

OUTLOOK AND ANALYSIS OF BLOCKCHAIN TECHNOLOGY AND REGULATIONS IN CHINA

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1. Introduction

China's domestic private blockchain industry is going more mature by the year. According to industry tracker Blockdata, China leads the world in new blockchain projects initiated, with 263 projects in process that form 25% of the global share as of late 2018.

The rapidly rising number of blockchain projects in China is accompanied by increased regulation, including a requirement that blockchain-related projects be registered with the Cyberspace Administration of China. The government's standing is to adopt efficient policies to boost the economies and seek for global growth in the industrialization of blockchain. However, by overlooking and analyzing the development path and lawmaking path of the blockchain technology, we can observe that while China has officially endorsed the technology of blockchain, authorities have adopted a skeptical and restrictive attitude against cryptocurrencies.

2. Blockchain technology development path in China

2.1 Background and definition

The underlying blockchain technology used by Bitcoin has been developed for more than ten years in China since Satoshi Nakamoto's report *Bitcoin: A Peer-to-Peer Electronic Cash System*.

Defined in the “Whitepaper 2016”, blockchain is a novel application paradigm compositing distributed data storage, point-to-point transmission, consensus and encryption algorithms. It uses blockchain data structures to verify and store data, uses consensus algorithms to generate and update data on distributed nodes, uses cryptography to guarantee the security of data transmission and user authentication. Blockchain is also considered as a decentralized and distributed ledger database. Decentralization, which is opposite to the traditional way of centralization, means where there is no center, or every node on the chain can be the center. As a distributed ledger database, it not only stores the ledger data in each node, but also shares the state of the node synchronously to neighbors on the chain.

The application of blockchain has extended to the Internet of Things, intelligent manufacturing, supply chain management, digital asset transactions and other fields, which will bring new opportunities for the development of new generation information technologies such as cloud computing, big data, mobile Internet, etc. It is considered to provide the ability to trigger a new round of technological innovation and industrial transformation by the Chinese government.

2.2 Blockchain policies issued by Chinese central government

In 2016, the State Council of RPC released *the Outline of the 13th Five-Year Plan for the National Informatization* (the “Plan”). It was the first time that Chinese government included blockchain in the category of new technology as a national information plan. It indicates that China has started to promote the development of blockchain technology and applications. Since then, the central and local governments have issued relevant regulation or support policies (local policy focus more on support), which has created a good policy environment for blockchain technology and industrial development.

The technical logic and underlying value of the blockchain are gradually understood by the Chinese people. In 2016, the Ministry of Industry and Information Technology (MIIT) published *China Blockchain Technology and Application Development Whitepaper (2016)* (the “Whitepaper 2016”). It not only summarizes the typical application scenarios of blockchain development both in domestic and foreign countries but also introduces the development roadmap of China's blockchain technology and the direction and process of future blockchain technology standardization.

More policies released in the next two years from MIIT, State Council, and Ministry of Commerce of RPC. From 2017 to 2018, there were 20 policies published in total: thirteen policies related to blockchain development covering technology, application and industry fields; the rest seven related to government regulation¹.

2.3 Regional blockchain policies issued by provinces and cities

The regional policies to support blockchain technology basically follow the guidance of *the Plan* and *the Whitepaper 2016* discussed in section 2.2 and focus on the implementation. The detailed policies highly depend on the business and development strategies of the regional government. For example, as the capital and political center of China, Beijing initiated *Zhongguancun National Independent Innovation Demonstration District the supportive fund management methodology on promoting the integration of science and technology and innovation development* (the “method”) in April 2017. The government would reward the company which signed the blockchain-related technical application contract or supply agreement with 30% of

¹ Current Status and Trend Analysis Report of China Blockchain Policy, Blockchain Research Institute of People's Capital, 2019.08.

cashback (no greater than five million yuan per project). On the other hand, the government of medium-sized metropolitan cities release policies but occasionally provide cash rewards. For instance, the government of Changsha, Hunan provides workplaces for the blockchain companies which will settle in Changsha Economic and Technological Development District. Just in 2018, there were more than 40 policies released by regional governments from 30 different provinces or districts². More policies related to the blockchain industry development are going to initiate in 2020. In addition, there are 9 blockchain industry clusters under construction in China³. With the gradual improvement of the central and local governments' blockchain support policies and the maturity of blockchain technology, the blockchain industry development is going to be blooming in China.

3. Blockchain policy development path in China

While entrepreneurs focus on the development of Blockchain technology, the price of cryptocurrencies such as Bitcoin, Ethereum, Litecoin is rocketing with large amounts of capital. Initial Crypto-token Offering (ICO), as nascent form of fundraising in which blockchain start-ups issue their own cryptocurrencies are sought after by some lots of speculators.

3.1 ICO risks and government regulation

The explosion of ICO projects bringing new risks to the financial market, such as false asset risk, operation failure risk, and investment speculation risk. There are project owners misleading investors with propaganda methods to engage in financing activities. Some of them don't even

² Research of Financial Applications and Development of China's Blockchain, National Internet Finance Association of China, 2020.

³ See <https://finance.sina.com.cn/blockchain/roll/2020-05-06/doc-iircuyvi1553044.shtml>

have any prototype released. The relevant financial activities require proper government regulation.

In September 2017, *Announcement of the People's Bank of China, the Office of the Central Leading Group for Cyberspace Affairs, the Ministry of Industry and Information Technology and Other Departments on Preventing the Financing Risks of Initial Coin Offerings (The "Announcement")* was released⁴. It is the first time Chinese authorities characterized ICO as illegal funding. Besides, Tokens or "virtual currencies" used in token issuance financing are not issued by monetary authorities, do not have legal tender status and mandatory currency attributes, do not have legal status equivalent to currencies, and cannot and should not be circulated in the market as currency use⁵. This article differentiates virtual currencies with fiat currencies and forbids token financing activities. It does not mean tokens and token transactions are illegal. In addition, ICO Projects that have been financed must be refunded (the "Announcement", Article 2). However, the Announcement does not specify how to refunded, when to refunded, how to refund the tokens that have been in circulation in the market, how to deal with the tokens locked in the smart contract, and what should investors do if they choose to continue to hold tokens. In order to provide regulation, it was until 2018 that the People's Bank of China released *Notice on carrying out self-examination and rectification of payment services for illegal virtual currency transactions* (the "Notice"). This notice claimed regulation on all related organizations and government departments.

3.2 Blockchain Information Services policy and risks

⁴ Announcement of the People's Bank of China, the Office of the Central Leading Group for Cyberspace Affairs, the Ministry of Industry and Information Technology and Other Departments on Preventing the Financing Risks of Initial Coin Offerings, 2017.09.

⁵ Id at Article 1.

On January 10, 2019, the Cyberspace Administration of China (“CAC”) issued Order No. 3, The Provisions on the Administration of Blockchain Information Services (the “Provisions”) were reviewed and approved at the Cyberspace Administration of China Office Room Affairs Conference. The Provisions have been effective since February 15, 2019. This is the first stipulation and technical policy relevant to blockchain technology and its applications. Although the scope of management is limited to the field of blockchain information services, it has a milestone significance for the development of blockchain technology in China. The analysis is discussed in the next section.

3.2.1 CAC scope and purpose

First, the Provisions clarify the definition and scope of the subject for blockchain information services as well as their providers. The “blockchain information services” means “information services provided to the public in such forms as Internet websites and application programs based on blockchain technologies or systems⁶”. Therefore, we believe that public chain projects, DAPPs, wallets, etc. should all fall within the scope of blockchain information services and are regulated projects. For a given project, whether the project registration place, operation and server are in China or abroad, it should fulfill the obligations in the Provisions as long as it is engaged in or provides services to Chinese residents. Second, the Provisions certify the regulatory agency and encourage the development of industry organizations. The Cyberspace Administration of China (“CAC”) shall, according to its functions, be responsible for the supervision, administration and law enforcement of blockchain information services nationwide⁷. The jurisdiction system of attribution is adopted so that each regional cyberspace administration

⁶ Article 2, Provisions on the Administration of Blockchain Information Services, Order No. 3 of the Cyberspace Administration of China, 2019.01.

⁷ Id at Article 3.

under the Central Government will be responsible for the regulation of blockchain information services. Third, the Provisions define safety responsibilities and establish a manageable system. Specifically, it is mentioned in Article 5, 6, 9, and 15; The record management and regular inspection is in Article 11, and 12; The violations penalties are detailed in Article 19, 21, and 22.

3.2.2 Blockchain Information Services risks

The Chinese government knows that most blockchain projects and products are centralized in nature. Some DAPPs are indeed based on a decentralized chain. However, most of the infrastructure level implementations are opaque to users including how the data is stored and network nodes are used. In essence, a lot of data is still stored in the centralized server. There are majorly two situations, which need reporting to the CAC at regional levels.

The first scenario is that DAPPs are based on some "decentralized" blockchains built by the application developer themselves. Although it has consensus property on tons of nodes, it is still considered as centralized architecture if the nodes are all on their own cloud servers, even on local servers. Another trick used by some blockchain startup companies is hash ledgering, which is to convert the data information to be chained into a string of characters recognized by the computer with a hash function and then digitize it on the blockchain. The clients are misled that their information can be protected by exposing the hash value instead of the actual information. However, the original data to be hashed is still on centralized server storage and can be traced internally.

3.2.3 Future works for Blockchain Information Services regulation

Undoubtedly, neither the traditional Internet nor the blockchain network can prevent illegal crimes. The block chain network system, which is decentralized with unmodifiable data on chain nodes, can be abused by malicious users. There are several concerns which needs further discuss: First, whether the whole decentralized public blockchain can be considered as a legal responsibility bearer. There is a lack of details on the Provisions to determine whether the blockchain is decentralized from both technical and legal perspectives. If one blockchain network is considered as decentralized by CAC, since it cannot express independent willingness and control its own behavior, it cannot bear legal responsibility. One opinion is to recognize the decentralized blockchain application as an information network infrastructure, which is essentially the same as the current Internet spread all over the world. Let the Internet as a whole take legal responsibility is unrealistic. On the other hand, no one can technically terminate the public blockchain service unilaterally from the technical perspective, even if it is the government. But the private ones should fulfill the regulation.

Second, clarification on what legal responsibilities should each participant in the decentralized application blockchain network take is required. There are several categories of public blockchain participants: the application developer and maintainer, the important node such as a block producer, and the general node as known as the blockchain network users. Jenny Leung thought that under some condition developers should be held responsible for violations of law⁸, if they have subjectively used the program as a criminal purpose. In the actual judicial process, their motivation may be flawed to investigate and classify. On the other hand, if a blockchain application is not developed for illegal purposes while the node on the chain is owned by the

⁸ 7 Legal Questions That Will Define Blockchain in 2019, Jenny Leung, 2019.01, See <https://www.coindesk.com/7-legal-questions-that-will-define-blockchain-in-2019>.

block producers, there is less reason for them to take legal responsibility. For instance, the chain node containing the illegal transaction information is generated by a legally approved application. And the actual blockchain network user information on that transaction is possibly faked or even anonymous. Last, in order to prevent malicious users, the Provisions require them to use their real names. This can add legal obstacles for both domestic participants to join international blockchain as well as Chinese public blockchain being recognized by international customers.

In summary, it is the first and most important step to make the blockchain industry law-abiding, restrictive, and disciplinary. The Provisions clarify the information security management responsibility of blockchain information service providers as legal restrictions and guidelines. Service consumers can avoid risks conductively. In addition, it is regulating and promoting the healthy growth of blockchain technology and related services in China. Meanwhile, The Chinese government should have follow-up policies to define relevant legal responsibilities on the basis of accurately characterizing the behavior characteristics, rights, obligations and corresponding consequences of blockchain network participants.

4. Conclusion

As a cutting-edge Internet technology in China, blockchain has gone from obscurity to popular discussion, and then back to reasonable development. How to guide blockchain technology through regulation and apply it to specific economic scenarios is a matter of great concern to all people who are passionate about the development of blockchain. The formulation of the Provisions is a turning point in China's blockchain regulation from scratch. It seems that the blockchain regulations give heart to the crypto-community that Chinese authorities are evolving their position in respect of ICOs and blockchain away from the hard ban. With the landing of

regulation, it will have a positive role in promoting the development of blockchain technology applications in China. However, although the trend towards regulation and away from prohibition is clear, it will take time for interpretation and enforcement guidelines to develop. The Local officials will act conservatively and take a wait and see approach as this area of law continues to evolve.