

## Case Study of Block Chain & Supply Chain Finance: Open the Rich Road for Small and Micro Enterprises-A Based on "We Chain" Platform

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**Abstract:** Due to internal constraints such as weak profitability and small volume, financing problems has been restricting the growth of small and micro enterprises. However, neither the traditional supply chain finance platform can establish the trust mechanism between SMEs and fund providers, nor can they provide financial products suitable for the business characteristics of upstream and downstream enterprises according to their business characteristics, which further increases the risk of performance. This paper takes Tencent's "We Chain" as the case study object, and finds that the application of block chain technology enables the upstream and downstream enterprises in the supply chain to form an alliance network and thus accelerating the information connectivity between enterprises. In addition, the non-tampering of the block chain also provides credit endorsement for SMEs which greatly reduces the risk of supply chain finance, further saves social resources and improves the utilization efficiency of resources.

### 1. Introduction

In recent years, in order to help small and micro enterprises solve the problem of financing difficulties, the relevant functional departments have constantly promulgated policies and regulations to promote the innovation of financing mechanism. At present, supply chain finance can be subdivided into receivables financing, advanced receivables financing and inventory financing. However, in practice, there are still the following problems in the development of traditional supply chain finance business: credit cannot penetrate sharing, information cannot be transferred in a timely manner, lack of trust system, supply chain risks cannot be avoided, and financing is difficult and expensive.

However, the emergence of block chain technology has solved the deficiencies of traditional supply chain finance and realized the establishment of trust mechanism between enterprises and financial institutions. Block chain is a fusion technology of peer-to-peer communication, digital encryption, distributed ledger, multi-party collaborative consensus algorithm and other fields. Information is malleable and tamperable on the chain, which is very suitable for multi-party supply chain finance business scenarios.

### 2. Literature Review

The concept of block chain can be traced back to late 2008. Xu zhenyu et al. (2019) conducted statistics and research on the number of block chain publications at home and abroad, and found that before 2012, there were very few researches on block chain at home and abroad, and the number of related literature publications was basically at a standstill [1]. Ouyang liwei et al. (2019) pointed out that with the gradual rise of block chain technology, the application of smart contracts based on this technology is also increasingly widespread, and block chain technology has been deeply involved in many fields such as finance, management, medical care, Internet of things [2].

## **2.1 The Development Status of Block Chain & Supply Chain Finance**

Jiang haifeng (2018) pointed out that financial services industry is an important driving force for global economic development and one of the most centralized industries [3]. However, information asymmetry still prevails in global financial markets, which leads to the high cost and inefficiency of the entire transaction process. For Banks and other financial institutions, the block chain technology represented by bitcoin can undoubtedly reduce the financial transaction cost greatly. In the research of Maloumy-baka&Kingombe (2015), it is also mentioned that bitcoin based on the block chain technology enables the transaction parties to conduct remittance directly without any financial intermediary [4]. Secondly, for enterprises in need of capital, blockchain technology provides a new plan for enterprise financing. Swan (2015) discussed that due to the characteristics of blockchain, block chain could not only subvert the traditional financial industry, but also be used in all fields lacking trust, enter the era of information freedom and notarization [5].

## **2.2 Financing Status of Small and Micro Enterprises**

For a long time, financing expensive, financing difficult has been restricting the development of China's small and micro enterprises. From the external perspective of enterprises, Han heyang et al. (2016) pointed out that financial exclusion exists in the financing process of small and micro enterprises [6]. From the perspective of enterprises themselves, Li jianjun and Zhang danjun (2015) pointed out that many small and micro enterprises, out of consideration of complicated bank loan procedures and high time cost, took the initiative to turn to the informal financial system financing with simple procedures and strong timeliness, and excluded formal financial institutions from their financing channels [7]. Xu didi (2019) said that supply chain finance has also become a new direction for the development of supply chain management and finance theories in recent years, and is an effective means to solve the financing problems of smes, reduce financing costs and reduce supply chain risks [8].

## **3. Introduction to We Chain Platform**

### **3.1 Brief Introduction to Platform**

Tencent foray into the blockchain sector began in 2015, and three years later tencent formally launched its focus in the supply chain finance sector. In the current block chain applications that have been implemented, tencent has achieved good results in such projects as electronic invoice, supply chain finance and judicial depository certificate. The we chain is jointly built by tencent fintech and linklogis, which is defined by tencent as "supply chain finance and block chain and ABS platform". But unlike JD and SF, and other enterprises, tencent is a financial technology service for financing the two sides, that is, financial institutions and small micro enterprises to provide technical support services, to build assets end, and docking capital, are not directly involved in the supply chain in the financial system, so the formation of the alliance chain more solid, more controllable risk.

### **3.2 Business Development of We Chain Platform**

"Let your receivables flow" is the slogan on the homepage of the official website of the micro enterprise chain platform. By the end of 2018, the size of China's receivables has exceeded 20 trillion, and still showing an increasing trend. Therefore, for enterprises, the activation of receivables can undoubtedly bring a lot of cash flow, asset efficiency can be further improved. There are three classic modes of supply chain finance, namely, accounts receivable financing, inventory financing and advance payment financing. We chain focuses on the receivables model of supply chain finance. Since its establishment, the business layout of the We Chain platform is shown in the following figure:

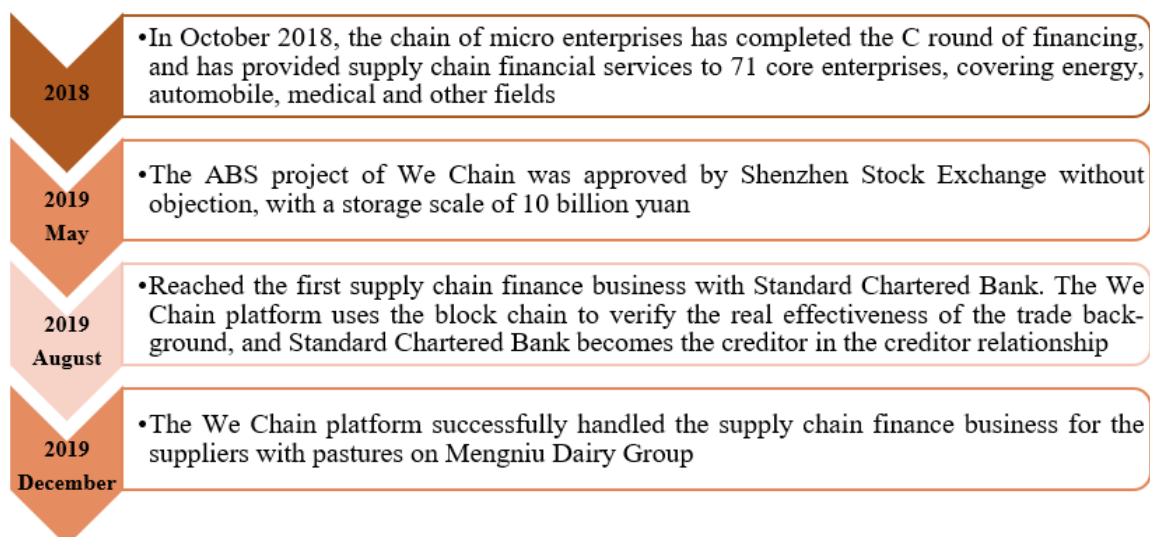


Figure 1 Business layout of We Chain platform.

## 4. Case Analysis of We Chain Platform

### 4.1 Business Model Analysis

In business activities, when the core enterprises purchase from the upstream suppliers, they tend not to pay immediately, so receivables will form. At this time, the We Chain platform uses the block chain technology to audit the transaction background behind the above receivables and complete the business of asset chain, asset right confirmation and asset circulation on the platform.

Complete after import, then, in assets related to cooperative financial institutions will be the accounts receivable to finance the production output, with the support of ABS platform complete trading assets, creditor's rights can be split through the platform, touch to help financial institutions to small micro enterprise, digging low-risk high-yield assets, meet the core industrial chain management demands. Secondly, for core enterprises, the We Chain platform effectively improves the cash flow of enterprises and helps the upstream and downstream enterprises in the supply chain to form more stable enterprise alliances. Finally, for the fund provider, the We Chain provides credit guarantee for small and micro enterprises and core enterprises, introduces multi-channel funds for the platform, connects standardized assets of the platform, and realizes the closed loop of capital flow and information flow of the whole platform. The business model analysis diagram of the We Chain is as follows:

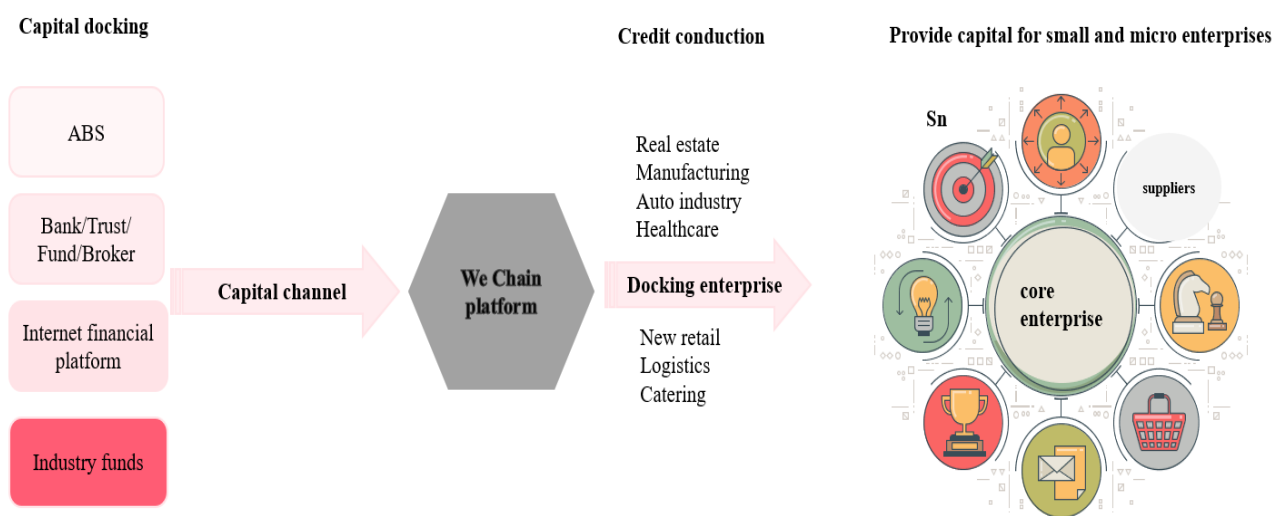


Figure 2 The business model of We Chain.

## 4.2 Technical Framework Analysis

The overall technical framework of the We Chain platform is divided into three levels, namely the application service layer, the platform service layer and the underlying platform of the block chain. Among them, the most critical technology is the block chain technology.

Firstly, the consensus algorithm of block chain can solve the credit problem between upstream and downstream enterprises in the supply chain. Enterprises need to log in and register when they log in the We Chain platform for the first time, and upload the public key. After the core enterprise has completed the certification, the node can create a new alliance chain, add nodes, and invite upstream and downstream members of the supply chain. After all members have completed the relevant authorization and opened the relevant rights, the alliance chain can be started.

Secondly, smart contracts protect against default risk. The entire asset flow process is completed on the chain, and the contract behind it is executed by the computer. Only after both parties fulfill their obligations at the same time, the program will be deemed to have reached the contract. The We Chain platform makes use of the block chain to build an intelligent trading system. After the transaction information is verified, the system can automatically and quickly carry out the asset transfer link, and track the warehousing and logistics situation in this process to ensure that the capital chain is always in a closed-loop state before the completion of the transaction.

Finally, the decentralized feature of block chain realizes the multi-level penetration of credit. The credit of the core enterprises in the traditional supply chain can only cover the primary suppliers and primary dealers, while the small and micro enterprises in the upstream and downstream still cannot provide effective credit transmission. We Chain platform through will be gathered into a union chain upstream and downstream enterprises, credit transfer can penetrate to the various nodes, the whole supply chain at both ends of small micro enterprises can also benefit, to solve the financing problem of multiple suppliers and distributors.

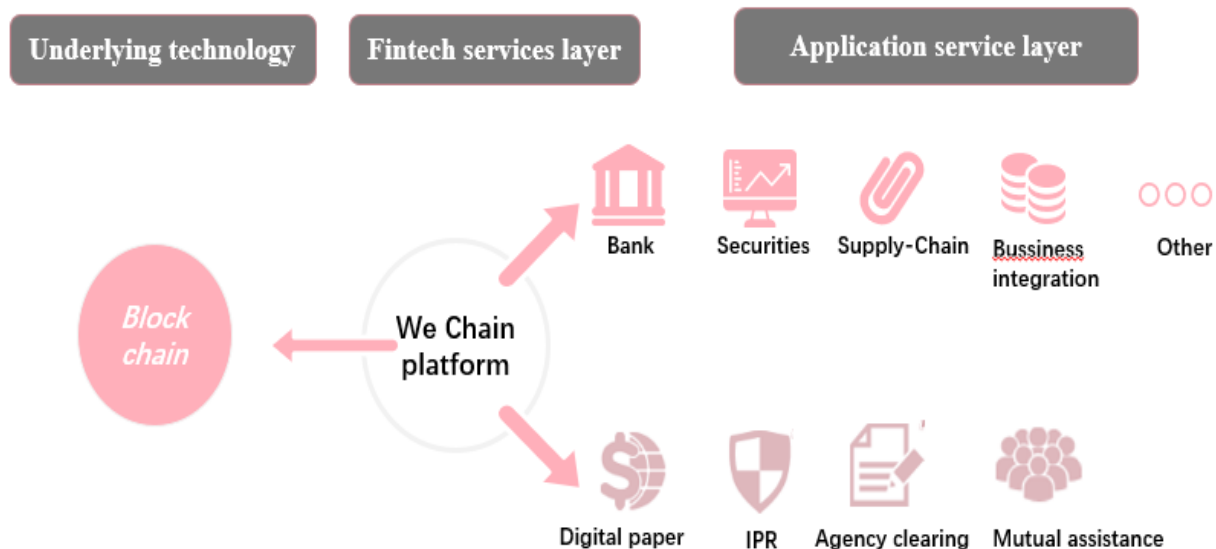


Figure 3 The business architecture of We Chain

## 5. Conclusion

Based on the strong support of national policies and the financing needs of small and micro businesses that need to be filled, tencent fintech integrates tencent's fintech capabilities and combines tencent block chain technology, ABS platform and AI technology to create the first "supply chain finance & block chain " open platform -- Tencent We Chain platform.

First of all, for the enterprises participating in it, it is beneficial for small and medium-sized enterprises to mobilize the assets in hand to obtain financing and improve the asset turnover rate. To solve the financing problem of small and medium enterprises is also to respond to the call of

national policy. Secondly, the emergence of blockchain is also expected to disrupt the way assets are issued. The traditional asset release has the characteristics of high threshold and large amount, while the block chain technology enables all users in the network to conveniently issue and trade their own assets and complete the transaction in a safe environment. As long as the market is transparent enough and the information is perfect enough, the information on the block chain is credible enough, and it will be very difficult to profit from fake assets. Therefore, while providing technical support for supply chain finance, block chain may also reconstruct our current financial paradigm.

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