

# **Application Analysis of Blockchain Technology in Cross-border E-commerce Payment under the Background of “Belt and Road”**

**Zhang Yi, Zeng Yinyan**

Guangzhou College of Technology and Business, Guangzhou 510800, China

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**Abstract:** With the rapid development of cross-border e-commerce industry in China in recent years, cross-border e-commerce payment transactions in the context of “Belt and Road” are also facing various problems such as credit risk and lag in cross-regional payment settlement. This paper will briefly describe the blockchain technology in the context of “One Belt, One Road” and analyze the existing problems of cross-border e-commerce payment. The main application value of blockchain technology for cross-border e-commerce payment system and the next stage block will be proposed. The challenge of chain technology.

## **1. Introduction**

Cross-border e-commerce is a kind of commercial activity in which transactions are divided into different customs, and the e-commerce platform enables the two parties to reach a certain agreement, thereby making payment settlement and trans-shipment of goods to complete the transaction[1]. The emergence of cross-border e-commerce has greatly reduced the transaction costs of e-commerce companies and foreign customers, streamlining the transaction process, and directly and effectively speeding up the turnover of funds, providing an efficient cross-border trade channel for the world[2]. Although the trade volume of cross-border e-commerce is so high, the main body of trade is mainly export. In recent years, in order to promote the development of cross-border e-commerce, China has continuously introduced new policies to support cross-border electricity in the next few years. The speed of business development will continue to accelerate. Cross-border e-commerce has quickly become a new growth point for China's trade. It has also become a new way of international trade, constantly changing the traditional international trade pattern, and bearing the important mission of China's trade transformation. Cross-border e-commerce has great potential as an emerging trading method.

## **2. Overview of “One Belt, One Road” e-commerce development and blockchain technology**

In China's cross-border e-commerce, the main operating mode is handled by a third-party platform, such as a small series of B2B, C2C, B2C and other models, along With the continuous promotion of "One Belt And One Road" and the continuous development of cross-border e-commerce, some new The e-commerce platform is like a bamboo shoot after the spring rain, such as Jingdong, Taobao, Tmall and other e-commerce platforms, which makes China a good situation in the cross-border e-commerce industry, has a huge potential, in China Cross-border e-commerce has a very important position when conducting foreign trade. In the process of in-depth analysis of blockchain technology in recent years, it is learned that this technology is a kind of distributed bookkeeping database. Therefore, the centralization of blockchain technology should be fully considered when applying this technology. From the perspective of advantage analysis, blockchain technology can achieve the goal of improving the security trust of cross-border e-commerce payment links. To a certain extent, blockchain technology can realize the authenticity of cross-border e-commerce transactions, simplify the cross-border e-commerce payment process, and further realize the goal of steady development of cross-border e-commerce.

### **3. Status of cross-border payment in the “Belt and Road” region**

#### **3.1. “One Belt, One Road” advocates promoting rapid growth of cross-border payments**

The 19th party of the party was held in 2017, and it has been clarified that the regional economic pattern supporting China's modern economic system construction is “4+3”. Among them, “3” is the “Belt and Road” and “One Belt and One Road” initiative to promote the countries and regions along the line. Economic cooperation, the scale of cross-border payment is strong. In 2016, the cross-border payment involved in China's mutual investment in the “Belt and Road” region reached US\$178.4 billion, an increase of 95% over 2013. Non-banking sector, 2017 In the first half of the year, the total amount of cross-border payments between China and the countries along the “Belt and Road” reached US\$600 billion, an increase of 9.1070 over the same period last year. From the perspective of the countries involved, the scale of cross-border payment between China and Vietnam and Pakistan has grown rapidly. The cross-border payment scale in 2016 was 1.5 times that of 2013. Apart from the relationship between the countries, this is due to the benefit of the China-Pakistan corridor. From the perspective of driving capacity, the cross-border e-commerce is the main support for the strong growth of cross-border payment in the “Belt and Road” region. In 2016, the cross-border e-commerce transaction volume between China and the “Belt and Road” region reached 6.7. One trillion yuan, a year-on-year increase of 24070, which is twice as much as that in 2013. With the improvement of various infrastructures in the “Belt and Road” region, more countries will inevitably participate in it. For example, the UK is in the process of Brexit. It clearly expressed the willingness to participate in the construction of the “Belt and Road”. More economic cooperation will continue the strongman situation of cross-border payment growth.

#### **3.2. Cross-border payment security needs to be improved**

The rapid expansion of cross-border e-commerce in the “Belt and Road” region has forced cross-border payment to accelerate, but related safeguard measures are still being developed and improved in the future. At present, cross-border payment security in the “Belt and Road” region has been Not fully guaranteed. From the cross-border payment wood, there are currently three risks. First, the risk of fraudulent cross-border payment e-commerce makes electronic payment occupy more and more people in the payment system. Customers in Europe and America are accustomed to credit card payment. The “Belt and Road” region tends to bundle debit cards and savings cards. The payment methods used are confidential payment and confidential payment. Second, cross-border payment transactions involve cross-border transactions involving a large number of entities, and some risks are not circumvented. Third, the risk of funds for cross-border transactions. E-commerce has enabled many small and medium-sized businesses to directly extend the economic trading radius to the outside world. However, when the current “One Belt, One Road” cross-border e-commerce platform is based on the interests of buyers, the seller's assets are mostly frozen by the cross-border e-commerce platform. If you want to appeal, you need to hire a lawyer. For small and medium-sized sellers with limited size, they will abandon their complaints and suffer losses due to factors such as time and effort.

#### **3.3. Lack of “One Belt, One Road” universal payment regulatory framework**

In June 2015, the General Office of the State Council officially issued the “Guiding Opinions on Promoting the Healthy and Rapid Development of Cross-Border E-Commerce”, requiring the cross-border payment management system to be improved as soon as possible. In August 2017, the People's Bank of China officially launched the network link, and actually took the first step toward Internet financial supervision. It can be seen that the regulatory base for cross-border payment is at the stage of coping with problems and solving problems, and the ability to predict and prevent potential problems is weak. The “Belt and Road” region has encountered different problems in the field of cross-border payment supervision. The regulatory process is different, and the unified regulatory framework is still empty. This has greatly hindered the integration of the “Belt and Road” region into the old financial system.

## **4. The effect of blockchain technology on cross-border e-commerce payment model under the background of “Belt and Road”**

### **4.1. Effectively reduce the “One Belt, One Road” cross-border payment credit risk**

The blockchain technology defines a query unit-block with information as content by defining a time stamp of a limited duration. All transaction information and related information are recorded in the corresponding nodes of each block, and people can inquire relevant information at any time, that is, the transaction related parties or other unrelated entities can understand all the information related to the transaction on this information platform. However, the public information is limited to the information of the trading wood, and the personal information of the trading account is hidden. This open and transparent state of information is first of all that transaction-related benefits can be guaranteed. Secondly, it can solve the problem of poor information from the root wood while protecting personal information. Finally, it can effectively eliminate false transactions. Thereby avoiding losses caused by fraudulent transactions. This trait of blockchain technology can guarantee the security of cross-border payments under the current situation that the national financial institutions' accounting systems along the “Belt and Road” are not connected. Blockchain technology realizes that single data is no longer an independent node. Data and data are highly correlated with each other, and each block is a unit node, which includes massive data. To tamper with a certain data information, not only the search for wood is extremely high, but also must be supported by more than 51% of the nodes in the blockchain system. The work is extremely difficult, and there is no possibility of tampering in the base wood. In this way, the authenticity of the information of the “Belt and Road” will be fully guaranteed, and the risk of cross-border transactions and financial risks caused by information changes will be avoided.

### **4.2. Improve settlement efficiency**

In the process of traditional cross-border circuit payment mode expansion is like analysis, in this process through the discussion of the relevant issues in the settlement part, from which we can understand the traditional cross-border e-commerce payment exists, the process is cumbersome and complex related issues, for the cross The payment efficiency of the e-commerce providers also has a large impact, and the waste of the payment steps wastes too much time, resulting in a reduction in the number of transactions required to be completed in a short period of time. And the cross-border e-commerce payment model of blockchain technology can also simplify complicated and complicated workflows, not only improve the efficiency of cross-border e-commerce payment settlement, but also avoid a series of problems in the cross-border e-commerce payment process. Improving the rationality of cross-border e-commerce payments also plays a very important role. Under the condition of improving the efficiency of cross-border e-commerce payment settlement, the cross-border e-commerce payment model function has been expanded and the overall capital flow rate has been accelerated, which is also very important for expanding the scope of cross-border e-commerce trade. Generally speaking, when introducing blockchain technology, it should ensure that this technical means is compatible with the cross-border e-commerce payment model. Only in this way can cross-border payment settlement work be carried out through the blockchain payment platform, effectively reducing The amount of capital invested by consumers in the cross-border trade process will enhance the efficiency of cross-border e-commerce payment settlement while protecting consumers' rights and interests.

### **4.3. Conducive to the efficient implementation of cross-border payment in the “Belt and Road” region**

Blockchain technology helps to reduce the construction cost of cross-border payments in the “Belt and Road” region and improve payment efficiency. First, the database design of distributed accounting reduces the reconciliation between transaction entities. One of the characteristics of blockchain technology is that the verified transaction information is sent to other block nodes while being permanently stored in the block node. Any transaction party can view relevant information after login authentication, on its own information side. The reconciliation work can be completed

secondly, and the intelligent process improves payment efficiency. The emergence of blockchain 2.0 has further enhanced the efficiency of network transactions, especially the application of technologies such as smart contracts. The smart contract is to pre-set the workflow, rules and terms in the system, and then intelligently perform. From a time perspective, it takes only a few minutes or even seconds to complete the payment, which is unmatched by the current payment process in the “Belt and Road” area. Because many people still need to complete payment by logistics entities such as cash flow, transfer of bills and bank remittance, and blockchain technology application environment, cross-border payment is only a digital circulation process from the cost level, which can be current Cross-border payments in the “Belt and Road” region save huge amounts of payment, requiring only a fraction of a fraction of the current cost, or even a few percent. Again, blockchain technology is an open system, and blockchain technology can be integrated with next-generation technologies. With the development of e-commerce and modern technology, more and more information technology has entered the economic and social system of the “Belt and Road” region. For example, cloud computing is the deployment infrastructure of blockchain technology, and human data can enhance storage functions and encryption. Technology enhances encryption, the Internet of Things, the equipment network infrastructure of the blockchain, the application of artificial intelligence to optimize the blockchain, and the new generation of communication networks to ensure efficient payment. The integration of blockchain technology and next-generation information technology is in line with the current status of the “Belt and Road” regional information technology, and it can also enable countries along the route to introduce and use new technologies.

#### **4.4. Enhance the security of funds**

The network environment is virtual, and through the network environment to carry out fund security management, as a comprehensive optimization of the financial security attributes to create mature conditions. Blockchain technology has accumulated a certain amount of basic operational experience[9], and can play a greater role in the construction and operation of cross-border e-commerce payment platform. Therefore, from the perspective of blockchain technology, cross-border The optimization of the technology of the e-commerce business can make the financial security in the network virtual environment get higher quality technical guarantee and create the basic conditions for the improvement of the comprehensive quality of the fund security management work. At present, the construction of cross-border e-commerce platform is under certain pressure on legal protection. Therefore, the safety of maintenance funds is always the key to determining the total investment of social capital. Although the past e-commerce, especially the development of cross-border e-commerce has created favorable conditions for the further improvement of the e-commerce industry, there is still a large part of the construction of the online trading platform is difficult to obtain sufficient support for the fund security management business. Therefore, the in-depth improvement and control of the financial security attributes can provide support for the better realization of the blockchain technology value, and also enable the cross-border e-commerce industry to occupy a favorable position in the integration of social capital.

### **5. Cross-border e-commerce payment system blockchain application challenges in the context of “Belt and Road”**

#### **5.1. Data Information Security Challenge**

The blockchain achieves information traceability and sharing through its own technical advantages. However, the storage of private keys, the setting of different node permissions, and the anti-aggression of the system also bring new challenges to the security of information data. For example, the loss of private keys leads to the loss of ownership of assets in the blockchain, which will bring irreparable losses to the “One Belt, One Road” developing transaction entity and even the regulatory authorities. How to make use of innovative thinking, while giving full play to the advantages of blockchain technology, while satisfying the needs of business logic privacy and facilitating customer use, blockchain technology is applied to cross-border e-commerce in the

context of “One Belt, One Road”. An important issue to consider. Industry insiders should consider how to integrate blockchain technology with other new technologies to address identity verification and credit management issues, enabling them to provide the one-stop support for cross-border e-commerce.

## **5.2. Current concepts, systems, and legal constraints**

Due to its self-management, decentralization, and collective maintenance, the blockchain dilutes the state and regulatory concepts, and does not correspond to the current laws. It subverts the current production and lifestyle of the public. Therefore, the application of blockchain technology At present, there is a complete lack of institutional discussion and theoretical preparation. Even in the most mature bitcoin in the application of blockchain, each country holds different attitudes, and the application and development of blockchain technology is inevitable. There are big obstacles. Therefore, it is necessary to consider the use of innovative regulatory measures to promote the new business model, in order to more fully leverage the advantages of blockchain technology. This requires not only the deficiencies in the business model, but also the relatively loose legal environment for the development of blockchain technology and cross-border e-commerce, and avoid excessive supervision.

## **5.3. Urgent need for a composite knowledge structure team**

In the era of blockchain technology development and application, with the changes of the underlying technology environment, the physical subject under the exchange of value and the imbalance of the knowledge structure of the transaction subject, etc., it will become the factor that influences the design and implementation of the value exchange method. Therefore, the compound talent team consisting of blockchains and industry experts in various fields will have the strength to use the blockchain's innovative thinking and cutting-edge technology to clearly position the core issues in this industry[11]. Exchange of forms and values of smart contracts and business logic to improve the applicability and operability of blockchain technology in cross-border e-commerce.

## **6. Conclusion**

In summary, it should be said that the future of blockchain technology is not really clear whether it can achieve faster transaction, payment, settlement, or subversive application in the design of financial infrastructure. At present, it seems that the development of blockchain technology needs to be continuously explored, especially in the application of blockchain technology in cross-border e-commerce payment systems. The prospects have not yet been proven. Therefore, in the aspect of applying the blockchain technology to the cross-border e-commerce payment model under the background of “One Belt, One Road”, I believe that we should not simply negate, but should embrace the blockchain with enthusiasm and adopt a calm and calm attitude. Actively explore the research of blockchain technology.

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