

Research on the Approach and Regulation of Blockchain Technology of the Protection of Network Cultural Products Dissemination

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ABSTRACT

The rise of the Internet and big data has realized the digitization of the cultural industry, accelerated the promotion of cultural and literary works on the Internet, and expanded its scope of influence. At the same time, its development has also aggravated the long-standing moral issues in the cultural industry, such as privacy leakage, data theft, copyright infringement, etc., which seriously hinder the healthy development of the cultural industry. Based on the Internet, multi-node composition and decentralization, the blockchain, as a distributed ledger system, has the characteristics of “decentralization”, equal node status, de-third-party trust, and difficult data tampering and forgery. Its application will bring great value in cultural industry management. At the same time, as a new type of technical structure combination, the application of blockchain in the field of cultural industry is not achieved overnight, and there are certain technical obstacles in itself, and the relevant regulations have not yet been constructed, which need to be studied and solved urgently. Based on the dilemma of the network cultural products dissemination protection, this paper introduces the blockchain certificate technology, hoping to realize the new trend of the protection of network cultural products dissemination by building an excellent blockchain network cultural product protection model, technical approach, regulatory system and rule system.

DILEMMA OF THE NETWORK CULTURAL PRODUCTS DISSEMINATION PROTECTION.

In the digital age, the Internet, big data and other information technologies are developing rapidly. The cultural content based on the Internet presents new features such as multi-subject, technological empowerment, “participatory culture” deeply affecting the creation of cultural content, and ecological non-linear propagation. It subverts the traditional cultural content production methods such as many production restrictions, non-ecological linear communication, and passive acceptance. As one of the public utilities, the cultural industry has realized the digital process of the cultural industry due

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to the rise of technology such as the Internet and big data. On the other hand, for a long time, privacy leakage, data theft, copyright infringement and other moral issues have always been difficult to cure in industrial operation. Some platforms and staff wantonly transfer non-original works without authorization, which damages the rights and interests of the original creators, disrupts the network market order of the development and dissemination of cultural products, seriously hinders the healthy development of the industry itself, and brings difficulties in supervision and regulation.

The Production of Network Cultural Products Highlights New Features.

CONTENT PRODUCTION AND DISSEMINATION TEND TO BE PERSONALIZED AND FRAGMENTED.

Internet technology has changed the production paradigm of traditional cultural content, branding the production of cultural content in digital society with new technical characteristics. The production of network cultural products highlights new characteristics. As General Secretary Xi Jinping said in the speech at the symposium on literary and artistic work, “Internet technology and new media have changed the form of literature and art, spawned a large number of new types of literature and art, and also brought profound changes in the concept and practice of literature and art. With the development of digitization of characters, visualization of books, and networking of reading, literature and art, as well as social culture, are facing major changes.”. The form of literature and art and the content of network culture also demonstrate the same feature. The current content production of network cultural products highlights the characteristics of civilian of main production groups, diversification of production methods and fragmentation of cultural content dissemination. First, the main body of production group is civilian. As of March 2020, the number of Internet users in China is 904 million, and the Internet penetration rate is 64.5%. The high coverage of network infrastructure and the openness of network applications have opened the door to free expression of ideas and provided a diversified, display and interactive platform for different groups. Second, the mode of production has changed. Different from the traditional top-down and linear production mode of cultural content, technology in the digital society has shaped a new ecological content production system and constructed a diversified and multi-dimensional cultural content ecosystem. Third, the mode of transmission is fragmented. The increase in the proportion of mobile Internet users and the prominence of the “cognitive surplus” effect reflect the shift of people to a fragmented lifestyle, in which the fragmented dissemination of network cultural content is an important factor. The fragmented lifestyle has accelerated and boosted the development of short video, microblog, WeChat and other media types with short message output as the core, and also provides channels and platforms for contemporary people to pursue personalized and customized expression.

THE APPLICATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IS HIGHLIGHTED AS A TECHNICAL FEATURE

Relying on the Internet as a carrier, using artificial intelligence technologies such as big data, cloud computing, and the Internet of Things, network cultural content has subverted traditional cultural content production in terms of rich innovation, experiential scene construction, and precise content customization. First, driven by artificial intelligence technology, the network culture form tends to be rich, and a systematic and comprehensive form content system including network literature, network music, online games, network animation, network drama, network film and television, network performance, and network art works has been constructed. Secondly, the emergence of VR, AR and MR technology constantly enriches the scene of network cultural experience. Through the combination of virtuality and reality, it creates scenes with different themes for users, constructs an appealing cultural content space, and creates an all-round immersive scene experience. Thirdly, the algorithm characteristics of artificial intelligence technology quickly promote the production of precise and customized network cultural content. AI logic, big data technology and deep learning algorithm are combined to provide strong technical support for precise, customized and personalized network content production by mining and analyzing user preferences. Artificial intelligence, with its technical characteristics as a technical element, has become the most obvious feature of contemporary cultural production and dissemination.

The Difficulty of Product Supervision is Unprecedented

The new characteristics of the production of cultural products in the digital society and the conflict between the diversified value of network culture bring new challenges and difficulties to the supervision of network cultural products. The specific performance is as follows.

THE NEW CHARACTERISTICS OF MORAL ISSUES INCREASE THE DIFFICULTY OF AUDIT SUPERVISION

The production of network cultural products highlights the technical enhancement in the new features, which determines the concealment of the illegal content of traditional network cultural products and the difficulty of supervision. Especially in the network black and gray industry, which often uses unclear management boundaries and regulatory measures lagging behind the practice of industrial development, it greatly increases the difficulty of network content supervision. With the improvement of technological level, moral issues such as privacy leakage, data theft and copyright infringement in the network culture industry show the characteristics of professional illegal means, hidden forms and wide scope, which also increase the difficulty of government supervision. First, in terms of means, IPTV, OTT, P2P, cloud storage, 'crawler' and other technologies have been applied to the production and dissemination process of network cultural content, as well as to steal user information, corporate

business secrets, and data. It poses a serious threat to various types of information security, affects normal network life, and disrupts the order of market transactions. secondly, in terms of form, the subject of moral issues acts anonymously and falsely, relying on live broadcasts, short videos and other channels, using instant releases, instant withdrawals and other forms to spread bad cultural content, and its behavior has the characteristics of concealment and strong anti-investigation, which greatly increases the difficulty of evidence collection and investigation by the management department. Finally, in terms of scope, based on the real-time online communication function of the Internet platform, the gang crime rate has increased, which has increased the difficulty of tracing for the management department, and also posed a huge challenge to the construction of a clear network cultural environment. The new technical characteristics of moral issues are the side reflection of the development of the Internet, which also requires the relevant audit supervision departments to have industry object consciousness and advanced consciousness. On the basis of summing up experience, according to the characteristics of the technological development, we should do a good job in risk analysis and prevention and take timely measures to deal with various problems.

THE FASTER PROPAGATION SPEED OF ONLINE CULTURAL PRODUCTS HAS INCREASED THE DIFFICULTY OF AUDITING AND SUPERVISION.

The popularization and comprehensiveness of network applications have brought about a rapid increase in the number of network cultural products, which has brought new and more difficult challenges to maintaining a stable number of government audit supervisors and building a multi-level audit supervision organization. First of all, the supervision of network culture industry includes three levels. The first is the supervision of product circulation in operation, including the production, dissemination and use of network cultural products. Second, according to the different nature of the content of specific network cultural products, differentiated management is carried out to achieve multiple goals such as protecting high-quality information and suppressing inferior information. The third is the supervision of the theme of keeping pace with the times, including the review of the cultural content of various types of existing cultural industries and the emerging formats generated with the development of the times. It is very difficult to deal with different network cultural content from different levels, which is very difficult to challenge the professionalism, efficiency and timeliness of the audit supervisors. In addition, the massive network cultural products are manifested in a large number and a wide range. The huge number of cultural products, the requirements of specialization, and the updating of a wider range of types, coupled with the characteristics of network immediacy, interactivity, and universality, pose an unprecedented challenge for the government to audit and supervise various cultural products efficiently and accurately.

BLOCKCHAIN CERTIFICATE STORAGE TECHNOLOGY ROUTE AND ITS APPLICATION CASES

Overview of Technical Principles

The blockchain electronic data storage system is constructed based on the blockchain network, the court electronic evidence platform, and the participant server. It consists of three layers: node management layer, blockchain service layer, and judicial application layer. The blockchain certificate is “decentralized”, and the certificate is separated from the notary public and the third-party electronic certificate storage institution. Using the technical characteristics of the algorithm itself (consensus mechanism and decentralized storage technology), the electronic data that needs to be stored is recorded in the form of a transaction without the need for a proof from a third-party institution, and the timestamp is recorded in the block at the same time, thereby completing the entire certificate storage process. The court and other third parties calculate the HASH value of the data packet and compare it with the data on the blockchain. After verifying the security of the network deposit certificate data, if they want to further verify the authenticity of the captured data, the original data content captured by other third parties can be compared with the original data content of the chain deposit certificate to enhance the integrity, credibility and authenticity of the data. As a technical credibility, blockchain preserves data in the whole process of judicial evidence storage and builds a social infrastructure with high credibility. The combination of these three credibility makes the cross-time mechanism continuous, unified and verifiable.

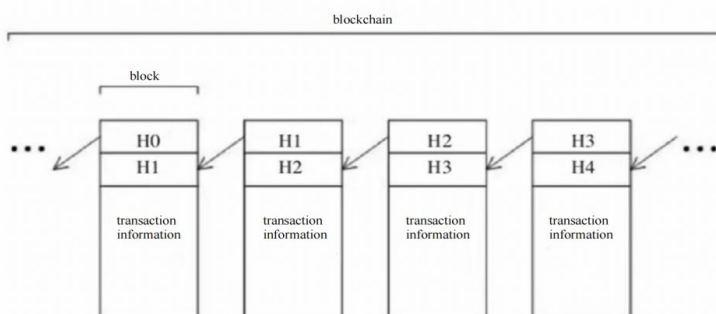


Figure 1. Blocks are connected into blockchains.

Blockchain Certificate Application Case of Network Cultural Product Dissemination Protection

The first case of blockchain electronic evidence in Beijing District Court made a judgment on September 25, 2018. In this case, the court conducted a strict and detailed review and legal argumentation of blockchain evidence from the aspects of the

qualification of the depository platform, the reliability of the technical methods of evidence collection and storage, and the integrity of electronic data preservation, and recognized its objective authenticity and safety. Finally, the court recognized the evidence preservation of the defendant's infringement plaintiff's page provided by the plaintiff with the help of the 'IP360' platform (full name IP360 comprehensive data rights protection open platform), and finally integrated the whole case evidence to determine the infringement fact. As the first independent blockchain electronic data evidence directly recognized by the domestic court, in this case, the IP360 platform's evidence storage method is different from the architecture of the preservation network. The IP360 platform combines the blockchain and cloud computing to collect evidence and store evidence on the Truth Preservation Cloud, and seamlessly access the judicial alliance chain. The Truth Preservation Cloud relies on financial-level security protection through police security equipment identification to ensure the reliability of the calculation and storage process. At the same time, the LegalXChain alliance chain (a blockchain system independently developed by Truth Technology) is used to ensure the authenticity and security of evidence. When the parties find the infringement facts, they immediately log on to the platform. After completing the real-name authentication in the cloud system, they will get the automatically assigned cloud host to help them complete the forensics process. The system automatically starts the recording screen. After the user completes the forensics and submits the evidence, the cloud master opportunity automatically closes, the recorded video file is stamped with a timestamp, and the Hash value of the questionnaire file is automatically generated (unique data fingerprint), which is synchronized through the blockchain to the forensic center and notary public. The evidence file will also be stored in the cloud system and generate a digital preservation certificate. As a third-party blockchain certificate storage system, LegalXChain can realize data interaction with any node in the blockchain network, and each node independently verifies the block data, so as to greatly ensure the circulation and security of judicial data, and realize the professional, efficient and convenient benefit of the judiciary.

THE APPLICATION AND PROBLEMS OF BLOCKCHAIN TECHNOLOGY IN NETWORK CULTURE INDUSTRY

The Application of Blockchain Technology in Domestic Network Culture Industry

Blockchain technology can promote data sharing, optimize business processes, reduce operating costs, improve collaborative efficiency, and build a trusted system. Its application has now been extended to digital finance, Internet of Things, intelligent manufacturing, supply chain management, digital asset trading and other fields. As one of the public utilities, blockchain technology has great application potential in cultural industry. At present, in the field of cultural industry, blockchain empowerment is mainly reflected in three aspects: digital copyright protection, reshaping cultural industry model and cultural product innovation. Domestic academic research on this topic is even rarer,

and it is mainly based on industry news in newspapers. For example, newspapers such as “China Securities News”, “Financial Times”, “China Culture News” and “China Publishing Media Business News” have issued a total of more than ten press releases on the topic of ' blockchain + entertainment industry ', briefly introducing the specific practical application trends of cultural finance, copyright protection, financing, IP, resource allocation efficiency and so on. Only a few journal papers involve this topic, and most of them focus on the significance of blockchain technology to copyright protection and transaction. For example, Meng Qixun et al. believe that this technology reconciles the conflict between traditional copyright system and transaction from three aspects: copyright confirmation protection, evidence in the process of rights protection and transaction acceleration, which reflects the impact of technology update on the business model of copyright operation. Combined with the characteristics of this technology, Liu Desheng et al. discussed its application in book copyright. In addition, some scholars have proposed the idea of media blockchain, that is, the application of blockchain technology in intellectual property rights, blockchain ecosystem, smart community, social credit system and other aspects can open up a new path for media convergence.

Application of Blockchain Technology in Foreign Network Culture Industry

With the background of the fourth industrial revolution in the world, various technologies have merged and broken boundaries. Among them, blockchain technology is regarded as a more widely used tool and is an important part and technical basis of this industrial revolution. At present, all countries in the world are accelerating the development of blockchain technology, and promoting the application of technology from finance, Internet of things and other fields to the cultural field. Blockchain + cultural industry shows broad development prospects. Although there is not many existing research in this field abroad, they are very targeted, and mainly focus on the impact of blockchain technology on the art industry and the music industry, which involves the protection and development of copyright, the construction of interest community, the reshaping of value, and the challenges of regulatory rules. For example, Zeilinger studied the value and authenticity of art after the financialization of contemporary art in blockchain technology, and triggered thinking on how emerging digital art practices can realize the subversive and revolutionary potential of blockchain. Nestler et al. believed that the combination of blockchain finance and art not only changed the dynamics of the entire art field, but also rearranged the transaction behavior, which challenged the difference between finance and art. O'Dair et al. made a detailed study on the development and problems of music industry combined with blockchain technology.

Problems in The Application of Blockchain Technology in Network Culture Industry

THE ORIGINALITY OF THE WORK AND THE IDENTITY OF THE AUTHOR ARE DIFFICULT TO IDENTIFY.

First of all, the works mentioned in “Copyright Law of the People's Republic of China require” requires “originality”. However, at present, blockchain technology only uses the HASH value to authenticate the form of works in the application of network culture industry, which is not enough to identify the originality of works. In theory, the network works are technically ' chained ' and compared with the original works on the ' chain ' to verify the generation of the only HASH value, which is objectively different from other works and can be identified as ' new ' works. However, in practice, the subjective originality of network works is difficult to judge. If the works are slightly modified (even the modification of a punctuation mark in the works), it will not be able to correspond to the original HASH value one by one. Specifically, other people make small changes to the work, such as replacing the name of the person in the work, or editing network short video, etc., will cause the modified work that is not original to be recognized as original in the comparison of blockchain technology, and thus be determined as different works. Secondly, whether the uploader of the work is the author of the work cannot be identified. The blockchain technology only compares the work on the “chain” with the work on the “chain”, but it cannot judge whether the uploader is the author of the work, which makes it difficult to guarantee the authenticity of the author of the work before the “chain”. If someone uploads someone else's work to the blockchain platform first, and the real author has no other way to verify his authorship, according to Article 12 of the Copyright Law, unless there is proof to prove this behavior, there will be a situation where the rights and interests of real rights holders cannot be guaranteed.

THERE ARE CONFLICTS BETWEEN THE TECHNICAL CHARACTERISTICS OF BLOCKCHAIN AND THE PROTECTION OF NETWORK CULTURAL PRODUCTS

First of all, blockchain technology has the characteristics of non-tampering and easy traceability by means of distributed architecture and decentralized design. Its unique privacy protection mode provides high-intensity protection for the confirmation and transaction of network digital copyright, and also provides an opportunity for infringers to escape responsibility. Due to the de-trust of blockchain technology, all information after the “chain” on network cultural products will be automatically recorded on the blockchain platform. However, in the privacy protection model based on the blockchain, unauthorized nodes cannot obtain or track the information of relevant users. Even if the infringed party locates the node of the infringer through the distributed ledger, it cannot truly determine the identity of the node. At the same time, this model also separates the correlation between transactions. Based on the blockchain privacy protection model, the data information of the transaction itself is required to be anonymous to unauthorized

nodes. The continuity of transactions on the “chain” and the relationship between users before and after cannot be effectively inferred by unauthorized nodes, which brings difficulties to the court's evidence review evidence chain and illegal income. Secondly, the potential technical risks of blockchain will affect the equality of transactions between nodes. While providing convenience for the dissemination and sharing of online works, it may threaten the order of copyright protection and increase the difficulty of management. Blockchain technology uses P2P network to communicate between nodes. The time sequence of nodes joining the network will affect their permissions. The nodes that join earlier have higher permissions and occupy more resources, which greatly limits the resources and permissions of nodes that join later. In addition, P2P networks lack mechanisms such as identity authentication, data verification, and network security management. Once an attacker spreads illegal content and implements distributed malicious attacks in the network, third-party technologies such as firewalls and intrusion detection will be difficult to target P2P networks. Protection will ultimately be unable to defend against hacker attacks, resulting in network paralysis and destruction of network cultural products.

THERE IS A LACK OF UNIFIED DIGITAL COPYRIGHT CERTIFICATION STANDARDS AND REGULATORY MECHANISMS IN REALITY.

When network infringement occurs, the basic mode of using blockchain technology to protect network cultural products is that the parties immediately collect relevant evidence and save it on the “chain” when they find infringement. The neutral third-party blockchain platform provides technical support for certificate storage and saves relevant data. The blockchain technology is used to track and record the situation after the “chain” on the work, and the HASH value of the packaged data packet is calculated to compare the potential infringing work with the original work. The judge decides of the three natures of the evidence for the digital copyright authentication. In this process, the problem of data authenticity before uploading to the “chain” needs to be solved urgently, which involves many problems such as data source, generation mechanism, storage process and certificate storage platform. The authenticity of the data cannot be directly recognized by the authentication of the third-party blockchain platform. Therefore, the authentication of network cultural products on the blockchain platform can only be used as auxiliary evidence for the court to determine infringement. Although in judicial practice, the authenticity of electronic data after the “chain” is recognized by the court with the technical means of storing electronic data in the blockchain, and there have been many cases of successful rights protection using blockchain technology, there is still a lack of unified digital copyright certification standards. In actual operation, there are problems such as inconsistent technical operation process standards of different third-party certificate storage platforms, information asymmetry, respective certification, and the national copyright registration agency does not fully recognize its copyright certification effectiveness. In terms of supervision, the national supervision mechanism is relatively left behind, and there is no unified supervision mechanism for the third-party depository platform. In addition, the third-party storage platform does not have clear

industry standards and lacks self-regulation, resulting in chaos in the network digital copyright market.

REGULATION IMPROVEMENT SUGGESTIONS

The Improvement of Legislative Regulation

Regarding the management of network cultural products, although there are several basic laws specifically for network security management in China, namely the Network Security Law of the People 's Republic of China, the Decision of the Standing Committee of the National People 's Congress on strengthening the protection of network information, the Copyright Law of the People 's Republic of China and other local regulations, as well as the Interim Provisions on Internet Culture Management promulgated by the Ministry of Culture, Notice on Strengthening the Management of Network Culture Market and other relevant departmental regulations. Although these laws have played a positive role in the development of China 's network culture industry, there are still many drawbacks, which are not fully adapted to the reality of the rapid development of China 's network, and to some extent hinder the further development of the network culture industry. It is urgent to improve the diversified network basic law, consolidate the foundation of the network basic law from the aspects of subject, function and scope, and provide a reasonable legal framework for actively promoting the legislation of the network culture industry.

In response to the reality of the development of the network culture industry, it is necessary to follow the holistic idea of legislation, make up for the blank of legislative, and actively promote the legislation for the network culture industry. For the regulation of blockchain technology, it can be regulated by introducing relevant court rules, third-party platform rules and technical specifications. The existing laws in a large number of different fields involved can be adjusted to form a relatively perfect legal system and create a good legal environment. First of all, the content of the legal framework should include following aspects: the law regulating the market players of the network culture industry, such as the market access of the network culture industry; The laws and regulations on regulating market transactions and maintaining cultural market order, such as the laws regulating the business activities of units such as Internet cafes that provide and operate network cultural products, which help cultural production and business activities into the legal development track; The market management law determining the power and responsibility of the government to exercise management functions. Secondly, the network culture industry involves a large number of different legal fields such as trademark law, copyright law, anti-unfair competition law, company law, tax law, consumer protection law, etc., and these laws are rarely or have not taken into account the various problems in the network environment during the formulation period and are inadequate in application. Therefore, the practical approach is to sort out the relevant laws, learn from foreign legislative experience, and adopt “legislative and reform” measures to adjust relevant laws.

The Improvement of Supervision Regulation

In terms of supervision, compared with the relatively perfect network management mechanism in developed countries, the various management methods of China's network culture industry have not been institutionalized and standardized, and the system is seriously lacking. In the specific law enforcement, some of the usual windy, sports-style temporary assaults have become the norm. The lag of management and the imperfection of management system have become the constraints of the development of network culture industry. At present, the Chinese government is indeed using administrative means to supervise the network culture industry, but its management system lags behind, and the government has obvious "multiple management" problems in the process of standardizing the network culture industry. This is because China's Internet content management belongs to the State Council Information Office, network security belongs to the Ministry of Public Security, Internet cafe management belongs to the Ministry of Culture, communication and hardware equipment belongs to the Ministry of Information Industry, Internet publishing belongs to the General Administration of Publishing. Therefore, the administrative agencies of the Chinese government responsible for the management of the network culture industry involve cultural departments, public security departments, industrial and commercial departments, and fire departments. This kind of multi-management system makes deregulation and strengthening control exist at the same time, resulting in both "absence" and "dislocation" in management, and it is very easy to prevaricate each other when problems arise, forming loopholes in management. That is to say, the Chinese government has not sorted out the existing industry management resources related to the network culture industry and lacks a centralized and unified network culture industry management structure to guide the healthy and orderly development of the industry. The management structure can easily lead to the weakening of law enforcement.

First of all, administrative departments at all levels should establish and improve the network copyright work leadership responsibility system. It is suggested that the main person in charge of the administrative departments at all levels should serve as the group leader, establish a leading group for network copyright management work, give full play to the overall role of leaders at all levels in network copyright management work, and strengthen the overall planning and overall layout of network copyright protection work. Copyright administrative departments should strengthen the guidance and coordination of local copyright administrative departments, give practical law enforcement authority to network copyright law enforcement departments, enhance the diversity and effectiveness of law enforcement means, and ensure the effective implementation of network copyright protection system. In addition, the coordination mechanism of network copyright enforcement should be improved. Copyright administrative law enforcement departments should take the initiative to play a leading and coordinating role, strengthen effective collaboration with other relevant administrative departments, so that the functions of network copyright law enforcement can be effectively played. Copyright administrative law enforcement departments should link up with criminal justice, actively participate in the construction and use of the national information

sharing platform for the connection between administrative law enforcement and criminal justice in the fight against infringement and counterfeiting and promote the further disclosure of information on copyright law enforcement cases. Law enforcement supervision and social rights supervision departments at all levels should play a synergistic role in establishing a local copyright law enforcement coordination mechanism and a cooperation mechanism between copyright law enforcement departments and enterprises and associations. While increasing administrative penalties, they should increase the criminal crackdown on cyber infringement and piracy, give full play to the powerful deterrent effect of criminal crackdown, and effectively improve the level of administrative law enforcement and criminal justice. Finally, establish and improve the long-term mechanism. Copyright administrative law enforcement departments should cooperate with other departments to improve the rapid response mechanism to combat Internet piracy. Finally, establish and improve the long-term management mechanism. Copyright administrative law enforcement departments should cooperate with other departments to improve the rapid response mechanism to combat network infringement and piracy and improve the working mechanism of “notification-removal infringement” and assisting in the storage of evidence with telecom enterprises and Internet information service enterprises. Copyright administrative law enforcement departments should improve the copyright rapid rights protection and rights protection assistance mechanism, shorten the processing cycle of infringement, explore the administrative mediation mechanism, use non-litigation solutions to resolve copyright disputes actively and effectively, and regularly warn and expose dishonest units and individuals in the official media and other public media of the State Copyright Administration.

CONCLUSION

In the new era of digital civilization, blockchain, as an important infrastructure of digital China, its technical advantages play a positive role in ensuring the safe dissemination of network cultural products. In view of the current dilemma of protection of network cultural products dissemination, in order to realize the new situation of network cultural products dissemination protection, this paper constructs an excellent protection mode and technical approach of blockchain network cultural products based on the characteristics of blockchain technology, and deeply analyzes the application and problems of blockchain technology in network cultural industry, putting forward the establishment of scientific supervision system and regulation system. Admittedly, in this paper, we put forward a preliminary idea, and there are many problems still need more specific and in-depth study. We sincerely hope that readers will not hesitate to criticize and correct our research.

ACKNOWLEDGEMENTS

Funded by the National College Student Innovation and Entrepreneurship Training Program (Project No.: 202213021045; 202213021058X).

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