Public Financial Trade Chain

Global financial trade cloud smart community based on blockchain

White paper V1.0

Public Financial Trade Chain Foundation

1 Introduction of blockchain

1.1 Blockchain 1.0 – digital currency

On 31st October 2008, Satoshi Nakamoto published the first bitcoin white paper titled "Bitcoin: A Peer-to-Peer Electronic Cash System". On 3rd January 2009, the first bitcoin is mined and the bitcoin network is officially launched. As a virtual currency, the total amount of bitcoin follows the consensus agreement, no individual or institution could modify the supply volume or transaction record. After years of successful running of bitcoin network, some financial institutions and investors started to notice that blockchain, the infrastructure technology for the invention and use of bitcoin, is actually a fascinating distributed ledger and peer-to-peer value transfer technology. It will bring groundbreaking changes for the financial segment or even all industries, and might trigger a new technical revolution.

Blockchain technology uses decentralized consensus mechanism to maintain a complete distributed ledger database that can't be tampered. It enables all parties in the blockchain to use the same ledger system without the need of building trust. There are some key features of blockchain 1.0.

Chain data block structure by blocks: In the blockchain system, each block selects block nodes with transaction authority based on certain consensus mechanism. Such node will put the hash value of the previous block, current timestamp, valid transaction within a period and Merkle tree value etc. into a package and broadcast in the whole network. Since each block is connected to the previous blocks by cryptographic proof, once a blockchain is long enough, it is not possible to modify the transaction content in one historical block unless all the transaction record and cryptographic proof of all the previous blockchains are restructured. In this way tampering is prevented.

Ledger shared by the network: In the typical blockchain network, each node stores the complete ledger of all historical transaction records in the network and the ledger storage on each node is consistent. To tamper or attack the ledger data on some specific nodes won't affect the security of the total ledger. Besides, there is no centralized server in the network, all nodes are connected by a peer-to-peer way, hence there is no single port of attack. During this process, prevention of double spending is achieved by the publicly-shared ledger.

Asymmetric cryptography: In the typical blockchain network, the account system comprises of public key and private key in asymmetric cryptography algorithm. The assets in public key can't be located without the private key.

Open source code: The consensus mechanism and rules etc. in the blockchain network could be verified by consistent open source code.

1.2 Blockchain 2.0 – smart contract

Since digital currency such as bitcoin is getting more popular from 2013, people started to be aware of the value of blockchain technology. Some tried to use it in fields other than digital currency, such as distributed ID authentication, distributed domain system, distributed autonomous organization etc. All these are called DAPP (distributed application). It is quite difficult to build DAPP by blockchain technology from the scratch, but different DAPP share many components. In blockchain 2.0 people try to build a sharable technical platform to provide BaaS for developers, thus increase the transaction speed tremendously, reducing resource consumption to a great extent.PoW, PoS, DPoS and several other consensus algorithms are compatible, which simplifies the DAPP development. There are key features of blockchain .

Smart contract: The application in blockchain system is encoded automatic-run business logic, usually with its own tokens and specific programming language.

DAPP: the applications including user interface, includes but not limited to all kinds of encrypted currency, e.g., Ethereum Wallet.

Virtual machine: It means to run the code after smart contract is encoded, which is perfected by Turin.

1.3 Blockchain 3.0 – next-gen Internet

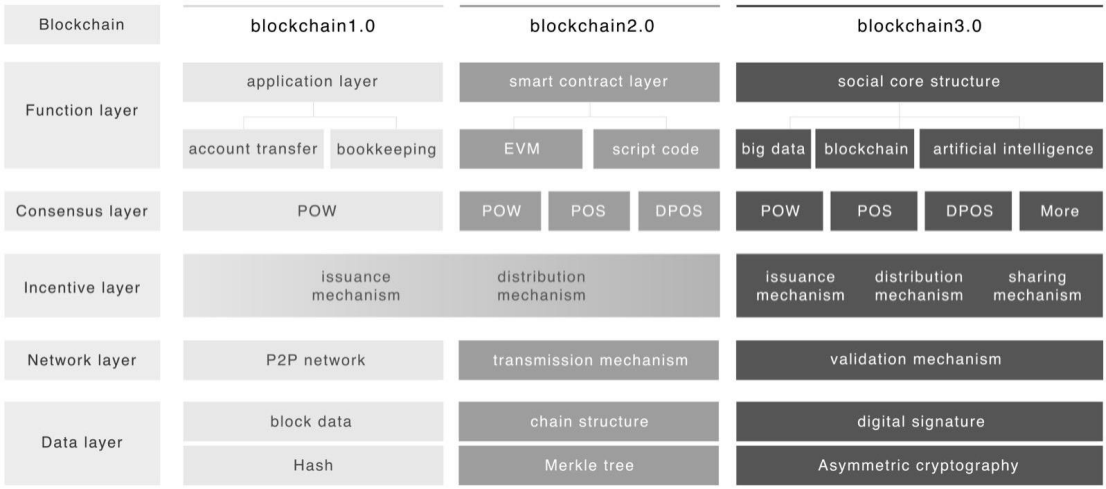
The blockchain is characteristic of decentralization, de-crediting, anti-risk and anti-privilege, by means of peer-to-peer trust, avoiding interference by intermediaries in value transfer, without resort to the central server. With greater efficiency of value exchange and cost reduction, the blockchain is playing increasingly important role in trust building, network ecosystem restructuring and value Internet creation.

On one hand, with the further development of Internet plus, big data, cloud computing, Internet, next-gen mobile communication, artificial intelligence is getting more and more important, and the value created by Internet is rapidly growing. How to improve the transfer and exchange of data information and other values on Internet has become an issue desperately to be solved. The decentralized and anti-tampering blockchain could be a good solution.

On the other hand, with the further development of blockchain technology and application, blockchain 2.0 that features smart contract and DAPP is not only a structure system to support all kinds of typical industrial applications. Blockchain technology is influencing organization, enterprise, society etc., and will definitely change people's way of living tremendously.

Since it provides solution to valuable information transfer and decentralization, blockchain is regarded as the most groundbreaking innovation ever since the invention of Internet, or "next-gen Internet". New technologies will push the society into blockchain era, or blockchain 3.0. More and more enterprises truly understand

the great power of blockchain and develop business scenarios in various industries and fields.



2 Introduction of Public Financial Trade Chain

2.1 Blockchain and big data

Blockchain is a all-history database storage technology that can't be tampered. The gigantic block data sets cover all the transactions in the history. The rapid application development of blockchain has turned to an increase of data scale,while the data fusion of blockchain in different business scenarios further increases the data scale and diversity. Blockchain can guarantee a complete ledger, however, the statistic and analytical ability of the data in ledger is weak. Big data can exactly complement with blockchain and improve the blockchain data value and use scenarios, since its features massive data storage technology and flexible and efficient analytical capability.

The trusted, secure and tamper-proof blockchain can free more data and promote

a huge growth of data. The traceability enables each step of data process (i.e. collection, transaction, circulation, calculation and analysis) being kept in blockchain, brings unprecedented credibility to the data quality, and guarantees the data analytical validity and the data mining performance. Blockchain can further regulate the use of data and authorize specifically. The masked data transaction and circulation is helpful in breaking the information island, building data horizontal circulation mechanism, and form global data transaction scenario step by step based on the value transfer network of blockchain.

2.2 Background of financial industry

With the development of Internet, informatization, networking and digitalization have changed the traditional finance and expanded its scope far beyond the original content. Fintech is shifting from the application level such as mobile Internet, big data and cloud computing to the innovative level such as blockchain and other infrastructure technologies. Fintech is reshaping the financial industry ecosystem dramatically. It is generally accepted that finance is not possible without technology. The tremendous strategic value of blockchain has drawn attention from the financial sector globally.

Financial institutions is reforming the business with the help of state-of-the-art technologies, splitting traditional banking, securities and insurance business, and offering more accurate and efficient financial service. The industry is no longer divided by operation products but by operation models. Traditionally it has five types of operation products (banking, securities, futures, insurance and fund), while the modern finance is categorized into three types by operation models (deposit and loan, investment and insurance) under the influence of Fintech and mixed-industry operation.

Finance has a much higher dependency on data than other industries, and is much easier in monetization of data. The top leading financial data companies in the

world are dedicated to provide real-time data and financial analysis to various investors. Compared with other industries, financial data has better logic, and higher demand in security, stability and instantaneity, and has reshaped the competition in financial section from processes such as data mining, data management, data analysis and data use.

The development and application of cloud computing, big data, artificial intelligence, blockchain and other emerging technologies has great impact on the service model of financial institutions, and drives the industry essentially. Cloud computing, big data, artificial intelligence depend on and facilitate each other. Assuming that big data is a gold mine, financial cloud is a mine shaft. The mining efficiency of gold depends on the safety and reliability of the mine shaft. Artificial intelligence needs massive high-quality training data to feel, recognize, analyze and predict the world, while on the other hand, artificial intelligence could promote the development of big data, improve the speed and quality of data collection and treatment, and facilitate the development of big data industry. The decentralization and distributed ledger of blockchain will essentially change the financial service mechanism.

2.3 Pain points in the market

2.3.1 Credit investigation issues

In a market economy society, the obligation principle is usually implemented by custom, law or contract. However, it happens from time to time that people violate such principles, and such behaviors are hard to stop or correct in the process. Individual's credit is a serious issue in the financial industry. The unreliable tampered fake data will provide no reference to following financial behaviors, and might affect the judge of various financial scenarios and result in financial loss or financial safety. The credit issue of some important enterprises or institutions is even more serious in some financial transaction or data, and might threaten the financial system.

2.3.2 Information asymmetry issues

Information asymmetry is prevalent in global financial market. For example, either investing in primary market or secondary market, investors who have access to more accurate information as early as possible will enjoy first-mover advantage and benefit from the return. Internet finance is changing our lives unprecedentedly. However, there is risk along side with convenience. One of the important reasons is information asymmetry. As we all know, both Internet and finance are professional and complicated, thus vague in nature. Some Internet financial products are deliberately designed in a even vaguer way, and the discreteness of online transaction further worsen the information asymmetry.

Finance is a credit-based circulation of capital. There is no good credit unless the market participants possess good amount of information. Theoretically, financial institutes have much better advantages in getting information than financial consumers. It is hard for financial consumers to collect complete information on product innovation, product pricing or risk control from financial institutions, especially when the latter defer or refuse to disclose relevant information to protect its own benefits. Empirically, serious information asymmetry issues in financial activities might be risks. There are two things to notice in the global financial crisis from 2008 to 2009. The first one is the complicated financial derivatives from Wall Street worsened the information asymmetry between financial institutions and financial consumers, caused serious loss for consumers and put institutions into crisis. The second one is financial regulation in most countries focused on prudential supervision, targeted at maintaining the stability of financial institutions and financial systems, ignored the fairness and transparency in financial market, and ignored the protection of financial consumers' rights.

2.3.3 Cost issues

Payment and clearance: The payment and clearance of the transaction in modern business is done through the bank system. Procedure in such traditional way is complicated, several stakeholders are involved such as opening bank, counterparty, clearing house, oversea bank (agent bank or oversea branch of domestic bank). Each institution has its own accounting system, an agent relationship has to set up among each other, each transaction has to be recorded in the bank as well as cleared and reconciled with counterparty. The lengthy process is high in cost.

Assets management: equity, bond, bill, beneficiary certificate, warehouse receipt and other assets are managed by different intermediaries. The processing fees in each intermediary raise the cost of such transaction.

Securities: Several processing fees are included in the issuance of securities, such as underwriting fee, sponsor fee, intermediary charge, printing cost, advertisement and publicity expense. The procedure is lengthy, and the cost for back-middle offices in financial institutions is raised.

User identification: It is hard to have efficient interaction of user data from different financial institutions. The repetitive identification cost more, and there is risk of ID information leakage by some intermediaries.

2.4 What is Public Financial Trade Chain

Public Financial Trade Chain is a global financial trade cloud smart platform built by Public Financial Trade Chain Foundation. It takes PFT Token (hereinafter referred as PFT) as media, uses blockchain technology, integrates the application and business scenarios of financial ecological chain, utilizes smart contract and Token system, targets at decentralized, true, fair and transparent global financial trade data industry, brings value to the financial trade data by blockchain technology and application, and provides database-generated reference for those who have financial

behavior need.

Technically, Public Financial Trade Chain is a decentralized trade data hub based on the blockchain concept. Such data hub is running on the proper agreement of Public Financial Trade Chain. Open data from any financial institution can be collected onto Public Financial Trade Chain. Thanks to the clear traceability and tamper-proof blockchain, value input/output service of trade data can be offered.

Based on blockchain technology, a decentralized financial ecological chain open platform service is provided. It is a fair data guidance service and monetization scenario for all financial trade participants. Profit will be made by running the blockchain ecosystem and possessing Token.

3 Application scenarios of Public Financial Trade Chain

The application scenarios of Public Financial Trade Chain can be categorized by service content. The requirements and challenges on blockchain technologies are different in those scenarios, Public Financial Trade Chain will provide technologies and solutions accordingly.

3.1 Financial trade data community

Finance is one of the most popular industries in the world. The huge amount of financial institutions and financial transactions generate massive commercial values from the transaction data. Such user demand will drive Public Financial Trade Chain into a financial trade data community. The value or potential of the community will continue to grow with the financial industry.

The proof of existence (PoE) has been existed in mathematics for a long time. The blockchain technology is kind of customized to solve this issue. The fundamental principle of PoE is to run Hash calculation for the documents to be stored, and then store this Hash value into blockchain. Since blockchain stores all the confirmed transactions and Hash value is unique, it proves the existence of specific document.

Considering the PoE function of blockchain, Public Financial Trade Chain can justify the data ownership of financial trade data. The massive amount of financial trade information will be formed into a decentralized data community by blockchain and big data technologies. It accepts the financial trade information feeds from contributors, compares the trade data in this process, stores true information permanently since blockchain is tamperproof, and inspire contributors with certain mechanism. Finally, it generates a commercial application for individuals and institutions to retrieve trade data and access special data on Public Financial Trade Chain. Such community is built by and serves all the people, all the data information are true, effective and permanently stored.

3.2 Financial assets management platform on the chain

All kinds of financial assets, such as equity, bond, bill, beneficiary certificate and warehouse receipt, can be integrated into Public Financial Trade Chain and become digital financial assets on the chain, so that asset owner can initiate transaction without intermediary. This is possible through the cooperation with financial institutes (e.g., bank, security company, insurer), which play role as trustee to ensure the validity and compliance of the assets. Meanwhile, it builds a bridge between the trustee and distributed ledger so that distributed ledger platform could visit the trusted assets in the trustee securely. Besides, assets issuance can be done confidentially or publicly as needed.

3.3 Customized financial trade reference model

Referring to the PoE issue of blockchain and the massive true trade data of stock, foreign exchange, future, spot etc. in Public Financial Trade Chain, people who need data could pay to call historical trade data, customize financial trade reference model by smart technology, analyze historical trade trend and simulate the current trade behavior.

3.4 ID authentication, recognition and interaction system

Almost all the financial institutions in the world are strictly regulated, one of the policies is “know your customer” (KYC) in service. Traditionally, it is time-consuming and low-efficient since there is no technology to validate customer’s identity automatically. In traditional financial system, users’ ID and transaction records from different institutions cannot be tracked in a consistent or efficient way, which is challenging for regulation. With the help of blockchain technology, Public Financial Trade Chain can easily manage digital ID information efficiently, create smart interaction system between customers and institutions based on huge amount of true transaction data, improve the customer identification efficiency and reduce the cost without compromising customers’ privacy.

4 Token

4.1 Introduction of token

PFT Token (hereinafter referred as PFT) is a digital encrypted virtual currency for financial trade information data, community incentive mechanism and rare trade data contribution behavior. It is based on blockchain and smart contract technology.

PFT provides running media as Token on the financial trade data platform built by blockchain.

4.2 Function of token

On Public Financial Trade Chain, all the contributions will get PFT incentive, while any resource consumption will use PFT.

PFT incentive is received by contributing weights in the consensus mechanism, and PFT use is up to how much resource is used.

PFT is a criterion to weigh the value transfer, as well as a fundamental asset on Public Financial Trade Chain.

4.3 Mechanism of token issuance

Total issuance of PFT: 100 million pieces
Including:
Privately Offerred Fund: 40%
Founding team and developing team: 10% (restricted to 4 years)
Community incentive, global promotion and cooperation incentive: 10%
Public Financial Trade Chain Foundation: 20%
Project reservation: 20%

5 Public Financial Trade Chain Foundation

5.1 Set up of Public Financial Trade Chain Foundation

Public Financial Trade Chain Foundation will be dedicated to developing Public Financial Trade Chain, promoting transparent governance, and maintaining the safe

and coordinated development of Public Financial Trade Chain ecosystem.

5.2 Organization of Foundation

The governance structure of Public Financial Trade Chain Foundation covers the procedures and rules for regular work and special cases.

5.3 Committees and their functions

Executive committee

Research and make long-term plan, develop regulations and management rules, conduct feasibility study and approval of new projects, and manage regular work.

Risk control committee

Research and make risk control strategy, develop risk control standard, check general operation risk, convene project risk meeting and release the result.

Remuneration and HR committee

Develop and modify the remuneration and incentive plan, check institution and position setting, hire staffs.

Audit committee

Audit the operation, finance and code.

6 Risk disclaimer

1) This purpose of document is to provide information to specific party who wish to have access the project information. It neither serves as guidance for any investment, nor as contract or promise of any form.

2) Once the participant is involved in the project development, it is regarded that he/she acknowledges and accepts the risk of the project, and agrees to take any consequence personally.

3) The project team clearly states that no return is guaranteed and the team won't be responsible for any direct or indirect loss caused by the project.

4) The Token in this project is a medium of exchange in the platform operation and development. It doesn't represent equity of project, right of yield or right of control.

5) Considering the uncertainties of encrypted digital currency (including but not limited to the general policy to regulate digital currency in different countries, incentive competition in the industry, technical vulnerability of digital currency), we are not sure the project will be successful. The project might fail, and the Token in this project might return to zero.

6) Although the team will spare no efforts to solve the problems that might arise in the project, the policy uncertainties exist in the future. Make sure you are familiar with relevant aspects of blockchain and fully aware of the risks before you support or

participate in the project.

If you'd like to learn more about our platform, share your suggestions, or have any other questions, reach out to us at contact**@pft.io**