are mostly used for re-production in advertising, film, TV, video and other scenarios, and the market demand

is large. At present, the well-known BGM licensing platforms in China include VFine, Quduoduo, Zomba Music, Monkey Music, etc. The music material of the platform supports the one-stop music authorization service of “online selection - download and trial - genuine authorization”, which can meet the soundtrack needs of various application scenarios such as variety shows, games, advertisements, animations, and short videos.

In the downstream link of the industry chain, users can be divided into four categories according to type: content production, advertising marketing, terminal embedded and commercial and supermarket public broadcasting. Nowadays, a large number of self-media creators use related music without copyright authorization, and are less willing to pay for genuine music and have low copyright awareness. Therefore, promoting the development of music legalization in this field is the key problem to be solved in this paper.

3 Problems Facing the BGM Market

3.1 Frequent Occurrence of Infringements

Although the Chinese legal system for digital music infringement is constantly being improved, infringements still occur frequently in the commercial process of BGM. First of all, “commercial use” is called “commercial use”, which is a kind of profit-making behavior, which not only includes the direct gain of monetary benefits, but also involves indirect profit-making behaviors. According to Copyright Law of the People’s Republic of China, the reckless use of intellectual achievements of others for profit without permission and without paying any remuneration is a copyright infringement [4]. Previously, in China’s first supermarket background music infringement case, Meilianmei Supermarket played “Mother in Candlelight” as background music in the supermarket without authorization and without paying the copyright fee, and the Music Authors Association sued it, claiming economic losses and rights protection expenses of more than 16,000 yuan.

3.2 The Large Scale of Commercial and Supermarket Public Broadcasting is Difficult to Manage

In China, commercial and supermarket public broadcasting is a scene with more BGM applications. Most shopping malls, supermarkets, restaurants, and hotels will play background music on a daily basis. However, businesses in many public places often ignore the source of background music and broadcast unauthorized BGM, which has caused infringement unconsciously. According to an industry survey report by Nielsen, a world-renowned research company, public broadcast infringements by small businesses are rampant, causing an average annual loss of \$2.65 billion to the entire music industry. However, since there are thousands of for-profit public places in my country, the number of businesses is huge and scattered, and it is difficult to supervise them. Moreover, for scattered public places in remote areas, it is difficult to detect various problems in a timely manner, such as when and where the business played which background music, whether it constituted infringement. Therefore, in the face of a huge and difficult-to-regulate market, how to regulate it has always been a difficult problem.

3.3 There is Still a Lot of Room for Improvement in the Commercial Licensing Platform

The most convenient and safe way for merchants to obtain music copyright is to find a formal and reliable commercial music authorization platform to purchase music copyright and obtain an authorization certificate, to avoid worries. However, the user stickiness of BGM authorized platforms is relatively small. When a certain platform does not have the BGM required by users, most users will choose to switch to other platforms. Therefore, only by having more music libraries and copyright resources, and accurately match the needs of users. Users can quickly search for the required resources in a short time so that they can have a clear competitive advantage in the market. Different from the rapid and mature development of traditional digital music platforms in terms of copyright ownership, back-end algorithms, and commercial implementation, domestic BGM commercial licensing platforms still need to be further improved.

4 Countermeasures to Regulate the BGM Licensing Market

As the country's management of digital music copyright continues to standardize and strengthen, the public's understanding of digital music copyright has been greatly improved compared with the past, and the payment for digital music has also improved. However, there are still many business users who need to strengthen the copyright awareness of BGM. Many people think that as long as the videos they publish are not used for commercial purposes, they can use background music at will. But judging whether there is infringement does not depend on the usage scenario. The key is whether the user has obtained the permission of the copyright owner. In addition, the domestic undeveloped background music protection system is also one of the reasons why merchants have not formed the habit of paying for use.

Most of the existing music copyright trading platforms in China adopt a two-way charging model for music producers and corporate users. BGM-side enterprise users purchase music copyrights on the authorized platform, and the platform divides the copyright income with music producers, and provides free basic services and paid value-added services for music producers. Paid value-added services do not limit the number of times musicians can upload music, have more opportunities for copyright certification and wider dissemination channels, and the proportion of profit sharing is also greater than that of free basic services. With the continuous increase in the number of BGM users and more abundant resource docking, providing paid value-added services to music producers will be more conducive to the commercial survival and development of copyright platforms.

In addition, some domestic authorized platforms can record the profit sharing ratio on the blockchain, and the data cannot be modified after it is on the chain, which can avoid the interest disputes between the platform and the music producer to a certain extent.

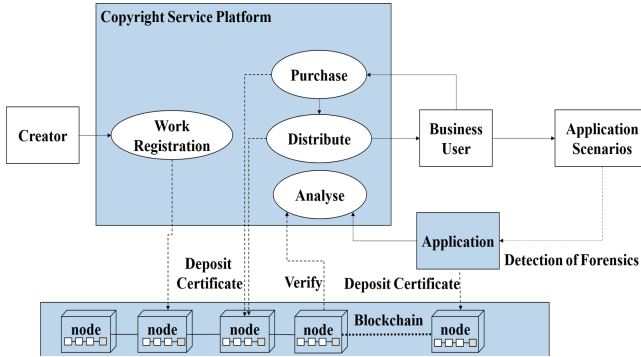


Fig. 1. The whole process of background music copyright transaction based on blockchain.

5 Use Blockchain Technology to Strengthen BGM Copyright Protection and Services

When BGM users want to purchase music copyrights on the music authorization service platform, the platform should be able to provide legal and valid copyright certification instructions to avoid false authorization, unrecognized or denial of authorization. Therefore, the blockchain can provide an effective solution for BGM copyright protection based on technical features such as decentralization, non-tampering, traceability, openness and transparency (Fig. 1).

The creator registers his work on the copyright service platform, stores all the relevant information of the background music on the platform, and signs a relevant agreement with the platform, stipulating that when the user purchases the creator’s music, the user will share the profit ratio with the platform. When B-end users purchase background music on the copyright service platform, after paying a certain fee to the platform, the platform will distribute the music works required by the user and have completed the confirmation and deposit to the user. At the same time, the platform will share the profit ratio according to the profit sharing ratio agreed in the contract. After that, B-end users can use the music in various application scenarios. In addition, the copyright service platform will also specially design an APP to carry out rights protection and evidence collection. People can use the APP to listen to songs and recognize songs, and then the APP will analyse the current music identified on the copyright service platform, and retrieve which BGM users have purchased the music, so as to determine whether the business is unauthorized. Use that music. The above transaction process will be stored on the blockchain, and no one can tamper with it. Next, the author will explain in detail how to use blockchain technology to strengthen BGM copyright protection and services.

- (1) The background music copyright is confirmed and deposited. In the blockchain network, when the creator of the background music uploads his work to the system, the blockchain will generate a digital fingerprint with the relevant information of the work and the right holder, and establish a one-to-one correspondence between the work data and its digital fingerprints to guarantee the uniqueness, authenticity

and integrity of the work data. Therefore, the background music files, background music copyright information and other data are stamped with time stamps and stored in the blockchain network to generate a credible certificate of background music copyright data. Specifically, first, the existence and integrity of each background music copyright information is ensured. The timestamp makes the data of each background music time stamped, which is equivalent to the production date of the data, which can prove the ownership of the music content by the copyright owner of the background music. In the blockchain network, the ownership information of background music will generate a unique and untamperable proof of existence through hash algorithm, timestamp, asymmetric encryption, consensus mechanism, etc. Second, ensure that the copyright data is accurate and orderly. Timestamps can prove the sequence of copyright confirmation. The basis of its work is the validity of the hash algorithm. The hash algorithm is a one-way cryptographic mechanism that ensures that transaction information cannot be tampered with in the blockchain. The timestamp exists in the blockchain from the moment it is generated, and the blocks that have been generated in the blockchain cannot be tampered with, because once tampered with. Because once tampered with, the generated hash value will change and become invalid data. The decentralized feature of the blockchain also enables the background music copyright data and its transaction records to be shared and synchronized among all nodes in the entire network, and all nodes jointly maintain the same ledger.

- (2) Smart contracts promote the convenience of background music copyright transactions. A smart contract is a computer protocol designed to inform, verify, or execute a contract. In a blockchain network, smart contracts are defined and enforced by code. Different from traditional contracts, the two parties of a smart contract do not need to trust each other. When the preset conditions are reached, it fully automatically executes the contract content and cannot be interrupted or reversed, ensuring the efficiency and security of copyright transactions. At the same time, its feature of not relying on a third party to operate also greatly reduces transaction costs. In the blockchain system, smart contracts can automatically track contract performance and limit transaction execution. It is very suitable for music copyrights with short, frequent, and fast production, circulation, and consumption processes, making it easier and more convenient to “use rights” for background music.
- (3) Traceability supports the proof of background music rights protection. At this stage, China’s judicial procedures follow the principle of “whoever claims, who will provide evidence” for copyright disputes, which means that once infringement occurs, creators must bear the obligation to provide evidence in order to protect their own interests. Due to the traceability of the blockchain, the process of background music copyright transactions will be completely and accurately recorded. When infringement occurs, blockchain technology can digitize the records of infringement, so as to realize judicial evidence collection methods with high reliability and low cost of evidence collection, and safeguard the rights and interests of creators. At the same time, this more simplified evidence collection process and more active infringement monitoring methods not only improve the efficiency and effectiveness of rights protection, but also stimulate the entire society to further enhance the awareness of copyright protection.

6 Audio-Writing Associations, Platforms, and Merchants Collaborate to Improve Industry Standards

The BGM commercial licensing market corresponds to an intertwined and complex network. In order to improve industry norms and change the chaos of infringement, the cooperation of audio and author associations, licensing platforms and merchants is required.

For BGM users, if they want to obtain the copyright of BGM, they need to find the copyright owner, negotiate the specific copyright fee, agree on the scope of use, etc., which is a very time-consuming and labour-intensive thing. Based on this, the China Music Copyright Association (hereinafter referred to as the “Music Works Association”) can establish an open and comprehensive copyright information retrieval database, and aggregate the scattered copyright information of songs into the database and present them in a centralized manner. At the same time, a systematic copyright pricing standard is established to formulate a value evaluation basis for copyright content. If a merchant wants to use a certain BGM in a public place, they can query the copyright information of the BGM in the database, and pay the BGM royalties to the Audio-Visual Authors Association according to the copyright pricing criteria. After the Music Works Association receives the fee, it will distribute the amount to the copyright owner of the music according to the distribution rules through legal procedures. The establishment of this database can greatly reduce the cost of copyright information search and verification, and reduce obstacles for businesses to obtain BGM copyright licenses [5].

For the authorization platform, if blockchain technology is used in the copyright authorization process, the registration time and the cost of copyright registration can be greatly reduced. The openness of the blockchain allows copyright owners to write information to the blockchain at anytime and anywhere, so that copyright registration is not limited by time and space, and the cost is very small compared to traditional methods. After the threshold for copyright registration is lowered, more and more works will be registered for copyright, and the number of copyrighted music owned by the platform will also increase.

In terms of commercial implementation, the platform can follow the trend of short video outbreaks and actively cooperate with mainstream social media. For example, when an uploader or vlogger uses the BGM on the platform, a link to the company’s website can be implanted to introduce customer flow to the platform. At the same time, the platform can increase advertising investment and put a lot of content in the opening advertisement of the video website to seek traffic conversion. In addition, the BGM licensing platform should also continuously improve the platform algorithm technology, strengthen the humanized design, enable commercial users to more efficiently search for the music they need, and promote the process of genuine BGM commercial licensing.

If the BGM commercial licensing market wants to develop sustainably and healthily, in addition to the blessing of national policies, government regulation and the continuous improvement of the licensing platform, the cultivation of the copyright awareness of major BGM users should also be strengthened. For example, public figures are invited to shoot related knowledge popularization short videos to be broadcast in public areas such as supermarkets and shopping malls. Posters are posted in crowded places to promote copyright knowledge, etc. At the same time, it is possible to inform merchants

about related background music infringement incidents, which not only makes merchants aware of the existence of music copyrights and reduces the situation of playing background music at will, but also promotes the legitimate development of the digital music industry.

7 Conclusion

Napoleon said, “Among all emotions, music has the greatest impact on emotions.” As an important way to communicate with spiritual life, music can span the long river of time and continue to grow in historical development, constantly bursting with new power. The frequent occurrence of infringement in China’s background music market is caused by the interaction of various reasons such as lack of laws, poor organization and management, and users’ lack of copyright knowledge. The rectification of the market requires the coordination of various parties in the industry to improve the compliance of business users with BGM’s copyright use, and to promote the legalization process of BGM commercial authorization.

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Authors’ Contributions. Based on the analysis of the market status of background music and the problems it faces, the author proposes to solve the problems existing in the stages of background music authorization, right confirmation, and rights protection by using the technical features of blockchain such as decentralization, non-tampering, traceability, openness and transparency, so as to strengthen the copyright protection and service of background music. In addition, for the various market players of background music, the author also proposes corresponding behavioral plans to encourage all parties to improve collaboratively and improve industry norms.

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