Research on News Copyright Management and Protection Mechanism Based on Blockchain Technology

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Abstract. In the current digital background, infringement of news works has become a common phenomenon, and the traditional copyright protection measures have failed to meet the needs of the times. This paper will analyze the current research on blockchain in copyright protection at home and abroad, analyze the problems of news copyright protection in China, and explore a news copyright protection initiative suitable for China's national conditions.

Keywords: news copyright; copyright protection; blockchain.

1. Introduction

The development of mobile Internet technology has given rise to the era of online media, and the works of the news media have also completed the transformation from traditional paper printing to digital media works nowadays. In today's age of media in everything, infringement of journalistic works is a recurring phenomenon, such as the shuffling of news and the arbitrary cutting and reprinting of articles. The development of technology has boosted the development of a wide range of news media works, but it has also provided infringers with convenient and low-cost tools for infringement. The lack of evidence and the high cost of defending the rights of the news media after the infringement has occurred, coupled with the current weak awareness of news copyright protection in the media, makes the current situation of news copyright protection in China extremely unsatisfactory. By combing through the current situation of blockchain copyright protection at home and abroad, the author analyzes the current dilemma of news copyright in China, aiming to provide a new idea and a new path for news copyright management in China.

2. Current status of research on press copyright protection

2.1 Current status of domestic research

In the study of news copyright. With the advancement of communication technology, new online media and new types of media works are emerging, blurring the boundaries of different news media works, and cases of infringement of news works are frequent, while the current research on news copyright in China mainly starts from the legal, technical and awareness levels. At the legal level, the main focus is on the "safe harbour principle", while at the technical level, it is pointed out that at present, apart from deep linking, news infringement in China is mainly carried out through secondary processing of news products by various media technologies. In terms of awareness, the legal awareness of most media and journalists is limited to the concern that the news they compile does not infringe on the rights of others, and the current dichotomy between the protection of copyright in journalistic works and the function of the media as the eyes and ears of the media has not been improved in China.

In terms of blockchain technology application in news copyright protection research. The academic community's concern for blockchain application in digital copyright began in 2015, and there are still few studies on this part, with only 20 papers searched by keywords on the Internet, and most of the scholars' studies are only limited to parts and have not been developed in detail. In the background of the digital media era, the proof and maintenance of news copyright is still the biggest pain point. Most scholars recognize that the decentralization and traceability of blockchain have great potential for the protection of digital news copyright, and not only fully recognize its role in copyright,

but also improve the enthusiasm of original content and the quality of media works to a certain extent. However, at the same time, the protection mechanism of blockchain also has limitations, i.e. it is impossible to judge the "originality" of the results, and its information sharing function and copyright ownership are controversial, coupled with the fact that the current technology is not mature and the operation mode is not perfect, blockchain applications still do not occupy the mainstream in terms of copyright protection.

2.2 Current status of foreign research

Alexander Savelyev analyses the opportunities and challenges that blockchain technology brings to the field of copyright protection. He pointed out that blockchain technology can make copyright information transparent, identify works, automate transactions and simplify registration, but problems such as the small storage capacity of blockchain, the contradiction between technology and copyright changes, and legal conflicts need to be solved. In addition, Ruzhi Xu et al. designed a digital copyright management mechanism for media based on blockchain technology, which contains four modules: production management, copyright information management, transaction management, and user behaviour management.

As blockchain music management platforms such as Ujo and OMI have emerged abroad, foreign researchers have focused on the theme of "blockchain + music industry". "O' Dair et al. examine the use of blockchain technology in the field of digital music rights, arguing that this direct-to-fan model has the potential to revolutionise the music industry, while noting that disintermediation, transparency, network The nexus of control is a major theme in the blockchain music industry, but also a barrier to its application.

It is worth mentioning that, compared to domestic scholars, foreign scholars are more concerned about the relationship between blockchain technology and the existing legal system and the possible potential contradictions. Russian scholars such as Ruzakova demonstrate the possibility of using blockchain technology to systematise intellectual property rights by analysing the relevant laws in Russia and other countries, meeting the technical, security and decentralisation requirements of copyright management, and Gurkaynak, G et al. discuss the potential impact of blockchain on intellectual property registration, management and enforcement. They argue that the first action that regulators could take is to grant blockchain legal status and define the criteria that blockchain must meet in order to obtain such legal status. At the same time, the distinction between private ordering regimes based on blockchain smart contracts and the basic components of copyright law has also raised concerns among scholars, with scholars such as Balazs Bodo arguing that the biggest challenge in using blockchain technology for copyright protection is how to reconcile the highly decentralised copyright law with the impersonal, borderless, standardised and automated regulatory solutions offered by blockchain technology. Finck, Michèle et al. present the DRM digital rights management system and compare blockchain systems with DRM systems to explore the interplay between private ordering and public policy in a blockchain environment, dissecting the impact of smart contracts primarily from a public interest perspective.

3. The dilemma of press copyright protection

The development of information technology has brought great changes to the media industry, mainly in the communication channels and communication subjects. In the paper media era, the subject of news relies on paper media, news works are mainly mostly text and pictures, news from production to printing need to go through a certain cycle, the cost of infringement is relatively high. In the new media era, the carrier of news works is not only the paper media, but also microblogging, WeChat public number, Jitterbug and other platforms cost important communication channels, and the form of works can also meet the individual needs of users, such as WeChat push, H5 short video, live broadcast, etc. Meanwhile, with the convenient communication channels news production cycle is greatly shortened, and the number of news is exponential explosion. On the other hand, the

communication landscape has also changed with the development of technology. The dominant position of mainstream media has been weakened, and users of social media have become both disseminators and receivers, with each individual being both a user of news works and the main force of news production. While the richness of communication channels, the wide range of communication, and the diversity of communication subjects have contributed to the development of the news industry, the complex and comprehensive environment has also given rise to more diverse forms of infringement, and news copyright disputes can be described as volatile, and news copyright protection is facing a severe test.

3.1 Unclear copyright ownership

The most important thing in a copyright dispute is to clarify the ownership of the copyright in a work. According to Article 3.1 and Article 5.2 of the Bernier Convention, authors are not required to comply with any formalities to enjoy and exercise their rights, regardless of whether the work has been published or not, i.e. registration of copyright is not a necessary means of obtaining copyright, and "creation is enjoyment". Secondly, the "automatic acquisition of copyright" does not fully guarantee the authenticity of the subject of the right, which facilitates the infringers, for example, the infringers can obtain copyright by preemptively publishing the unpublished works of others, and how to ensure the authenticity of the right holder has become the focus of disputes and difficulties in the trial of copyright disputes and litigation.

The traditional copyright hierarchy, because of centralised management, non-transparent information and non-traceability, has resulted in a copyright application cycle of up to 30 days for works and high costs, for example, $300 per 100 words for written works. The time-consuming and costly copyright hierarchy is clearly not adapted to the short production cycle, high volume and time-sensitive requirements of journalistic works in the online environment, resulting in journalistic works neglecting the link of copyright registration. As a result, in disputes over journalistic copyright works, the defendant often uses "unclear copyright ownership" as a defence because it cannot produce evidence such as a copyright registration certificate.

The photographer of the picture in question is not a contracted photographer of the company, so it is impossible to prove that the picture in question is an official work. From this case, it can be seen that the procedure of confirming the right to attribute works is complicated and cumbersome, and may become an excuse for infringers to defend themselves.

3.2 Concealed forms of infringement

China's news copyright disputes are divided into three periods: the period of mild contradictions, the period of sharp contradictions and the period of complex contradictions. 2011 saw the "Chinese Newspaper" software on the iPad being reported to the court by Xinjing for using unauthorised pages and content of Xinjing Newspaper, and since then China's copyright disputes have entered a period of complex contradictions. Unlike the early days when traditional media sued online media, the development of digital technology has given rise to a more diverse range of infringing subjects and infringers. For example, the current short-form video infringement cases are particularly serious in the case of second-form short-form video infringement, which is the hardest hit area of infringement. The latter three types are the main force of infringement. Infringers use secondary creations, transpositions and title changes to modify infringing articles to make them appear different from the original, but in fact to evade the original creator's recourse. Take the 2021 Tencent Video hit web series "The Storm of Blackness" for example, which was viewed 5.61 billion times by Tencent Video, while in the ShakeYin platform, which is filled with all kinds of film and television commentary accounts, searching for "The Storm of Blackness" and taking the most talked about topic as an example, the content that pops up are all second creation videos that have been heavily cut by platform users, which have been watched as many as 6 billion times, with a comprehensive hotness that far exceeds that of the copyright platform. This triggered Tencent Pictures and Tencent Technology to sue the ShakeYin platform for infringement of copyright in the Beijing Intellectual Property Court,

claiming 100 million from it and asking the ShakeYin platform to stop spreading relevant infringing videos.

In addition, infringement methods are becoming more and more covert, with infringers using technical means such as deep linking and transcoding to directly steal news at almost zero cost. For example, some news aggregation platforms are created by directly storing other media's content in their own servers for readers to click and read. After gaining traffic, the platforms will be favoured by more advertisers, directly harming the media's economic revenue and undermining the market order. With the increasing complexity of infringing subjects and infringement methods, the media has to find infringing articles in the fast flowing vast stream of information like a big wave of sand, and the environment for news copyright protection is very severe.

3.3 Inadequate access to rights

In 2006, the State Council issued the Regulations on the Protection of the Right to Information Network Dissemination, which refined the "safe harbour principle" by requiring network service providers to immediately remove allegedly infringing works, performances, audio and video recordings and disconnect relevant links upon receipt of a notice from the right holder. The "notice to remove" approach allows for more efficient coordination of the interests of both parties. However, the "safe harbour principle" can only be established if the ISP can "prove that it did not knowingly or ought to have known", rather than intentionally infringe, before it can be exempted from liability. In reality, illegal reprinters are recklessly reproducing articles in an attempt to use the "safe harbour principle" as a refuge. When the author does not discover the infringement, the republisher is indifferent and continues to obtain benefits through illegal infringement; when the right holder discovers the infringement, the republisher uses the "safe harbour principle" to defend itself by claiming that it is not in a situation where it "knows or should know" that the technology automatically catches the information. The "safe harbour principle" is used as a defence.

The Copyright Law was amended in 2013 to restrict the "fair use principle": if a published work can be used without the permission of the copyright owner, it shall not affect the normal use of the work, nor shall it reasonably prejudice the legitimate interests of the copyright owner. However, there are still some infringers who distort the original intent of the provision, intending to filter out the prerequisites and connotations of "fair use" and wantonly expand the scope of application of "fair use" to obtain "substantial benefit ", which has a negative impact on the market for the original work.

All in all, the time, effort and monetary costs incurred by the news media in the process of defending their rights are not proportional to the actual benefits gained in the end. The low enthusiasm of news media outlets in defending their copyright ownership is the reason for the repeated illegal infringements, which is not conducive to the maintenance of the entire news copyright environment.

4. Building news copyright protection initiatives

Article 5 of the Copyright Act provides that current affairs news is not protected by copyright law based on the "sole expression" standard in copyright theory. In addition, the long application period and high cost of traditional copyright registration make the copyright ownership of most works unclear, which is not conducive to the subsequent maintenance of rights. Blockchain has a unique principle advantage in copyright protection, so how to use blockchain technology to simplify the steps of confirming the rights of news works and ensure the legality of the confirmation is the core issue to be considered in building a blockchain news copyright protection platform. By combing through existing literature and case studies, the author has summarised the following blockchain news copyright protection initiatives.

4.1 Technical confirmation and institutional endorsement

Taking a bookkeeping perspective, Melanie Swan argues that the blockchain is essentially an open ledger that holds the potential to become a global, decentralised record for the registration,

cataloguing and transfer of all assets. In this public ledger, blockchain technology combines blocks in a chronological chain in a tamper-evident, decentralised data structure, i.e. when a node in the network generates information, it time stamps the information to form a new block. Chains are formed when blocks generated by nodes throughout the network are arranged in chronological order. With the support of this technology, each piece of information is uniquely tagged with a standard identity and has traceability. The flow of works can all be clearly mapped with the support of this technology, making it easy for the media and copyright authorities to monitor, and also greatly simplifying the registration process for copyright, which is convenient, time-saving and inexpensive. However, as current affairs news is not protected by copyright, news media can screen news works with originality, such as H5, video, feature articles, etc.

At the same time, if you want to promote and apply the technology, you still need government agencies to endorse it, so you can cooperate with authoritative agencies such as the State Administration of Press, Publication, Radio and Television and the China Copyright Centre to enhance the authority of the blockchain and legalise the blockchain authorisation operation process.

4.2 Evidence to defend rights, intelligent detection

The development of digital technology has greatly lowered the threshold for the production of Internet works, and countless online works have emerged. At the same time, because of the anonymity of cyberspace, infringing works are difficult to be discovered in a timely manner, and once the links to infringing works are removed or changed, it is difficult for the author to find the source files, which easily leads to the dilemma of difficulty in proving subsequent rights. In the face of the prevalence of infringement, blockchain technology can legally fix electronic evidence in a more efficient manner by virtue of its own characteristics such as immutability, high credibility and traceability, providing strong evidence to support the court's decision. At the same time, blockchain, with its ability to arrange blocks of data in chronological order, is capable of detecting infringement around the clock, quickly identifying infringing works through timestamps and providing alerts. However, because the identification function of the current blockchain detection system is relatively immature, it is not accurate enough for the identification of "news laundering" works, so artificial intelligence, big data technology and blockchain technology can be combined to significantly improve the accuracy and It can significantly improve the accuracy and work efficiency of blockchain technology in detecting infringement, and better protect the rights of journalistic works.

4.3 Building a "polycentric" news copyright alliance chain

Generally speaking, blockchain is divided into public, federated and private chains, with decreasing degrees of centralisation. Blockchain is attracting attention because of its decentralised nature. Is it appropriate to apply blockchain technology to the journalism industry, so that journalism is no longer regulated by any third party or government, but is completely free and open to the public? Certainly not.

First of all, the news media, as the eyes and ears of the Party and the people, must always firmly defend the interests of the Party and the State. If a public news chain open to the whole society is established and left unregulated, there is no doubt that this platform may become a fertile ground for false news, which is not only detrimental to the media's public opinion guidance, but may even be used by undesirable elements to endanger social security and damage national interests. Moreover, a blockchain program that is not regulated may face risks such as data leakage, digital currency fraud, and the impact of the existing legal system, causing huge losses to users and not conducive to the stable development of society. Therefore, the establishment of an unregulated blockchain news copyright management platform is a pipe dream that is not in line with the development of our news industry. Instead, a new organisational and governance model for understanding blockchain logic and a blockchain framework that meets our actual national conditions needs to be explored.

Therefore building a news copyright alliance chain under the leadership of the Propaganda Department of the Communist Party of China, with the participation of the State Administration of

Press, Publication, Radio, Film and Television, the China Copyright Protection Centre, the Internet Court, arbitration bodies, notaries and other authoritative bodies, and with news media and news content aggregation platforms as the mainstay, is more in line with the path of news copyright protection in China. In fact, China's mainstream media are already actively exploring copyright protection and management through the establishment of alliance chains. For example, People's Online has used blockchain technology to build the "People's Copyright" platform, which aims to build a one-stop copyright protection management platform by constructing a news copyright alliance chain and provide users with a new copyright protection solution.

5. Conclusion

Technology is a double-edged sword. The development of digital technology has, on the one hand, promoted the diversity of journalistic works, but it has also provided new infringement tools for unscrupulous elements, and the traditional way of copyright registration is no longer applicable to the development and needs of the media nowadays. Blockchain technology, with its unique advantages in the field of news copyright confirmation and maintenance, is well suited to fill the gap in traditional copyright protection and has huge room for development. However, opportunities and challenges always go hand in hand. The development of blockchain technology in China is still in its infancy, and there are still many shortcomings, so it is necessary to look at the changes brought by blockchain technology with dialectical thinking.

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