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Study on the Application of Blockchain Depository in Chinese Mainland's Criminal Online Litigation

Xuxiao Wang[1,*]

[1]*People's Public Security University of China, Beijing, China*
[*]*Corresponding author*

Abstract: *This paper mainly emphasizes the corresponding analysis of the application of blockchain deposit in criminal online litigation in Chinese mainland. Firstly, it elaborates the characteristics of blockchain technology, such as uncoded, distributed ledger that is decentralized, asymmetric encryption and authorization technology, data uploading immediacy, etc., and then it analyzes the judicial practice of blockchain deposit technology in online litigation. It mainly includes improving the rules for reviewing the authenticity of blockchain evidence, focusing on the existing system to support the operation of blockchain deposit technology, etc., to study whether blockchain deposits can be better applied in criminal online litigation.*

Keywords: *Blockchain Depository, Criminal, Online Litigation*

1. Introduction

By utilizing blockchain depository technology, it is easy to solve the problems that exist in the examination and determination of the authenticity of electronic evidence. However, the technology cannot improve its authenticity, to provide an important guarantee, and whether it is technically authentic, or the authenticity of the case sought by the litigation, the two are not precisely corresponding relationship. Essentially, the evidence law of electronic data blockchain deposit belongs to a kind of electronic data technical authenticity method, blockchain deposit technology should be returned to the level of instrumental value, to standardize the deposit platform, improve the technical level of the deposit. At the same time, at the level of authenticity, the applicable standards of various forms of blockchain deposit should also be determined, as well as the differences that exist, so that blockchain technology can be applied in the future in the deposit of procedural matters. Therefore, the research on the application of blockchain deposit in Chinese mainland's criminal online litigation is an academic theme that scholars of procedural law need to study further.

2. Characteristics of blockchain depository technology

The underlying technology of Bitcoin, which is the source of the blockchain, has permeated is reasonably used in various industries, especially in computing, commercial finance, and telecommunications operations. Among other things, the essence of blockchain is a chain of data connected by a series of cryptographically verified and transmitted data blocks. Currently, blockchain depository technology plays a role in electronic data deposit, and blockchain electronic data storage is now in the judicial field with the application of Bitcoin basic technology. In the context of the rapid development of the Internet, blockchain depository technology has become more mature. It has been used in various industries and has gradually adapted to the characteristics of this technology in all aspects of work.

With the booming development of information technology, electronic data has become one of the primary forms of evidence in Internet-related litigation. In the first few years after electronic data was written into the three primary litigation laws, based on its vulnerability led to the authenticity of the judicial practice being easily questioned, the court's attitude towards electronic data was very conservative, the use of electronic data was minimal. Ordinary special electronic data depository has many shortcomings in solving this problem and is highly dependent on notarization. Blockchain depository, as an emerging technology in the information age, is highly suitable for the application of electronic data depository due to its decentralization, immutability, and traceability, which provides new opportunities for the solution of the authenticity problem of electronic data. In criminal online litigation,

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blockchain repositories have their excellent characteristics and can be an integral part of the litigation process in the rapid development of electronic data today. The author has studied their advantages:

1) Uncoded. This is still an advantage of blockchain depository technology. Because there is a particular connection between each block, the validity of records can only be recognized after reaching the corresponding consensus among all the bookkeeping nodes, which is also an important initiative to avoid the occurrence of the phenomenon of codification [1]. Therefore, in criminal online litigation, online trials, and the process of cross-examination, the evidence can be electronically fixed in the blockchain and will not be tampered with before and after the trial, which improves the authenticity of the proof.

2) Distributed ledger i.e. decentralization.

Decentralization is permission and authority, which consists of two parts: one is decentralized, and the other is not entirely decentralized. Currently, in the aspect of storing electronic data, it is mainly held on the computers, but blockchain depository is not all on the computer, to be better accomplished by each node subject, and regardless of that node subject to achieve the record of the account. With the help of this feature, in order to supervise the legality of transactions, some node entities can participate, so that each node subject can focus on the evidence storage and display [2]. Then, asymmetric encryption and authorization techniques. Transactions on blockchain are usually made public, and the account identity information encryption is strong, but for better access, the data owner should be authorized. No matter whether it is a permit, or permission, it is difficult for other users to operate this alliance chain without it, the insiders want to enter the need to go through the legitimacy of the validation, which not only ensures the security of the data, but also protects the privacy of the person concerned. A lot of procedural work in online litigation was carried out online, so there is a possibility of data exposure or personal information leakage. Therefore, using blockchain technology for encryption is essential for online litigation, especially criminal cases.

3) Instantaneous data upload. Through blockchain technology, the data of each node is synchronized to a certain extent until all nodes are reached. All nodes can publish data, but permissions need to be set and relevant data information can be read. Due to this feature, in addition to updating data information, real-time transmission can also be carried out to promote program operation, improve operational efficiency, and create a collaborative case processing platform for authorities [3].

The most prominent feature of blockchain technology is decentralization, based on consensus mechanisms, where each node can vote, and most importantly, it can be automated and stored perfectly in this block storage database. At the same time, regardless of the blockchain of each node's task or the functionality of each node, it is the same. If a node has an error, it basically will not affect the entire alliance chain system, to a certain extent, which to some extent promotes the improvement of electronic data storage rate.

3. Blockchain Depository under the Return to Evidence Authenticity Requirements in Criminal Online Litigation

3.1. Requirements for authenticity of electronic data in online proceedings

The authenticity of evidence in criminal online litigation includes two types: the authenticity of the carrier and the authenticity of the factual evidence. Whether it is the traditional evidence carrier form of existence, or evidence information form of existence, both need to be unified and cannot be separated. But and carrier, electronic evidence information existence form can and its separation together, for example, in the computer will be able to real-time storage and preservation of electronic data, and the computer can realize detachment, in the storage medium to realize the phase storage [4]. In this context, it is necessary to combine the current situation with the characteristics of electronic evidence to further improve the authenticity of electronic evidence carriers and other electronic evidence features. In addition, it is often necessary to use devices to further identify electronic evidence, and whether the authenticity of electronic evidence carriers or electronic evidence authenticity in criminal online litigation is the main content. The so-called electronic evidence carrier authenticity is the device [5] for electronic evidence storage. At the same time, whether it is the source of electronic data and the integrity of the criminal online litigation during the flow process have become a point of concern for the authenticity of electronic data. Electronic evidence content authenticity is electronic evidence a true reflection of the case situation. In the current judicial practice, blockchain criminal litigation electronic data storage can achieve a key digital encryption technology and distributed consensus algorithm. The main reason is that the computer

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can be operated without the need to invest in staffing to identify some of the evidence on all the nodes, the evidence in the chain, will not be changed or tampered with due to human factors or external influences, the authenticity of the guarantee has been dramatically improved.

The demand for online litigation is that three parties can ensure gender evidence, and the advantages of the blockchain depository used in the litigation process can be excellent to avoid a series of problems due to online operations.

3.2. Interpreting the Authenticity Guarantee of District Express Chain Certificates from a Technical Perspective in Online Litigation

The so-called depository technology uses encryption algorithms and technical support to store data on the blockchain platform. At present, there is no unified regulation on deposit technology, but the application of blockchain technology in online criminal litigation has achieved the formulation of regulations. Currently, blockchain standardization from the perspective of criminal online litigation, some industries and research institutes have also made corresponding provisions [6].

Technology is an important means, whether it is the requirements of the technical specifications or industry requirements, only to ensure that the deposit technology and the deposit platform can give complete satisfaction, for the deposit of evidence content, to explore and analyze whether it is more natural. If the deposit technology level is not high or there are errors, the stored evidence will be difficult to fully satisfy the form of the relevant elements, resulting in the content not having the actyal value.

4. Authenticity of Blockchain Evidence from Different Generation Sources in Criminal Online Litigation

Blockchain depository technology in Chinese mainland's criminal online litigation in the application of authenticity is the most important in front of a complex problem, and the authenticity of the evidence connotation is richer. Blockchain depository technology ensures a variety of generating sources of blockchain evidence authenticity in this regard, with particular difference. Firstly, it is necessary to carefully summarize the specific forms of blockchain evidence generation, and then discuss various types of blockchain evidence in order to better identify the authenticity of blockchain evidence. The Online Litigation Rules clearly stipulate that participants can further submit evidence by storing data through blockchain technology, but the submitted evidence can be divided into two types: one is generated online and the other is generated offline. Both of these may undergo certain changes in the course of specific practice.

4.1. Authenticity of blockchain evidence generated online in online litigation

The main form of electronic data is usually generated online and stored in real-time. From the perspective of the blockchain depository, it can be further subdivided into two types of online generated evidence: one is evidence of chain generation, and the other is chain generated evidence. As long as the use of the blockchain depository platform, to a certain extent, fully reflects the life cycle of this type of evidence. The so-called off chain generation of evidence is mainly generated under the blockchain, whether in the transmission of electronic evidence or in the storage of this aspect. The blockchain mainly relies on the entire process of the lifecycle of such evidence, which is not even entirely in blocks, but can be compiled and will retain traces. To better determine whether evidence has been compiled, it can be based on the related traces.

4.1.1. Chain-generated evidence

The evidence generated on the chain can be better recorded on the blockchain to prove important data information. In detail, whether it is evidence generated on the blockchain or implementing storage and real-time transmission, it must be on the blockchain to achieve its implementation. For blockchain deposit technology, the blockchain deposit platform will be the main support, which is also the most important carrier of blockchain evidence. Its actual operation has improved the authenticity of electronic evidence carriers to a certain extent.. Based on this, blockchain deposition technology has brought difficulties to the encoding of electronic data. That is to say, by applying blockchain deposit technology, we ensure that the evidence generated by the chain is problem free and more authentic. Therefore, the Rules of Online Proceedings also make corresponding provisions.

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4.1.2. Evidence generated down the chain

Pre-chaining and post-chaining are the stages through which evidence must be generated on the chain. In detail, in the pre-chaining stage, ordinary electronic data has some characteristics that are not only easy to modify but also difficult to fix. The most crucial point is that it is impossible to ensure that the electronic data is more authentic. For the authenticity of electronic data, in the pre-chaining stage, blockchain storage technology is rarely used to protect the data generated on the chain, and there is also a risk that it may be edited and cannot improve the authenticity of electronic data content.

Therefore, in the pre-deposit stage of the blockchain, other evidence generated online and stored in the blockchain is difficult to obtain important guarantees provided by blockchain technology [7]. The requirements of the authenticity of the evidence, in the pre-deposit stage of the blockchain, if the evidence has been unable to comply with, then in the post-deposit stage of the blockchain, even if it ensures that it can better utilize the blockchain depositing technology of its authenticity is not vital, so the blockchain depositing technology is limited in improving such evidence and providing important protection in this regard.

4.2. Discerning the Authenticity of Blockchain Evidence Generated Offline in Online Litigation

Offline-generated evidence is the use of traditional physical evidence converted into electronic data using data-based methods, on the blockchain, real-time uploading of the corresponding data, prompting the ability to generate the blockchain. This type of evidence and the initial physical evidence carrier is particularly relevant, and through the blockchain depository, it is difficult to provide essential guarantees for its authenticity. In ensuring the authenticity of evidence, blockchain deposit technology plays a minor role, and the technology cannot be used as a primary reliance. Further examination and identification are needed based on other evidence in this case.

5. Judicial Practice of Blockchain Deposit Technology in Criminal Online Litigation

5.1. Improving the rules for reviewing the authenticity of blockchain evidence in online litigation

To better examine whether blockchain evidence in criminal online litigation is authentic, there is a need to increase the scrutiny of the sources of blockchain evidence accordingly. It is also necessary to review the commercial blockchain evidence in criminal online litigation, especially the neutrality of the operating body of the blockchain depository platform. If it can further prove the previous basic facts, it can be determined that the blockchain technology has a natural carrier, the risk of the blockchain depository platform. If the opposing partner has evidence to prove this point, the authenticity of the airline is suspected. In this regard, assisting judges in judging the situation can be used as an evaluation method.

Refine the principle of reviewing the integrity of electronic data in online litigation. In this regard, the authenticity of our electronic data review integrity rules is essential as they can provide some assurance. However, our legislation does not fully implement the rules, and there may even be duplication in the law. In the law, for the phenomenon of overlap, in essence, if the two law conditions expressed in the same content, in the part of the review rules, will be one of the single out of the authenticity of the electronic data reasonably clear. In addition, for electronic data review, relevant laws and regulations should also increase the refinement of efforts and constantly refine the review of electronic data integrity rules. For example, to clarify the completeness of the review criteria, it is necessary to further expand on the basis of rule-based original evidence, so as to examine the authenticity of electronic data.

In online litigation, blockchain storage is an important guarantee for preserving evidence. After comprehensive review, if there is no evidence to the contrary, it can be overturned accordingly. Other evidence generated online to the proof of a partner to submit, on this basis, should focus on the submission of the source data, focusing on the comparison of the data itself and the associated traces of data if there is no codification of the comparison results of the data information, on the contrary, there is no evidence indicating the existence of evidence, which can be considered true [8]. Codification offline generation of evidence in this regard, will not leave any traces, after its proof, the need for continuous verification. It is difficult to ensure the authenticity of blockchain evidence in online criminal proceedings solely by applying blockchain deposit technology. In the process of chain argumentation, judges need to base themselves on some other evidence in the case to determine the evidence corroboration problem. For this reason, they need to be admissible to make a decision.

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5.2. Focusing on Existing Systems to Support the Operation of Blockchain Depository Technology in Online Litigation

5.2.1. Focus on existing systems to support the operation of blockchain depository technology

Online litigation needs to focus on the existing system to support the blockchain deposit technology. In the process of specific practice, the application of blockchain deposit technology, to a certain extent, can better interact with the existing system to form evidence in this regard, for example, combined with notarization, can improve its certification capabilities. In the process of evidence proof, it can be combined with expert assisted systems to enhance its explanatory power.

5.2.2. Blockchain depositories and expert support persons

In the technical aspect, the high threshold of the blockchain depository technology, the judges need to solve the current technical problems encountered, this time in the professional knowledge, but also can not be separated from the expertise to provide strong support. According to the relevant provisions of blockchain technology in the application of electronic data storage technology, can apply for specialized personnel to provide appropriate advice. From the perspective of the people's court, it can contact the appraisal personnel and take them as the central commission to appraise whether the application of blockchain technology in the storage of electronic data is more natural. And it also stipulates that the expert assistant system can provide important assistance in future blockchain deposits and review processes in online litigation.

5.2.3. The Institutional Impact of Blockchain Depositary Evidence on Trial Examination

In terms of defending the rights of the accused, defense lawyers have certain difficulties, especially in the application of blockchain technology in the judicial sphere, which gives the public authorities a solid ability to collect. In this aspect of challenging the process, it is often difficult to play the role played by traditional professional lawyers. However, under blockchain depositions, it may weaken the court's right to cross-examine. At the same time, the criminal defense system and defense rights protection system are currently facing tests when constructing criminal proceedings. Therefore, for the examination and judgment of electronic data, there are different ways to better respond to the needs of exploration and previous court questioning methods.

5.3. Developing new ideas for the use of technology in online litigation

To better solve the current problems faced by blockchain deposit technology, in the process of specific improvement, the application of technology should be explored in online litigation. Advanced technology should be introduced to promote the operation of the deposit platform, enhance the level of its operation, and avoid increasing the operating costs, and a reasonable allocation of resources should be realized, which also penetrates the blockchain deposit technology in the field of justice and reasonably utilizes it to enhance the value of utilization. Based on this, while investing in the same resources, the level of using the technology is improved, especially the application of blockchain depository technology in online litigation matters. In the context of the reform of the judicial accountability system, judges are required to file and keep traces of the various processes of handling cases for future reference, which, in addition to protecting the professional rights and interests of judges, helps to standardize the entire process of handling criminal cases further. In the blockchain, if the whole process of the case can be traced, then the specific records can be fixed, and if there is a dispute, it can further prove the matter of procedural justice.

6. Conclusion

In a word, blockchain depository technology is worthy of application, but in this level of technology, this technology is complex to break through, and it is difficult to improve the chain evidence more real. Therefore, we should seriously face the current emerging things, but also to find the existing problems. At present, there are no specific solutions to various issues with blockchain evidence technology, especially in terms of security and efficiency. Based on this, it is necessary to improve the level of technology, the existing supporting measures and systems for the corresponding improvement to provide more compatible online litigation and procedures with the judicial system, to improve the value of the application of blockchain depository technology.

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