

Research on the Judicial Application of Copyright in Blockchain Electronic Deposit

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ABSTRACT

Blockchain technology, with its decentralized and hard-to-tamper characteristics, can ensure the authenticity and reliability of digital copyright electronic data in the generation, storage, transmission, authentication and verification stages. Both my country's Internet courts and third-party platforms have initiated active exploration of blockchain electronic data deposits. In practice, digital copyright blockchain electronic data deposits still have difficulties such as lagging legal adjustment mechanisms, insufficient business scenarios, and doubts about platform qualifications and proving power. It is necessary to intensify the legal adjustment of blockchain electronic deposits, refine the practice scenarios of blockchain electronic data deposits, pay attention to reviewing platform qualifications and ensure the reliability of evidence collection methods.

Keywords: *Electronic copyright, Blockchain, Electronic data deposits, Judicial application.*

1. INTRODUCTION

Digital copyright relies on the development of mobile Internet technology, and the Internet's easy-to-copy, easy-to-distribute, and non-linear behavior model has brought new challenges to copyright protection.[1] Blockchain technology can record electronic data in blocks, which helps to solve the problems of difficulty in defending traceability and low credibility of electronic copyright confirmation. In June 2018, the Hangzhou Internet Court issued a public judgment on a dispute over the infringement of the information network dissemination rights of works, and for the first time confirmed the legal validity of electronic data deposited using blockchain technology.[2] In practice, blockchain technology has been applied in areas such as supply chain management, smart medical care, and smart transportation. "Smart cities" have brought opportunities to solve the rapid urbanization of the world population. The blockchain is transparent, automatic, and safe, help improving smart city services and promote the development of smart cities.[3]

2. THE APPLICABLE VALUE OF BLOCKCHAIN DIGITAL COPYRIGHT ELECTRONIC DATA STORAGE

Using blockchain electronic data storage certificates, the integrity of digital copyrights is guaranteed. By using trusted timestamps, electronic signatures, hashing and other technologies to ensure that electronic data is not tampered with; through trusted clouds, electronic data is encrypted and stored. To ensure the security of electronic data; the blockchain electronic deposit certificate has strict timing, and according to the timing irreversibility of the blockchain, it can ensure the credibility of the deposit time.

2.1. Coupling between Blockchain and Electronic Data Storage

Ordinary deposit certificates will increase the risk of data tampering, data integrity will be destroyed to a certain extent, and third-party certificate deposit platforms may also experience unexpected conditions such as unstable services. Taking image electronic copyright as an example, in the existing image electronic copyright transactions, the original attributes of some transaction image content cannot be identified. Taking the music industry as an example, with the help

of blockchain to operate digital music works, it is possible to truly and effectively record the creator, ownership status, transaction price and other information of the music work, thereby forming an immutable "decentralized shared ledger" to solve digital works Easy to be troubled by private copying and illegal transmission.[4]

The electronic data recorded on the blockchain is highly transparent and cannot be tampered with. It can effectively fix digital evidence, realize effective copyright supervision and reduce rights protection costs in a "self-certified" manner. It has realized the evolution of the Internet from "delivering information" to "delivering value" and provides a new trust creation mechanism for this.[5] When a person wants to forge data, not only the corresponding block needs to be forged, but also all the blocks linked after the block.[6] The "time stamp" and hash encryption technology on which the blockchain is based has gradually been recognized in my country's judicial practice. From the time stamp protection at the creation stage of the work to the display of the time stamp certificate at the publication stage of the work to declare copyright, and then to the application as valid evidence in the infringement lawsuit, it is possible to control the wanton use of the work by others and protect the interests of the original copyright owner.[7]

2.2. Basic Attributes of Blockchain Electronic Data Storage

2.2.1. The Authenticity of the Data Source

In Hangzhou Internet Court's judgment, the court held that the third-party evidence storage platform was deployed on the general Alibaba Cloud server and was recognized by the industry such as the website's first-level security certification. Except for negative evidence, the website should be deemed to have a secure environment for electronic data generation. From a technical point of view, the puppeteer and curl programs that are automatically invoked by the third-party storage platform for web page crawling and source code identification of target links. It is also open and universal, and a series of operations are automatically completed by the computer according to the preset procedures.

2.2.2. The Reliability of Data Storage

Including the upload of electronic data to the public blockchain, the mutual verification of the content of each blockchain, and the generation time of the block node is logical. The heart of the blockchain is a peer-to-peer network, not a central server. The brain of the blockchain is a consistent algorithm that regularly synchronizes the peer-to-peer network. The lifeblood of

the blockchain is an encrypted and linked data log. It is reliable as a method of maintaining content integrity.

2.2.3. The Integrity of Data Content

The first is the integrity of the electronic information itself, which means that the content of the data remains intact and unaltered; the second is the integrity of the hardware equipment on which the electronic evidence relies, which mainly means that the system that records the data must be in normal operation; There must be a complete record; the record must be made at the time or immediately after the relevant activity.

3. PRACTICAL EXPLORATION OF BLOCKCHAIN DIGITAL COPYRIGHT ELECTRONIC DATA STORAGE

In accordance with scientific and reasonable technical specifications, the generation, storage, transmission, certification and verification phases of electronic data for deposits are completed in sequence. In the generation stage of digital copyright deposit certificates, completeness and authenticity are the characteristics of electronic data stored in the blockchain. In the storage stage, blockchain technology is used as a storage medium, and its storage is stable and not easily tampered with. In practice, local law institutes have also actively explored.

3.1. Legal Application Basis of Blockchain Electronic Deposit Certificate

Articles 4-8 of my country's "Electronic Signature Law" specifically stipulate the issues of written form, original form, preservation requirements, admissibility and power of proof of data messages. The Contract Law and the Road Traffic Safety Law also have provisions for electronic evidence. The 2019 "Blockchain Judicial Deposit Application White Paper (Version 1.0)" explained in detail the system design principles and system design characteristics of blockchain electronic data deposits, and described and summarized the key technologies.

3.2. Exploration of the Application of Blockchain Evidence in the Internet Court

In June 2018, the Hangzhou Internet Court issued a public judgment on a dispute over infringement of the information network dissemination rights of works, and for the first time confirmed the legal validity of electronic data deposited with blockchain technology. In September 2018, Beijing Internet Court accepted "Tiktok" to sue for "Huopai video" copyright. The Tik tok platform uses a third-party evidence storage platform to automatically and batch electronically obtain evidence for short videos that involve

infringement, and uses blockchain technology to store the hash value on the chain to prevent tampering. In 2019, the Guangzhou Internet Court launched an electronic data storage system. In addition, the Higher People's Courts of Jilin Province and Shandong Province have successively developed electronic evidence platforms.

3.3. Practice of Blockchain Data Storage on Internet Platform

3.3.1. Baidu Totem Genuine Picture Authorization Platform

Baidu Totem and Veer Gallery jointly launched a genuine image authorization platform, aiming to help content producers and service providers in the Baidu ecosystem obtain high-quality and high-quality genuine image materials, and achieve efficient distribution and circulation of genuine content.[8] A series of copyright protection solutions including copyright storage, copyright authorization, and monitoring rights protection have been formed, providing content works with "existence proofs" with clear time stamps, realizing "creation is right confirmation, use is authorization, and discovery is right protection".

3.3.2. Ant Blockchain one Stop Protection Platform

It supports one-stop API access and provides a visual interface, solves copyright authentication and other tasks that cannot be done manually, and realizes credible copyright unified authentication, management and transaction capabilities. The implantation of video DNA capabilities can give play to its advantages of service stability and anti-attack, provide unique tags for multiple media, support millisecond-level retrieval of billion-level DNA libraries, and use blockchain + video AI technology to create trustworthy Copyright database and digital copyright asset trading platform.[9]

3.3.3. 360 Original Image Authentication Platform

This platform provides three core functions of blockchain copyright certification, brand traffic revenue, and network-wide copyright protection for the majority of content creators. The data on the chain is no longer kept by the authoritative party, and each participant keeps a data backup. Regulators can retrieve and verify business data at any time, [10] and open up 360's ten major product systems to help original authors obtain traffic sharing revenue, and achieve a "win-win" search engine traffic and content industry creation.

4. THE CHALLENGE OF DIGITAL COPYRIGHT BLOCKCHAIN ELECTRONIC DATA STORAGE AND CERTIFICATION

4.1. The Legal Adjustment Mechanism Is Relatively Lagging

At present, most of the blockchain workers are IT front-line engineers, lacking knowledge of the difficulties and development status of digital copyright legal work, and need to further understand judicial regulations. However, most legal personnel do not have sufficient research on technology, and it is difficult to achieve in-depth exploration of technology. Compared with the lag of technology, the identification and characterization of blockchain electronic deposits in judicial practice is relatively vague, and various rules and regulations for standardizing processes are also in the complementary stage.[11] The ambiguity of relevant laws also makes it difficult for judicial trials to form universal rules, causing a lot of trouble to the parties. The electronic evidence submitted by the parties during the court trial is often incomplete, which increases the difficulty of the court's review.

4.2. The Judicial Business Scenario Is Not Detailed Enough

Under the traditional business model, it is very difficult to authenticate digital copyright electronic evidence, which directly affects the admissibility ratio in trials. The usual way of displaying electronic data in evidence is to transform it into documentary evidence. Due to the limitation of the expressive power of paper, this mode not only wastes resources, but also cannot express the diverse characteristics of electronic evidence. As far as the application of blockchain electronic data storage is concerned, the current blockchain technology is still in a very early and rapid development stage. Factors such as high application investment cost and low system security have led to the corresponding blockchain storage certificate. The judicial application business scenarios of China still need to be expanded.

4.3. Platform Qualifications and Proving Power Are in Doubt

Insufficient supervision of certain depository platforms and media platforms cannot control digital copyright transactions of online media, which will bring great risks to these transactions.[12] Data stored on third-party platforms is easy to lose and be tampered with, and cannot guarantee security and reliability, and it is difficult to realize data sharing.[13] In practice, most defendants will contest the qualifications of the plaintiff's evidence collection platform, questioning its

neutrality and authority.

5. THE APPLICABLE PATH FOR DIGITAL COPYRIGHT BLOCKCHAIN ELECTRONIC DATA STORAGE

5.1. Increasing the Legal Adjustment of Blockchain Electronic Deposits

It is necessary to accelerate the establishment of legislation for digital copyright blockchain deposits, clarify the scope of application of blockchain deposits, optimize the review methods and channels of deposits, establish specialized management institutions and staff in layers, and clarify legal responsibilities for all parties. Standardize the procedures, personnel participation, and equipment use of electronic deposit certificates in judicial authentication institutions and notary offices, try to unify the expression of data deposit generation time, standardize the hardware and software environments when depositing certificates, and strengthen the supervision of the deposit platform.

5.2. Refining the Practice Scenarios of Blockchain Electronic Data Storage

Blockchain technology needs to be specifically modularized and reasonably packaged for digital copyright business scenarios in order to be more suitable for judicial deposit business scenarios. The data stored in the blockchain system is maintained by multiple parties, and the identification method of centralized storage of the original data is no longer applicable. Blockchain browsers can effectively represent the data storage in the blockchain system. [14] Whether this way of proof meets the needs of proof business is currently unfounded.

5.3. Basic Reviewing Platform Qualifications and Ensure the Reliability of Evidence Collection

In the face of doubts about the effectiveness of blockchain electronic evidence deposits, the proving party should prove that the third-party technology platform for blockchain deposits has relevant technical capabilities. The country responsible for the time stamp service system through the highly authoritative National Time Service Center of the Chinese Academy of Sciences Standard time traceability and system time synchronization and distribution ensure the accuracy of the formation time of electronic data. [15] During the forensic collection process, the parties should strictly inspect the forensic computer and the forensic environment, use time service, cloud systems and other cutting-edge technologies to determine the time for evidence collection and ensure that the forensic

environment is good and not controlled by the forensic subject. The court reviews the authenticity of the forensic data and the reliability of the method of obtaining evidence based on evidence such as the inspection process, inspection reports, and technical principles.

6. CONCLUSION

The use of blockchain technology for copyright protection can effectively solve the drawbacks of long registration period and high cost, and reduce the risk of infringement. In the future, we should strengthen the construction of electronic deposit platforms, and protect works with the lowest cost and highest efficiency.

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