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# Blockchain Empowers Risk Mitigation and Management in Digital Trade Processes

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**Abstract:**

As information technology gradually empowers traditional trade processes, the development of digital trade in new forms, especially the hot topic of innovative combination of "blockchain + digital finance", requires attention. This paper aims to study how information technology can assist in legalizing digital trade processes, enabling trade entities to avoid trade risks, reduce transaction costs, and enhance their willingness to trade; how blockchain technology can be integrated into legal frameworks, and how it can be incorporated into policies. Applying blockchain technology to asset evaluation, credit evaluation, and information monitoring can greatly benefit the efficiency and security of digital trade processes.

**Keywords:** blockchain, digital trade, trade risk assessment, financial monitoring.

## 1. Digital trade assessment process risk and technical reference

### 1.1 . *Risk assessment status of domestic and foreign legal systems*

With the advancement of Internet technology, digital trade, as opposed to traditional trade, mainly encompasses the digitization of trade modalities and the digitalization of trade objects. [1] Digital trade has emerged as the primary form of emerging trade due to its high efficiency and convenience. Nevertheless, digital trade entails significant transaction risks, such as issues related to the privacy and regulation of cross-border flows of financial data, among others.

Consequently, to safeguard data privacy at the level of cross-border flows of financial data, both Article 37 of the Cybersecurity Law and the Personal Information Protection Law stipulate the following requirements for cross-border flows of personal information: a security assessment and review are necessary. These regulations clearly define the principles and conditions for cross-border data flows and impose higher standards on the operations of financial institutions. [2] However, in response, many financial institutions have endeavored to circumvent or conduct the review and assessment stages through low-cost means, leading to adverse legal consequences and significantly escalating trade risks. Similarly, in terms of Article 24, Article 3 of the Regulations on the Administration of Technology Import and Export, the United States believes that the content of the provisions is too demanding for American small and medium-sized enterprises trying to transfer technology, because they usually do not have the expertise or resources required to evaluate and cover the risk of third-party litigation [3].

To address the above-mentioned reality, it is necessary to find means of low-cost intervention in the

trade process that can play a role and enhance the efficiency of assessment.

### 1.2 . *Introduction of blockchain technology in digital trade processes*

In view of this, the current laws and regulations cannot completely avoid the practical problems of financial institutions and other transaction subjects in the evaluation, evaluation, review, monitoring and other links of the trade process, nor can they reduce the occurrence of "gray zone" and "non-compliance measures." Before the introduction of more stringent policies and legal systems, the following problems still need to be solved to make transaction subjects reasonably avoid risks and improve their willingness to conduct digital transactions:

How to improve the willingness of trading subjects to implement the standardization of trade processes.

How to improve the efficiency and security of the transaction process.

How to effectively solve the problem of information asymmetry and opacity of transaction subjects.

As a disruptive innovation technology, blockchain technology is known as the "second Internet" and has attracted extensive attention from around the world [4]. Blockchain technology has the characteristics of flexibility in application, high efficiency in information processing, immutable data, and high transparency in use. Based on this feature, derivative has the characteristics of application technology to reduce management costs, high efficiency of supervision, distributed ledger storage technology and so on.

Comparing it with the problem one by one, it is not difficult to see that blockchain has its unique advantages in the application of trade link.

## 2. Analysis of the application of blockchain technology in the transaction process

The following is the application analysis of blockchain technology in helping the standardization, legalization and efficiency of transaction process and the management of blockchain technology at the level of legal system.

### 2.1 . *Financial evaluation*

Financial instruments have a strong lag [5]. How to promote the update and iteration of financial instruments, better meet the growth of new demand, and promote the better development of financial business? With the continuous introduction and innovation of financial products, financial evaluation is an effective link to safeguard the interests of both parties in financial transactions.However, considering the cost of the evaluation process and the complexity of the review process, enterprises and other subjects greatly reduce the willingness of enterprises and other transaction subjects to participate in the financial evaluation process.

In particular, the evaluation of different third-party evaluation institutions on different trading subjects leads to the differentiation of evaluation standards and procedures, which has a certain impact on the financial market norms.

Using blockchain technology to realize data visualization, procedural and digital review process, more convenient for financial institutions to carry out a comprehensive investigation, reduce the evaluation cost of enterprises and other transaction subjects. It will promote the efficiency of lending transactions and break information barriers. Its application position is mainly based on providing open and transparent economic asset certificates and evaluation reports for the borrowing demand side and the supply side.

### 2.2 . *Information monitoring link*

In order to maximize commercial interests, enterprises and other market players often artificially design and manipulate data and financial information [6]. Form market information barriers. And "information asymmetry" is one of the factors that form the risk of financial transactions. In the state of high-speed information dissemination, market behavior is unpredictable, the cost of simple personnel monitoring is often higher than the expected cost, and the ability of information acquisition will cause a decreasing state. Hiring third-party intermediaries will increase transaction costs and expand transaction risks.

Blockchain distributed ledger technology can effectively solve the problem of data storage in the transaction process, so as to establish trust between people and data [7]. This process will greatly reduce the loss caused by trust problems in the transaction process, realize point-to-point docking, and reduce the existence of third-party intermediaries.

### 2.3 . *Innovative application of blockchain technology*

The innovative application of blockchain technology can monitor both parties of digital trade in real time, pay close attention to capital flow and financial information, report abnormal behaviors and take targeted prevention mechanisms to reduce the occurrence of default and illegal behaviors, form a closed-loop structure of "blockchain + real-time monitoring", and highly unite operators and regulatory subjects.

## 3. Problems and dilemmas of blockchain technology application

### 3.1 . *Specific application level*

The application scenarios of blockchain technology can be divided into the front, middle and back end in the digital trade process. In each link of its application process, there are still the following problems to be noted, such as information security leakage, technical instability and technical tampering:

The front end of the trade process is the stage of submitting and reviewing the information of the transaction subject. Blockchain technology has the characteristics of information openness, transparency and immutability. However, it cannot ensure the accuracy of the information submitted by the transaction subject and cannot prevent the possibility of human manipulation. Therefore, traditional credit and asset appraisal methods still have certain advantages at the present stage in addition to the high cost of information review. In order to better promote the efficiency of digital transaction and reduce the evaluation cost, the application of blockchain and other innovative technologies should be deeply cultivated to the front end, the construction work should be done well, and the management of the operation standards of transaction subjects should be strengthened. Large-scale network linkage is realized to achieve automatic application submission of subject information - technical re-examination if the subject passes the examination or the information is wrong.

Trading middle end, the management of digital trading process operations. The excessive transparency of blockchain information increases the probability that information will be used by criminals. In the process of using blockchain technology, there is a lack of clear legal standards for its application limits and supervision. The development mode of "blockchain + digital finance" is not complete at present. In the face of the characteristics of rapid innovation of financial products, there are certain practical problems whether blockchain is fully applicable to the subsequent development. In addition to doing a good job in information protection, the establishment of access to personnel and the processing of information can be regulated by legal means, and the legal consequences of violation of the provisions can be strictly clarified.

The back end of trade is after-sales problem processing, information improvement and other problems. The information stored in the blockchain is immutable, so the update of user information is more likely to cause the inconvenience of modifying information and may face complex modification procedures and costs. Moreover, the quantitative index of blockchain technology to store information is difficult to predict. With the gradual increase of data content, the application system is given certain processing pressure. Data storage time limit and memory ratio often bring uncontrollable operational risks of blockchain storage technology. Through the linkage of "blockchain +", information can be automatically changed in real time and automatically transported to the prescribed storage hardware.

### 3.2 . *Management level*

At present, the unified governance mode of public and private data under the framework of "big data" has not been formed in China [8]. This generates certain risks and harms for the management and disposal of data. The country cannot manage and standardize the application of blockchain technology in a unified manner. This is also the fundamental problem of blockchain technology application. Applying technology to economic development is inherently risky. Although digital transactions will be greatly convenient and beneficial, and the idea is beautiful, the development mode of "controlling technology by technology" cannot be formed, and the technology cannot be maintained, and there will eventually be loopholes.

## 4. Legal management of blockchain technology application

In view of this, regarding suggestions for improvement, on the one hand, in terms of policy support, in the face of the application mode of blockchain technology with rapid innovation and development, the lag of regulatory laws brought by the complexity of legislative procedures will inevitably have an impact on the subsequent development of "blockchain +" mode. As for the application of blockchain technology, it is still necessary to strengthen the construction of the legal system, closely carry out technical supervision, risk prediction and information review, etc. Improve the stability and security of blockchain technology application mode, and timely respond to possible legal problems. By incorporating blockchain technology into the national unified management system and using discipline inspection and supervision organs, relevant normative documents can be formulated according to actual needs before the legislation to regulate and adjust certain new behaviors or phenomena is introduced.

On the other hand, it is necessary to improve users' awareness of maintaining their own information security when using, ensure the accuracy and authenticity of submitted information, and reduce the situation that customers intentionally conceal real information. Relevant legal systems

will be introduced to punish users who violate application standards in accordance with the law.

## 5. Concluding remarks

It is not enough for the application specification of "blockchain technology + digital finance" to stay at the conceptual level. With the increasing development of science and technology in China, the author expects to realize the development mode of "controlling technology by technology" mentioned in the article. The so-called: where there are people, there is society. To realize the mutual linkage of the Internet and take human wisdom as maintenance and management, it is believed that the combination of the two will achieve an ideal state and further contribute to the construction and development of China's digital economy.

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