Number Chain white paper

(English version)

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Contents

一、Background introduction

1.1 Blockchain: The Fourth Industrial Revolution

As Klaus Chwab, Founder and CEO of the World Economic Forum, puts it, "One of the main characteristics of the Fourth Industrial Revolution is that it does not change what we do, but change ourselves."

The steam engine propelled the first industrial revolution. Then power, assembly lines and other mass production technologies brought about the second industrial revolution. Then, computer technology and microelectronics technology promoted the third industrial revolution.

Now, amazing innovations, including the Internet of Things, genetic engineering, 3D printing, artificial intelligence, driverless cars, robots and smart devices will bring forth the fourth industrial revolution, the era of Industry 4.0.

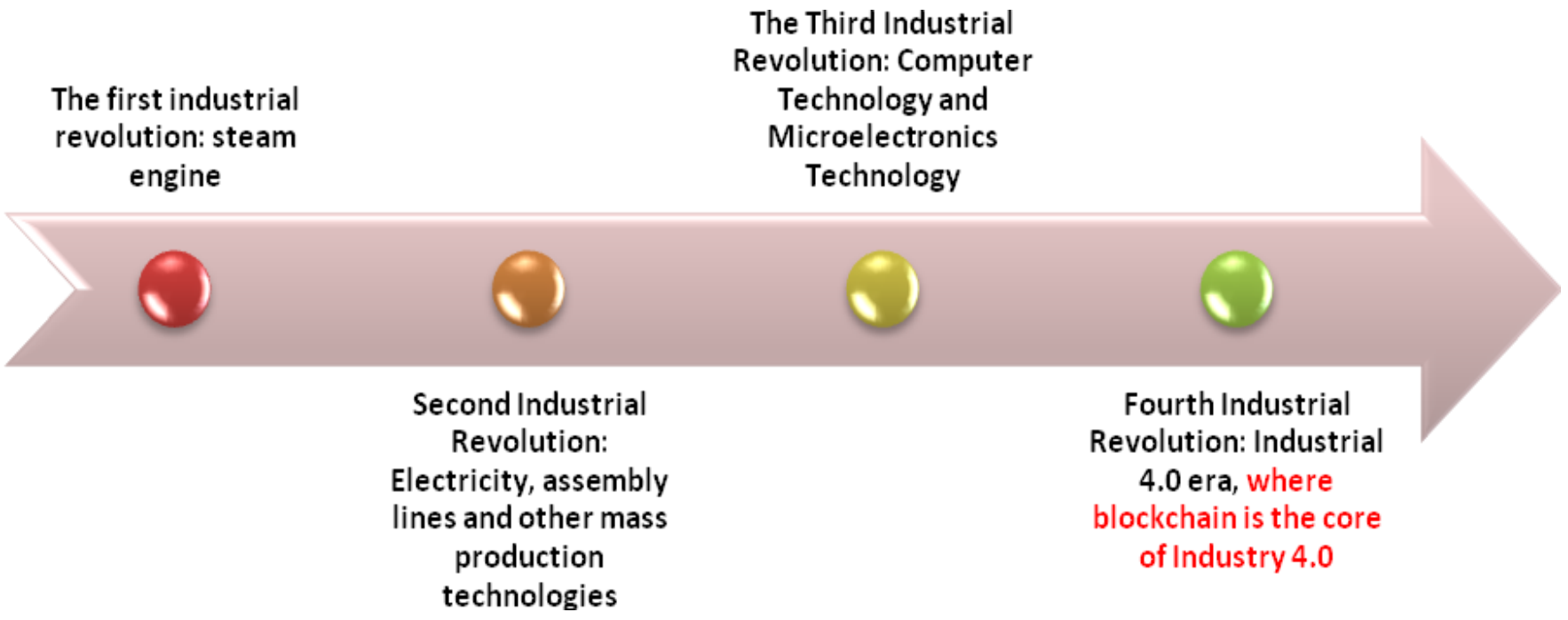


Figure: the course of the industrial revolution

Blockchain is the core of Industry 4.0

The fourth industrial revolution brought about all-round changes in human history. In essence, this revolution is changing humanity itself.

The Fourth Industrial Revolution is profoundly transforming everything around us and even our way of life. This revolution is expected to create greater efficiency in all industrial fields and bring the greatest benefits to mankind. However, to be successful,

the Fourth Industrial Revolution must have an open and borderless payment agreement. This agreement is bitcoin and blockchain.

Bitcoin and its potential blockchain technology is another important technological innovation. Indeed, as said, "Blockchain is at the core of the Fourth Industrial Revolution."

These new technologies are also tremendously affecting the economy and industry. For example, the advent of Bitcoin reveals how outdated banking and legal currencies are.

1.2 Blockchain features

Blockchain is a shared distributed database technology. It is also a new application mode of computer technology such as distributed data storage, point-to-point transmission, consensus mechanism, and encryption algorithms. Although the wording of one sentence in the blockchain in different reports is different, the following five technical features are consensus.

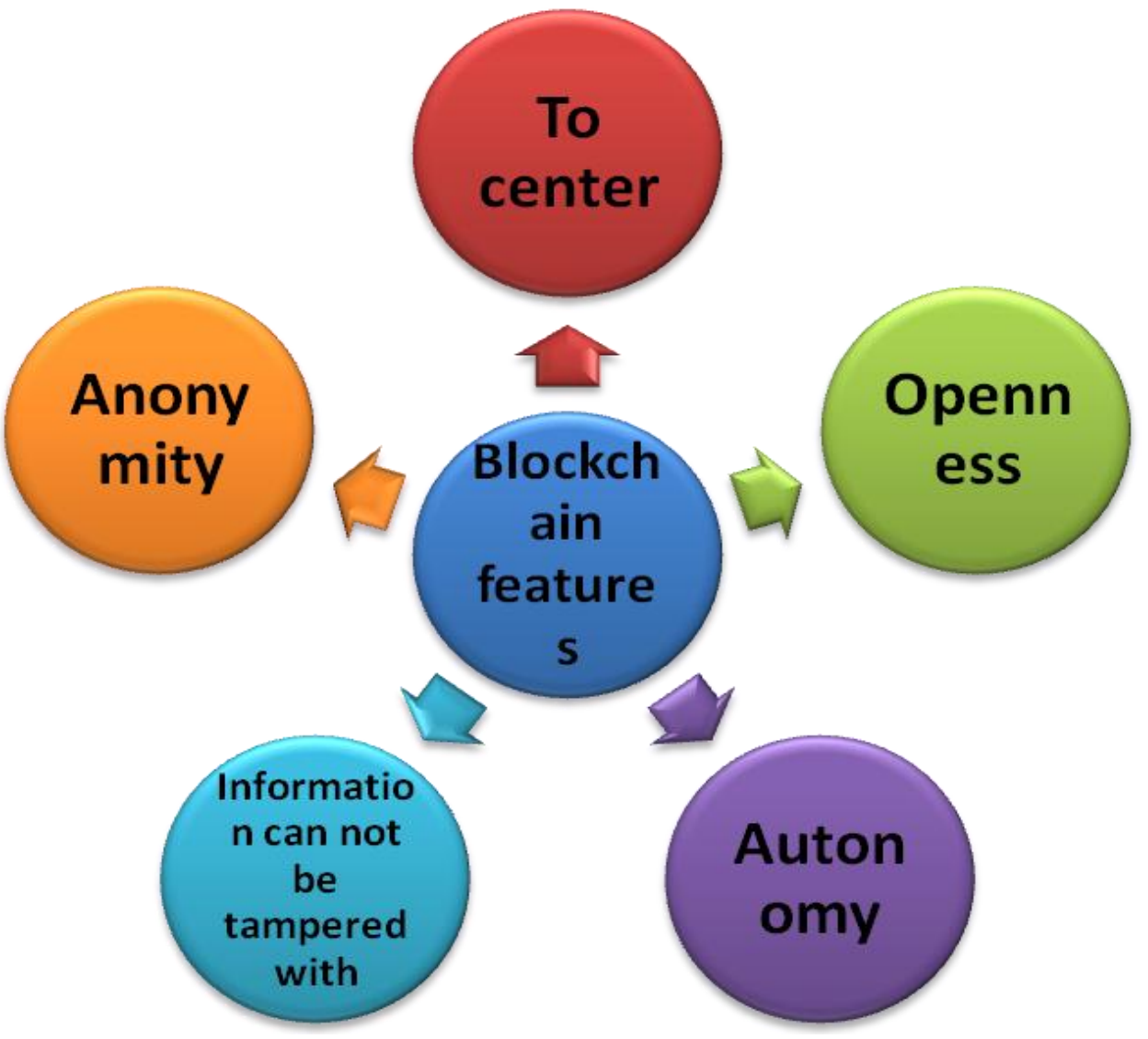


Figure: Blockchain features

1. Decentralization

Due to the use of distributed accounting and storage, there is no centralized hardware or management organization. The rights and obligations of any node are equal. The data blocks in the system are maintained by nodes with maintenance functions in the entire system.

2.Openness

The system is open. Except that the private information of the parties to the transaction is encrypted, the data of the blockchain is open to everyone. Anybody can query the blockchain data and develop related applications through the open interface. Therefore, the entire system information is highly transparent. .

3. Autonomy

The blockchain uses consensus-based specifications and protocols (such as a set of open and transparent algorithms) to allow all nodes in the entire system to exchange data freely and securely in a trusted environment, making the trust of "people" changed to right. Machine trust, no human intervention does not work.

4. Information can not be tampered with

Once the information is verified and added to the blockchain, it will be stored permanently. Unless more than 51% of the nodes in the system can be controlled at the same time, the modification of the database on a single node is invalid, so the data in the blockchain is stable. Sex and reliability are extremely high.

5.Anonymity

Since the exchange between nodes follows a fixed algorithm, the data interaction does not require trust (the program rules in the blockchain will automatically determine whether the activity is valid), so the counterparty does not need to make the other party's own trust through the public identity. The accumulation of credit is very helpful.

1.3 Global entertainment market

As a new type of entertainment, the global entertainment market will surely become a new industry with great potential. Entertainment is an eternal human need, especially as people's leisure time and disposable income increase, the demand for entertainment will be even more exuberant.

1.3.1 Traditional game industry's predicament and the current game industry chain

The quality of the game depends primarily on the content developed by the developers and on the operational services provided by the distributors. However, channel operators and clearing houses make up the bulk of the profit, and publishers and developers at the source can have very limited benefits And it takes the highest risk, which is the root cause of the unhealthy and incompleteness of the game industry chain, burying a lot of excellent games, and also wasting the resources of developers and publishers.

In the field of game development, on the one hand, small and medium-sized CPs cannot achieve the improvement of game quality and the pursuit of IP because of financial pressure. It is difficult to achieve good ideas, or they are forced to give up before they are realized; on the other hand, they are Many small and medium-sized publishers are looking for good games to go around but they can not do anything.

1.3.2 Prospects and Status Quo of the Gaming Industry

According to statistics, in 2016 the global game industry output value exceeded 100 billion US dollars for the first time, surpassing the sum of movie and music industry. It is estimated that by 2020, the global gaming industry will reach US$129 billion in output value. Mobile games will account for 51% of the industry's share, surpassing the output of traditional gaming platforms such as PC games and video game consoles. In 2016, the gamers in China reached 600 million and the market size reached 24.6 billion U.S. dollars, surpassing the second U.S. $ 24.1 billion. Asia Pacific accounted for 46% of the global game market, with 24% each in North America and Europe. Of these, 93% of Chinese gamers went to games developed by game companies in China, while 56% of gamers in the United States went to US games and 36% % Of European gamers spending to European games. In addition, 70% of the global game industry's acquisitions have been completed by Chinese buyers since 2015. As a big player in the mobile game industry, Chinese companies will inevitably have to take on the role of the leading industries in their future development. NUBC, which combines blockchain technology, has emerged.

According to a recent report released by Digi-Capital, an investment bank, global game software and hardware revenues will exceed $ 150 billion by 2017, with software revenue accounting for three-quarters of the total revenue. It is estimated that by 2021, game industry revenue will increase To 200 billion U.S. dollars. This is a huge, trend-fighting market that is still growing rapidly. Among them, PC games, console games, web games and mobile games have become the major areas of user aggregation. Thanks to the large-scale popularization of smart mobile devices, mobile games have become the most important market in the game industry.

1.3.3 Existing game industry problems

Online entertainment, whether it is in the Chinese game market, or in the global game market, there are more or less some limitations, mainly in the following areas of pain points:

Figure: the pain point of the game industry

1) Game core value black box operation cannot prove fairness

Almost all online games exist for users to obtain game props, game rewards and various types of lottery activities. However, in the existing game development and operation system, these core numerical algorithms are not disclosed, opaque or even not Justly, game developers and carriers use black boxes on their servers.

2) There is no match between players

Game users will try a variety of different types of games, of which common are: chess, MMO, MOBA, athletics, gambling, etc., the numerical balance of various games and the fairness between the players, the game user is very concerned Content. Sometimes players are in an unfair and irreconcilable environment. Users cannot search and research and bring game and competitive losses, causing users to lose.

3) Inefficient pipeline promotion

On the one hand, the game promotion pipeline connects the game operator, on the one hand, recommends the game to the game user and derives benefits therefrom; however, since the user top-up data is stored only at the game operator server, the quality evaluation and revenue acquisition of the game promotion pipeline Depending on the "trust relationship" with the game operator, the game promotion channel can not and can not obtain the true promotion

efficiency feedback, which leads to the reduction of the promotion efficiency of the game pipeline and can not be further optimized and transformed.

4) Resource mismatch

In the field of game development, on the one hand, small and medium-sized CPs cannot achieve the improvement of game quality and the pursuit of IP because of financial pressure. It is difficult to achieve good ideas, or they are forced to give up before they are realized; on the other hand, they are Many small and medium-sized publishers are looking for good games to go around but they can not do anything.

5) The payment cycle is too long

After the game is released, the collection period is too long. From the user's recharge to the issuer's receipt of payment, it is generally at least 4 months, usually 5-6 months or even one year. Publishers, CP funds take too long. Good game development time up to 1-2 years, while traveling

After the play on-line fund recovery has reached 5-6 months.

6) The game tokens do not communicate

Due to the intercommunication among the game tokens and the large number of game companies, on the one hand, users' top-up in the game can not be universal and often results in waste; on the other hand, it is more difficult for the game user to make a second conversion, and the user of one game There is a big barrier to moving to another game user.

7) IP lacks protection

The homogenization of games and the proliferation of plagiarism have resulted in the appearance of a number of skin-change versions of a good game, which has dragged down the development level of the entire game industry. The quality of similar games is also too lopsided. In the absence of IP protection, there is a large amount of plagiarism in the use of IP.

8) The chaotic, third-party trading platform

With the development of the game industry, trading needs of games and equipment, account numbers and tokens are in hot demand. Third-party virtual game content trading market is gradually forming a scale. However, due to the lack of mature third-party trading platforms, these types of transactions are often completely independent of the game system, with the problems of high transaction costs, difficult implementation and easy disputes.

The number of game users in China has reached 566 million, and we believe that the economic value of the above game industry issues is as high as 45% of the total industrial output

value. In some sense, the problems that these industries care about restrict the further improvement and evolution of the industry. In recent years, the rapid development of blockchain technology has brought opportunities for the game industry to change.

1.3.4 Solution

With the in-depth understanding of the game industry and blockchain, we have found that such designs are unreasonable. The reason is that the transaction costs involved are very high, and the execution time can not meet the needs of general games, and Ethereum The stability of the network is also worrying. In view of this, NUBC can really serve the game industry came into being. In keeping with the rights and interests of its partners and the feasibility of the project, NUBC has adopted two of the most established mainstream technologies, Ethereum and Hyperledger Fabrics.

NUBC is a decentralized shared community based on the game industry. It focuses on an ecosystem built by small and medium-sized publishers, small and medium-sized CPs, all game players, IP producers, channel distributors, and collaborators. At its core is a decentralized account and settlement system based on blockchain technology that uses NUBC coins as settlement tokens to create a common digital token, NUBC, in every game.

二、Introduction to Number Chain

2.1 What is Number Chain?

Number Chain, Chinese Number Chain, or NUBC for short, is a gaming platform based on Ethereum, distributed, and using smart contracts to ensure the fairness of games. The network-wide consensus and non-disruptive features of the data block chain make NUBC distinguish itself from traditional game platforms. It completely eliminates the black box operations, inequality between users, and opaqueness of game industry chain data in traditional games.

2.2 Platform Description and Vision

In Number Chain's global online entertainment platform of blockchain technology, because of the open, fair and equitable nature of this platform, users and the platform can communicate with each other without any data deletion, or transaction records cannot be deleted. Characteristics, to establish a fair, just and equal game ecosystem.

For the platform's vision: For game operators, to help game operators in the game popularity dying completely retain the user's personal data, the next game immediately after the transfer to the new game. For game users, gamers can transfer the game's personal connections to any game without losing them.

2.3 NUBC platform advantages

2.3.1 Open, fair and just

NUBC will openly disclose the core data in a publicly available core of all running games for guaranteeing fairness, including game prop bonus probability, game random number acquisition, player match and balance values. Compared with server-side data manipulation in traditional games, NUBC innovatively introduces the form of Qaclize (External Information Intermediary) to generate random numbers, and data is transmitted through encrypted channels so as to be truly fair and just.

2.3.2 Security and stability

Private key security

NUBC users only need to enter the address of Ethereum wallet, you can transfer through the game to recharge or betting and other activities. The entire betting process does not require the user to provide any private key and password, and no user account sensitive information will remain on your computer or browser, and will not spread on the Internet to achieve the best security protection.

Terminal Security

NUBC uses HTTPS protocol, which is a secure hypertext transfer protocol. It uses secret channels to encrypt and transmit information. It has the functions of authentication, information encryption, and integrity check, which can effectively prevent information eavesdropping, information tampering and information hijacking. .

Team experience

The NUBC development and operations team consists of professionals with years of experience in network security and tens of millions of users of gaming platform operations to ensure the operation of the platform is safe and stable.

2.3.3 Smooth gaming experience

NUBC is based on Ethereum for development, but the mere Ethereum Dapp still has slow transactions and can not meet and complete large-scale, graphical, multiplayer online game requirements. Therefore, the NUBC team gives full play to its extensive experience in the

field of platform construction and adopts a “deep coupling” approach. It builds information that does not affect fairness in the traditional way, and handles core data through smart contracts on the memory block chain. Seamlessly call and combine, thus achieving the perfect effect of ensuring fairness and ensuring a smooth gaming experience.

2.3.4 multi-terminal, multi-language support

Currently, NUBC mainly focuses on the English version, and we will soon launch other languages such as Russian, Korean and Japanese to meet the needs of users in different regions. At the same time, we will also launch multi-terminal version of the support, including: WEB, mobile APP (IOS, ANDROID), PC.

2.3.5 a variety of virtual currency support

NUBC will use ETH as the base platform for circulating currency. After the ICO is completed, it will support the NUBC Token of the platform itself, and will continue to support other mainstream virtual currencies in succession. Expected to include: BTC, BCH, LTC, ETC, EOS, XRP and so on.

At the same time, taking into account the properties of the NUBC Globalization Platform and the compliance requirements of different countries and regions, NUBC does not support the reimbursement and circulation of legal tender in any country.

NUBC will also establish a new token access mechanism to evaluate the use of new blockcoin currency for the circulation of its blockchain assets in the platform users and take full account of its security to determine whether the access.

Figure: The advantages of the NUBC platform

2.4 Application scenario

2.4.1 game digital token settlement platform

With NUBC currency as the settlement currency, it can be recharged directly into each game to settle and become a unified token for each game. The purpose of using NUBC is to serve small and medium-sized publishers, channel distributors, and developers in the mobile game industry. At the same time, it radiates to game users, provides new digital tokens for transaction settlement, and breaks through the barriers between various roles.

1) Universal Account — Players who use NUBC tokens can automatically obtain the unique platform identity, become platform users, enjoy various services, and do not need to repeatedly register between games. You can log in with one click using the platform account., direct access to the game, convenient and quick.

2) Real-time gains - Increase NUBC currency settlement interface in each game, use NUBC digital tokens for settlement, game revenues can be directly obtained in the settlement platform in the form of tokens game revenue share, to avoid the original N + months Payback cycle, the platform can do N +1 or even faster, access to fast cash flow support. You can choose to convert to NUBC tokens for expected appreciation when you settle. And real-time accounting into data.

3) New Distribution Platform — A collection of small and medium-sized channel parties, which will be settled by NUBC currency payment, facilitating promotion and account period control, and will become an important distribution platform for all games.

4) Promotion and User Aggregation - For publishers, they can make full use of the user community in the shared community to promote the game through numerous modes such as promotion, marketing, player promotion, distribution platform, anchor league, and user sharing.

5) Create a new game sharing mode - Game sharing mode, players can use the "one-click sharing" mode to share the game directly to other players, and get shared rewards. Each game has NUBC coin SDK interface, the player once used, automatically become a platform member, to lay a good foundation for game sharing. At the same time platform will be based on the number of users to promote, set the ladder return mechanism. This user will be the preferred NUBC within the game as a settlement, will also form the benefits of mutual communication between users.

With more and more games, distributors, channel distributors, and users joining the digital token settlement system, digital tokens can be applied to various games, breaking the barriers between games, distribution, and channels. Through the operation, the continuous surge of users will also bring more benefits, and finally form a large community for game sharing and communication.

2.4.2 Game crowdfunding

In the community, set up a special platform for crowdfunding. Numerous small- and medium-sized game developers and publishers can use NUBC for crowdfunding through the help of the platform. Players can participate in crowdfunding, participate early in game development, experience games earlier and receive game tokens. Crowdfunding games will require access to the NUBC token settlement method. Through this method, small and medium-sized developers can not only obtain a more relaxed R&D environment, but also can interact with users in real time to make game products that truly meet the needs of users.

For the platform, in this way can be extremely rapid expansion of products containing digital token settlement technology, in order to follow the progress of faster settlement changes.

2.4.3 Game Distribution Platform

Bring together many small and medium-sized channels to form a new game distribution platform. Settlement by NUBC settlement method, and get support from numerous channel platforms in the form of donations and subsidies in the earlier period, and quickly allow channel providers to promote digital token settlement, allowing more products and users to use digital tokens to expand their scope of application. . NUBC serves as a universal token between platforms, while NUBC's account system serves as a general account for all games throughout the platform.

As players rely heavily on the use of NUBC and the account system, more and more channels will join the league and become an important distribution platform for community game distribution.

2.4.4 IP co-creation plan

Create a bridge between IP creators and users through the IP Collaborative Platform. The platform will cooperate with many IP companies and teams, including various types of IP for film and television works, novels, and comics, and provide IP cooperation to game distribution companies and R&D companies to achieve IP value-added games. The IP co-creation platform will provide a negotiation mechanism to both sides to set the value-added game value of the

IP, and adopts a blockchain technology agreement to stipulate the value. It is agreed that the virtual currency can be directly used for batch settlement, conditional settlement, or game play. Income is divided into.

The NUBC community has partnered strategically with a well-known copyright owner in the country and will be offering hundreds of IPs to provide IP collaboration to many game makers and distributors. The IP co-creation model can not only be used in game development but also in the creation of game derivatives. If you need support when developing IP, the community can provide crowdfunding support.

2.4.5 Shadow interaction

Movies and games have become the hottest forms of entertainment for the moment, and their cross-border cooperation shows great market potential. The highly developed cultural industries in Europe and the United States there are many cases of successful linkage of the film. IP, which covers many business models such as movies, games, animations, etc., has gradually become a core factor in becoming a cultural industry in the Internet era. The combination of the market value of China’s online games and the scale of 30 billion yuan in the movie industry will drive the outbreak of peripheral industries to trillions of dollars in the future. scale.

The NUBC sharing community will adopt the method of film tour at the same time to make the style of the TV drama and the game more complementary. This new combination has also changed the layout mode of the film industry. Film and video games to create simultaneously, although the display content has its own focus, but for fans, the entertainment experience can be superimposed, or even upgrade.

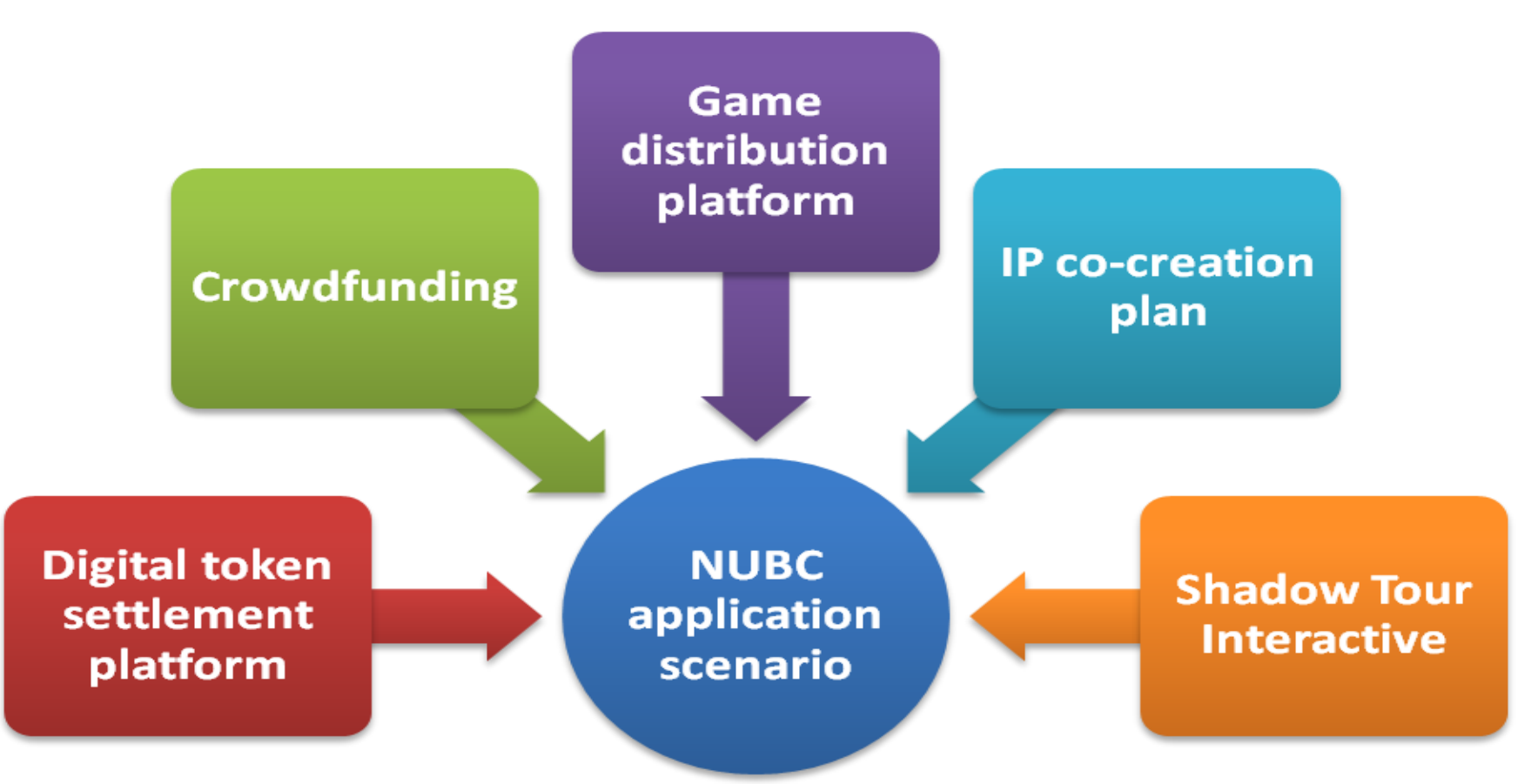


Figure: NUBC application scenarios

2.5 NUBC community and user relationship

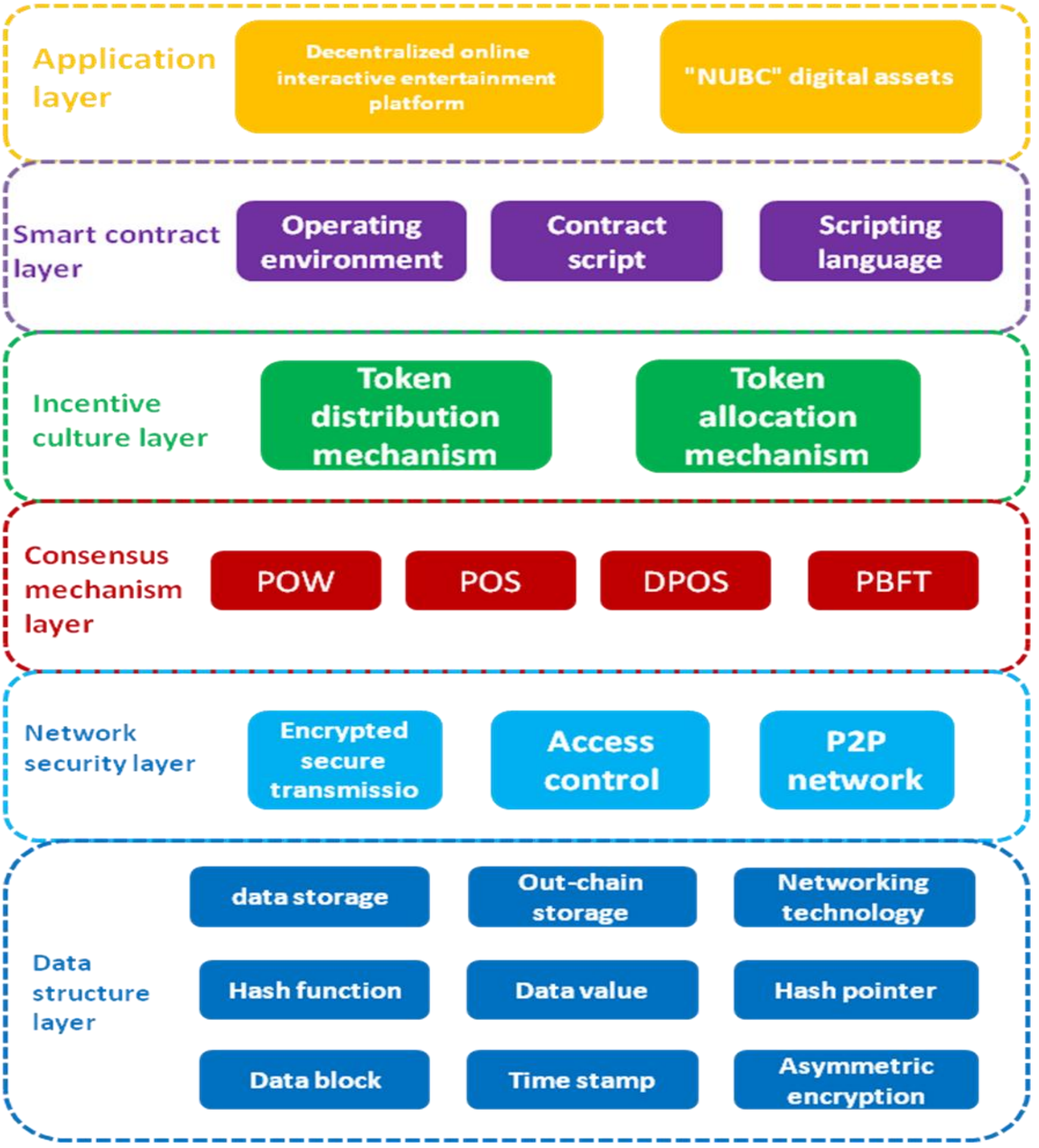
The NUBC community consists of developers, operators, channel partners, players, and collaborators. Through a crowdfunding platform and settlement system, a closed-loop game, entertainment and sharing community will be established throughout the community. NUBC, as a token of interest in the community, is used as a game crowdfunding and NUBC equity sharing.

Developers can crowd-raise through the NUBC community to acquire digital assets for game development and to establish a fully trusted mechanism for sharing with operators and channel operators.

The players in the community after users, you can also enjoy a wide range of services: Have a unified account, a key to enter any game, transaction, without multiple accounts; unified virtual tokens, and common in a variety of related services, can be used directly in games, live, derivatives and so on. At the same time, players can enjoy the benefits of "shared games"; users use digital tokens for settlement in games, in addition to obtaining equivalent tokens, they can also receive additional digital token rewards, which also have liquidity and appreciation. space.

三、Technology Architecture

3.1 Platform framework



The purpose of NUBC design is to integrate and improve based on the script and the original protocol concept in the chain so that third-party service providers developers, merchants, users and users can create any consensus-based, scalable, standardized, fully featured, Easy to develop and coordinate applications.

NUBC builds the ultimate and abstract foundation layer with underlying technology from Ethereum - a blockchain with built-in Turing complete programming language that allows anyone to create contracts and decentralize applications and set up their freely-defined Ownership rules, trading methods and state transfer functions. In the NUBC system, states are made

up of objects called "accounts" (each account consists of a 20-byte address) and a state transition group that transfers values and information between the two accounts. Similar to Ethereum, an account in NUBC consists of four parts: a random number, a counter that determines only one transaction per transaction; an account balance; an account's contract code (if any); an account's store Is empty).

NUBC will have two types of accounts: all external accounts (controlled by private keys) and contract accounts (controlled by contract codes). All external accounts have no code, and people can send messages from an external account by creating and signing a transaction. Whenever a contract account receives a message, the code inside the contract is activated, allowing it to read and write internal storage and send other messages or create contracts.

NUBC adopts P2P distributed signature system to ensure security. P2P networks have features such as self-organization, load balancing, fault tolerance, low cost, and high availability. A P2P network made up of a large number of peer nodes can provide tremendous computing power with low cost. The distributed security CA scheme of this project distributes the digital signature calculation originally performed by the high-performance server into the P2P network, and specifically has the following features:

1) Check if the previous block referenced by the block exists and is valid.

2) Check if the timestamp of the block is larger than the last block referenced and less than 15 minutes.

3) Check whether the block number, difficulty value, transaction root, tert-root and fuel limit (many of the underlying concepts specific to Ethereum) are valid.

4) Check whether the workload of the block is valid.

5) Assign S [0] as CBCTE_ROOT of the previous block.

6) Assign TX to block transaction list for a total of n transactions. For i belonging to 0... n-1, a state transition S[i+1] = APPLY(S[i], TX[i]) is performed. If an error occurs in any of the conversions, or if the gas used by the program to perform this operation exceeds GASLIMIT, an error is returned.

7) Assign S_FINAL with S [n] and pay the miners a block reward.

8) Check if S-FINAL is the same as CBCTE_ROOT. If the same, the block is valid. Otherwise, the block is invalid.

3.2 Blockchain function description

3.2.1 consensus mechanism

The consensus mechanism is a core issue of blockchain technology. It determines the block generation rules in the blockchain, and ensures the integrity of the nodes, the fault tolerance of the books, and the robustness of the system. Consensus mechanisms commonly used are PoW, PoS, DPoS, Paxos, PBFT and so on. Different application scenarios based on blockchain technology and the characteristics of various consensus mechanisms mainly evaluate and compare performance and efficiency, resource consumption, fault tolerance and regulatory level.

Consensus Mechanism Function Components have the following features:

a) support for multiple nodes to participate in consensus and validation;

b) Support independent nodes to validate the relevant information submitted by the blockchain network;

c) Preventing any independent consensus node from recording or modifying information in the blockchain system without the other consensus node's acknowledgment;

d) Should have certain fault-tolerance, including non-malicious errors in node physical or network failures, and malicious errors in which nodes have been illegally controlled, and uncontrollable errors in which nodes generate indeterminate behavior.

3.2.2 Smart Contract

Proposed by Nick Szabo in 1995, he gave the definition: "A smart contract is a set of promises that are defined numerically, including an agreement on which contractual parties can enforce those promises." Commitment Definition The nature and purpose of smart contracts. The digital form means that the contract runs in the form of computer-executable code that is executed by a computer or computer network provided that participants agree on the rights and obligations established by the smart contract.

Blockchain-based smart contracts not only take advantage of the low cost and high efficiency of smart contracts, but also avoid the interference of malicious acts in the normal execution of contracts. The smart contract is written into the blockchain in a coded form, and the process of data storage, reading, and execution using blockchain technology is traceable, transparent, and unchangeable. In addition, the state machine system constructed by consensus algorithm of blockchain can make intelligent contracts work efficiently.

The functional components of a smart contract include:

A development of operating environment, including:

1) provide programming language support, if necessary, can provide supporting integrated development environment;

2) support the contract content static and dynamic inspection;

3) provide carrier support, such as virtual machines;

4) For smart contracts interacting with external data of the blockchain system, the scope of influence of external data sources should be limited to the scope of smart contracts and should not affect the overall operation of the blockchain system.

B storage environment, including:

1) Prevent tampering with the contract content;

2) Support multi-party agreement to upgrade the content of the contract;

3) Support writing the contract content into the account book.

3.2.3 Encryption Security Technology

The blockchain uses asymmetric encrypted public-private key pairs to build trust between nodes. The asymmetric encryption algorithm consists of a pair of unique keys (ie, public key and private key). Anyone who knows the public key of the user can encrypt the information with the user's public key and interact with the user to implement secure information. Due to the existence of the dependency between the public key and the private key, only the user holding the private key can decrypt the information, and any unauthorized user or even the sender of the message can not decrypt the information.

The encryption feature has the following features:

a) Support international mainstream encryption algorithms such as symmetric encryption algorithms such as AES256 and asymmetric encryption algorithms such as RSA and ECC;

b) Support China's business secret algorithm, such as SM4, SM7 symmetric encryption algorithm and SM2, SM9 and other asymmetric encryption algorithm;

c) There should be a clear key management scheme to ensure the normal operation of the underlying security mechanism in the blockchain;

d) Encryption algorithms should have the ability to resist cracking. The security of encryption algorithms should be periodically reviewed, if necessary, a higher encryption algorithm is used to solve the computational complexity.

3.2.4 Data Storage

Block data structure In the blockchain, data is permanently stored as blocks. The timestamp of the blockchain solves the sorting problem of the block. When the new block is generated, the hash value of the previous block is calculated and the block cryptography link is realized. Each block records all the transaction information that occurred during its creation. In the blockchain, if there are some strings to be stored, the Json object

can be stored in an extended ledger structure chain. If it is a large multimedia file such as a picture or a video, the hash value of the file can be stored in the chain, The original file can be stored in the cloud using cloud storage.

Data storage features include the following features:

a) Support for persistent storage of book records;

b) support for multi-node has a complete data record;

c) support the provision of authentic data records to authorized persons;

d) Ensure data consistency for each node with the same ledger record.

3.2.5 chain storage

In this system there is a lot of documents, images, video data, not suitable for storage in the blockchain, but in order to ensure data integrity, we use the cash hash encryption algorithm, large files into the hash function, the output of a Fixed-length hash value, and the hash value is stored in the block chain, so that not only ensures the system speed, but also to ensure the safety of large files.

3.2.6 Networking Technology

Networking technology is one of the core technologies in the blockchain. In the decentralized network architecture, the blockchain can not rely on the characteristics of the central network. Blockchain network protocols generally use the P2P protocol to ensure that each computer in the same network is equal to each other, and each node provides network services together. There is no "special" node. Different blockchain systems will make their own P2P network protocols as needed. For example, bitcoin has a bitcoin network protocol and Ethereum has its own network protocol.

3.3 Technical characteristics

The general characteristics of NUBC technology are open, transparent, verifiable, or at least to a certain extent have these characteristics. From the effect point of view, it can not be tampered with and traceable. The project should choose a more open architecture similar to the public chain, because the project requires high privacy of all parties, but there is a strong demand for transparency of the process.

Of course, the project Ethernet blockchain technology 2.0, but from the current technical capabilities and global demand for online entertainment point of view, do not rule out the project will build a new chain and consensus mechanisms, such as NUBC consensus mechanism.

The advantage of doing so is that it will neither rely on a lot of effort to reap the workload of energy as the current Bitcoin blockchain does, but also set the data visibility and impact side within controllable limits. By using big data, the behavior of paying user nodes can be used as the basis for effective judgment, but it is difficult to unify the solution caused by the uncontrollable behavior of nodes such as The DAO. Of course, its own blockchain in the relevant ductility is also more suitable for the project according to their own development needs tailored.

3.4 Technical Description

The NUBC technical team has many years of experience in the development of the Internet and blockchain. In simple terms, NUBC has the following characteristics compared to traditional cross-border transactions:

Safety

NUBC relies on cryptographic verification transactions to verify the identity of the parties involved in the transaction. This ensures that a "false" transaction can not be added to the blockchain without the consent of all parties involved. Each time you want to add a new transaction to the blockchain, you need to perform a complex mathematical calculation: hash calculations, depending on the transaction data, the parties involved in the transaction, and the results of previous transactions. The fact that the existing blockchain relies on the previous blockchain ensures that malicious participants cannot tamper with the transaction history. This is because if you change the previous transaction data, the existing hash value will be affected and cannot be matched with other backups of the ledger.

Transparent

NUBC is essentially a distributed database that is maintained and synchronized by multiple nodes—for example, multiple counterparties that frequently trade with each other. In addition, transaction data must be consistent across parties before it can be added to the blockchain. This means that from a design point of view it is possible to access the same data (in some cases local data within the organization) - thus greatly increasing the transparency of the transaction, while traditional systems rely on multiple “hidden” behind the firewall. "The database is invisible from the outside.

Efficiency Conceptually, maintaining multiple copies of a blockchain database is no more efficient than a single, centralized database. But in the real world, many parties have already backed up databases containing the same transaction information. In many blocks,

the data on the same transaction is inconsistent - resulting in costly and time-consuming reconciliation procedures. The use of distributed databases such as blockchains across organizations can greatly reduce the need for manual reconciliation, thus saving significant costs. In addition, under certain circumstances, NUBC allows organizations to achieve common capabilities and eliminate duplication of efforts.

The alliance chain adopts the pattern of multiple VP nodes. NVP nodes share the work pressure of the VP nodes and undertake to handle API requests and events. The VP nodes need to verify transactions, run codes, record accounts, and reach consensus.

四、Number Chain ecosystem

4.1 Network node

Network nodes supporting the NUBC chain obtain service exchange through the shared hosting cloud service;

All enterprise customers' server host resources or leased cloud host resources are shared for distributed distribution.

Enterprise customers related to big data content will be distributed in the thousands of shared hosts, their hosts will also be responsible for the content of other corporate customers, these data are encrypted to protect data security.

4.2 NUBC Cloud Platform

NUBC core platform for developers to provide a convenient development environment and the underlying interface support, including mobile APP inspection end, WeChat applet landing

Sub-chain management system: sub-chain generation, operation and maintenance of developer information and development project progress management system, commodity unique identity management system, consumer information management system, enterprise information management system

Label Management System: Bar Code, QR Code, 3D Code, RFID Mobile Marketing Public Platform Interface Group Mobile Commerce Platform Common Platform Interface Group

Mobile phone check APP interface group WeChat applet secondary development middleware

4.3 DAPP developer

DAPP developers, who used to be engaged in business service management development or who are interested in expanding the business ecosystem development and technology on the blockchain, have made it easy for developers to blockchain business customization applications with NUBC, Use the latest technology services brand companies, to seize the market opportunities.

Bring together business NUBC application development companies and individuals to create NUBC Academy and Developer Clubs, worldwide touring training and road shows.

4.4 Number Chain's eco-alliance

The establishment of the NUBC Ecological Alliance hopes to achieve two functions:

First of all, the use of blockchain technology and Internet of Things technology, open up NUBC, business, supervise the transaction information between users and businesses, to understand the user to enjoy the service, to reward sources, end-use details records, open and transparent, can not be tampered with , While connecting WeChat, Alipay, PayPal and other payment platforms, as well as WeChat applets and so on platform, greatly enhance the user experience and realism and trust.

Second, NUBC coalition government, high-quality merchants, to create NUBC ecological union, and actively comply with the formulation of national standards. Blockchain technology ensures absolute security of information and provides strong security for NUBC's entire process information management. In layman's talk, building a fair and equitable entertainment environment by building a blockchain alliance network, at the same time profitable platform, to achieve a win-win situation for developers, operators and users.

五、Number Chain Development History and Planning

2017.5 Project establishment and team formation, to complete the main body of corporate operations and team

2017.8 Completed global online entertainment industry research, big data analysis

2017.9 Determine the NUBC base model

2017.10 Proposed Number Chain platform concept

2017.11 The top technical team was set up and the first floor of the blockchain architecture and the first part of the play were completed.

2017.12 Number Chain White Paper Preparation

2018.2 official online line

2018.3 Preparing for Crowdfunding

2018.8 Number Chain platform test version

2018.9 Upgrade and Technical Testing of Server Storage Data Center Completed

2018.10 fficial Launch of Number Chain Platform

六、Introduction to tokens

6.1 NUBC Token Description

Number chain, the English name is Number Chain, NUBC is Number Chain referred to, but also to centralize NUBC settlement tokens.

NUBC is a settlement token implemented on the NUBC platform for the settlement of transactions on the Global Online Entertainment Number Chain platform for entertainment, investing, the exchange platform, and more. NUBC in NUBC system for user transactions provided by the media.

NUBC is the only token of the mother chain of the entire NUBC ecosystem. Any cross-subchain data exchange and asset exchange consume the mother chain tokens. When the ecosystem is formed, cross-chain data exchange becomes a high-frequency event Aspects of the NUBC demand continues to improve. Nubc Token Holders own the right to allocate shares in the direction of the development of the NUBC Parent Chain.

6.2 NUBC Access

1. Others donated to obtain NUBC tokens for exchange by others or exchange.
2. In the application scenario, NUBC tokens are obtained through various activities such as online interactive entertainment.
3. Financing to obtain NUBC tokens through ICO or purchase of original currency.

6.3 NUBC distribution method

With a total of 10,000,000,000NUBC issued, the NUBC Token mechanism is issued for the

first time with a set cap of 20% of the total amount of tokens produced, and 20% of Tokens will be used for public Pre-sale.

1ETH = 80,000 NUBC.

NUBC Token Public Pre-sale •

Expected 2 billion pieces

Lock positions: unlock 50% before going online, the other 50% locked for 3 months

Personal minimum purchase limit: 1ETH

6.4 Fund raising instructions

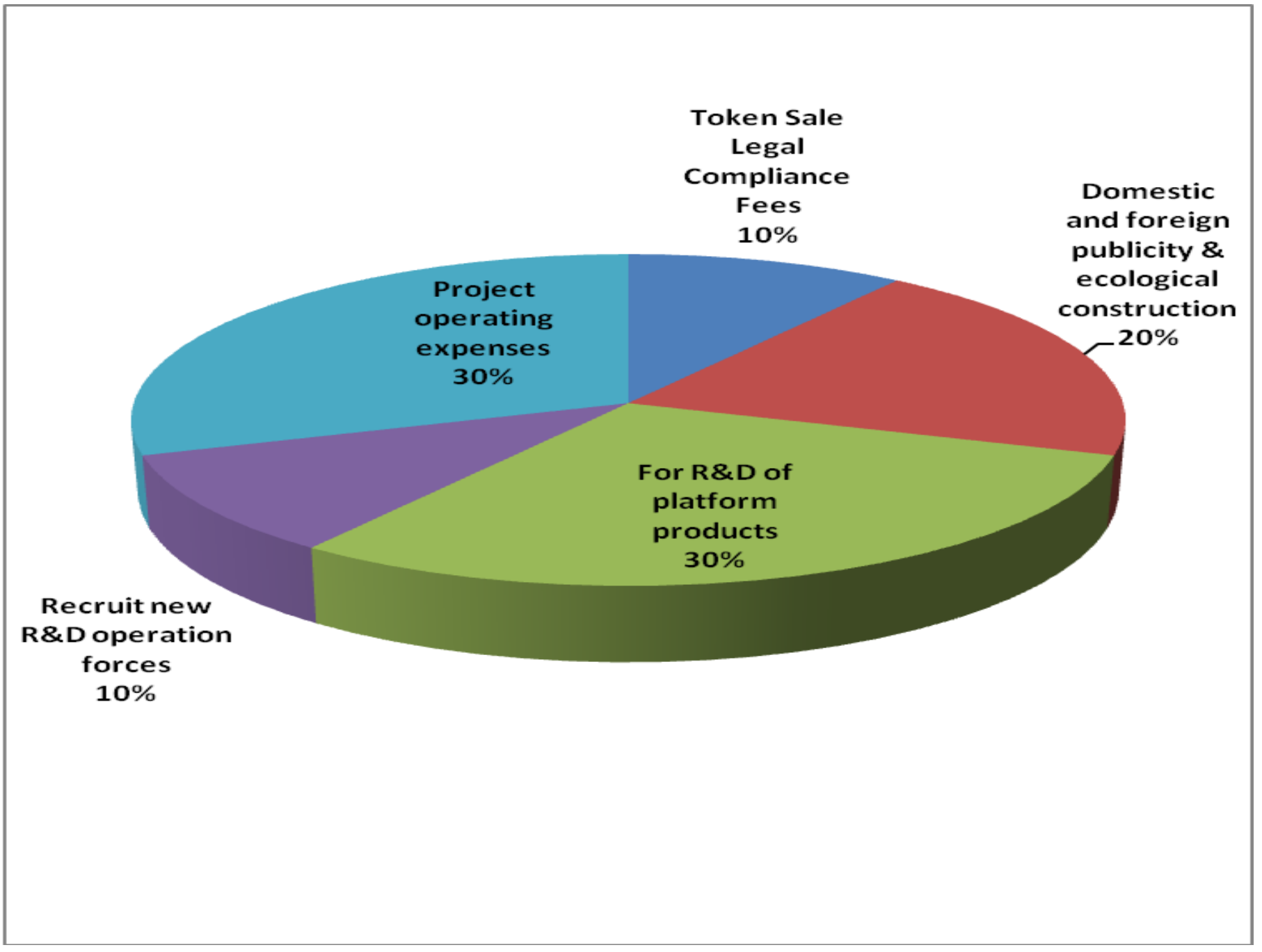


Figure: Description of the use of funds

- 10% Token Sale publicity legal compliance fee
- 20% publicity & eco-construction at home and abroad
- 30% for R&D of platform products
- 10% recruit new research and development operations
- 30% project operating expenses

6.5 Distribution plan

The tokens issued will be distributed as follows:

- 20% put into circulation through public sales
- 10% circulated through private placement
- 50% reserve tokens for Foundation Agents

Mainly used to build a platform ecosystem, all for free to users

- 10% for the Foundation
- 10% is owned by Foundation staff
- The 10% token held by the Foundation is locked for 24 months.
- Foundation employees hold 10% tokens for 12 months.

七、NUBC Foundation and Organization Structure

7.1 Foundation

In order to promote the development and management of Number Chain (NUBC) transparent mechanism, advocate and promote the smooth progress and development of Number Chain and to promote the safe and harmonious development of the open source ecological community, Number Chain established the NUBC Foundation (Number Chain Foundation) (Hereinafter referred to as "Foundation").

Through the blockchain data structure, the Foundation realizes the blockchain of trades, users and platforms and achieves the win-win benefits for users, merchants, partners, third parties, governments and other related parties, ensures the effectiveness of project management, Sustainability and security, promote the development and promotion of NUBC blockchain technology, combine the NUBC blockchain technology with more scenarios and achieve NUBC currency through a series of measures such as universal promotion, marketing incentives, e-commerce and active rewards The functions of generating, giving, and trading, etc. establish the NUBC blockchain ecosystem.

7.2 Organization

In order to make reasonable and efficient use of the funds and resources of the Foundation under the principle of openness and transparency, in order to promote the rapid development

of NUBC, in order to further integrate NUBC's industries, scenarios and applications, the Foundation consists of product personnel, developers , Marketing staff, operators and functional departments. The organizational structure includes decision-making committees, product design centers, technology research and development centers, marketing centers, operation management centers and financial and manpower management centers. The specific organizational structure is as follows:

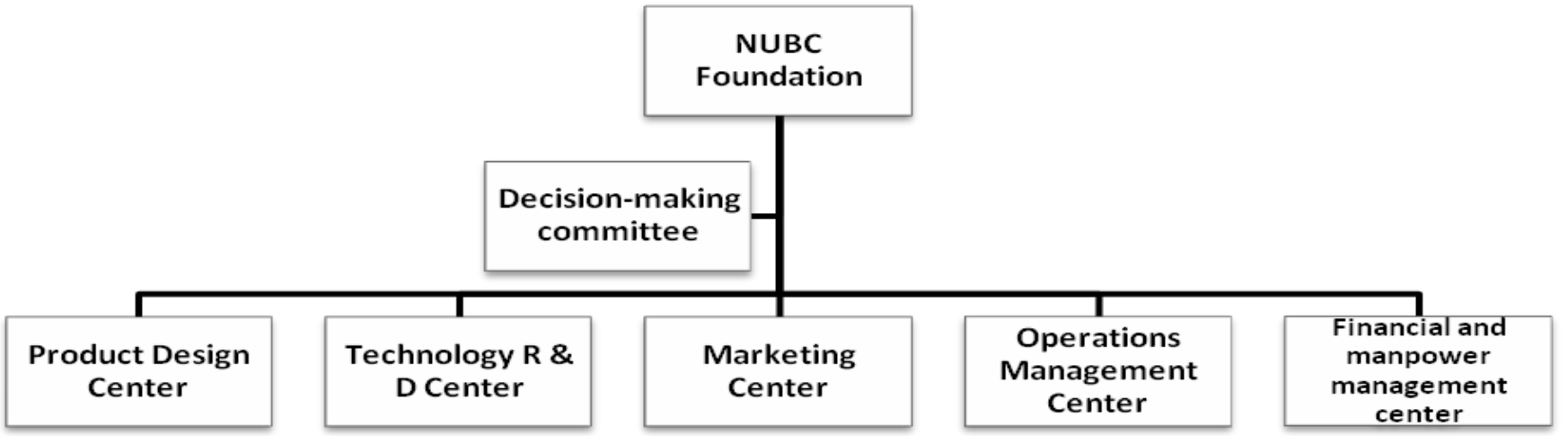


Figure: NUBC Foundation Architecture

The decision-making committee, which is the highest decision-making body of NUBC, undertakes the final decision-making function. The decision-making committee members have no posts. They are responsible for reviewing and approving major issues such as the strategic planning, annual plan and budget of the foundation. On behalf of the foundation, Voting on major issues. The first member of the decision-making committee was elected by the NUBC founding team and investors.

The decision-making committee establishes the chief executive officer, is elected by the decision-making committee and is responsible to the decision-making committee.

Specific duties and responsibilities of the CEO: Responsible for the implementation of the relevant resolutions and rules of the decision-making committees, the management of day-to-day operations, the fulfillment of the targets set by them, and the regular reporting of the implementation to the decision-making committee. The CEO sets up the departments of product design, technology research and development, marketing, operation and marketing, financial manpower, etc., and is responsible for the establishment, development, operation,

and maintenance of related products of the company.

Product Design Center

The product design center is divided into product department and design department. The product staff is responsible for exploring the possibility of combining Number Chain with related industries, fields and scenarios, establishing sustainable development strategies, conducting market research, developing product prototypes and mastering project development progress , To ensure that the program landed and implemented; designers UI design and other image design work.

Technology R & D Center

The R & D center is composed of the core developers of NUBC. It is responsible for the development of underlying technology, open port development and audit, management of open source code, modification of source code, development of relevant and derivative products, testing, going online, auditing and system maintenance.

Product staff and R & D personnel will continue to pay attention to industry trends, understand community hotspots, communicate with participants in the community, hold regular technical exchanges, learn about technology trends and promote common development.

Marketing Center

Marketing Center is responsible for NUBC technology promotion, promotion of core products and derivatives, expansion of partners, provision of services, contact with media cooperation, advertising, design of user interaction, research, identification and signing of new promotional channels and other work, according to partners And the user's requirements, customized promotional programs.

Operations Management Center

The Operations Management Center, based on products designed and developed by product personnel and R&D personnel, serves communities and projects, operates, promotes, and promotes NUBC projects and products. The operator is responsible for the operation of the product and actively expands its user base by bringing together NUBC, end users, and partners to create the fastest and most widely deployed NUBC commercial blockchain.

Product staff, R & D staff, marketing staff and operators will work closely together. According to the actual situation, the staff of the relevant departments shall convene the project establishment and project follow-up meetings to communicate the progress and requirements of the project so as to provide better service to the partners and users.

Financial and manpower management center

Responsible for the financial, human resources, legal affairs, administration and other related matters within the foundation, the finance staff is mainly responsible for the project to raise funds for the use and audit, daily operating expenses and audit, cost control, risk management and control; manpower responsible for attendance and related personnel Remuneration management; Legal affairs is responsible for drawing up and reviewing various types of documents to avoid possible various types of legal risks; the administration is responsible for related daily administrative matters.

八、Team and consultant

8.1 Team members and consultants

(1) Jack Li

Founder and CEO,

Successive entrepreneurs, early Bitcoin investors. Responsible for the day-to-day operations of NUBC, with MBA from Toronto ROTMAN School of Business, keen to study ways to improve the market efficiency of the microeconomy.

(2) Qaunain Haeems

CTO

9 years of working experience in technical solutions. He once worked for Baidu, Tencent, Qihoo 360, and other first-tier Internet companies. Rich experience in Big Data, Advertising Algorithms, BT Systems and CTR Platforms with 100 million System Architecture Development Capabilities, Extensive Experience in Highly Concurrency System Framework Design, Rich in Team Management, Strategic Planning and Business Co-ordination The actual combat experience, at the same time, also has a profound knowledge of cryptography, and is an early Bitcoin investor in Bitcoin.

(3) Beck Chu

Senior Blockchain Product Manager

He holds a master's degree in computer informatics from McGill University in Canada and has extensive experience in R&D and project management of blockchain products. He used to be the regional project director of Huawei, responsible for the delivery and service of three countries in Central America (Guatemala, El Salvador, and Honduras).

(4) Alan Lee

Senior blockchain expert University of London blockchain technology center researcher

Alan currently works at the University of London Blockchain Technology Center and is involved in the research of cryptographic digital currency trading and tokens issuance regulation. Alan founded the China-UK Blockchain Association, which is dedicated to paving the way for research on the blockchain between China and the United Kingdom. He is a Ph.D. in Financial Mathematics at University College London focusing on algorithms and high-frequency trading. He has also been responsible for quantifying investment and big data projects in several investment banks, including Credit Suisse and others.

(5) Sunny Wang

Chief Marketing Officer

10 years marketing experience. He once served as senior marketing director and senior media director of Shanda Games, and has extensive experience in media processing.

(6) Zhang Xingpei

Chief legal adviser

Zhang is one of the founding partners of Lin Zhang Law Firm. He holds a Bachelor of Laws degree in England and is qualified as a solicitor in England and Wales and in Hong Kong. Mr. Zhang has extensive experience in handling legal matters relating to business law, business and commercial transactions, and foreign investment related to IPO, private equity, mergers and acquisitions, and financing.

8.2 Contact information

Telegram： https://t.me/nubchain_cn

Email： nubchain@gmail.com

Twitter： https://twitter.com/NubChain

Website： http://www.nubchain.io

九、Investment agency

十、Legal Affairs and Risk Warning

10.1 Legal Affairs

The NUBC project will establish a BVI company established overseas, the NUBC Foundation. The Foundation, as an independent legal entity, will be solely responsible for organizing the team to develop, market and operate the NUBC project and assume all the relevant responsibilities.

The NUBC Foundation will strictly follow the laws and regulations of BVI, and will be properly exchanged for specific groups of people and will be given the digital currency NUBC.

Due to legal restrictions on national citizens or groups, the digital currency NUBC will not conduct public crowdfunding or public offering in some countries and regions. Digital currency NUBC as a virtual use of virtual goods and use, not securities, nor is speculative investment vehicles.

The NUBC Foundation's revenues in the digital currency NUBC swap will be used primarily by the NUBC Foundation for technology development, marketing, community building, financial auditing, business collaboration and more.

The NUBC platform is still likely to be challenged and regulated by competent authorities in different countries around the world. In order to meet and comply with local laws and regulations, the NUBC platform may not be able to provide normal service in some areas.

10.2 Risk warning

Before the project is sold, it will not organize any publicity and advertisement promotion activities in any media. The platform team does not organize any WeChat group, QQ group or mailing list for promotion. Please check carefully before participating.

This document is for informational purposes only and does not constitute the opinion, opinion or opinion of any future purchaser of the digital asset or a contract or promise of any kind.

Investors, once involved in private placement and sale, understand and accept the risks of the project and are willing to undertake all the corresponding results or consequences for this purpose. The platform expressly disclaims any direct or indirect losses caused by participating in the platform project.

The native digital asset involved in this project is an encrypted digital code used on the platform and does not represent the equity, debt, profit or control rights of the platform project.

At the same time, NUBC Foundation expressly refuses to acknowledge and refuse to assume the following responsibilities:

(1) Anyone who violates the anti-money laundering, anti-terrorist financing or other regulatory requirements of any country in the exchange of digital currency NUBC;

(2) Any statements, warranties, obligations, undertakings or other requirements of this White Paper that anyone has violated the digital currency NUBC and any resulting loss of use or non-withdrawal of the digital currency NUBC;

(3) For any reason, the exchange plan of digital currency NUBC is abandoned;

(4) The development of NUBC has failed or been abandoned, and resulting in the inability to deliver or use the digital currency NUBC;

(5) Delays or delays in the development of the NUBC public-owned chain, and the resulting failure to reach a prior disclosure schedule;

(6) Errors, defects, defects, or other issues with the NUBC source code;

(7) NUBC failure, crash, paralysis, rollback or hard fork;

(8) NUBC fails to perform any specific function or is not suitable for any particular purpose;

(9) Use of funds raised from the digital currency NUBC program;

(10) Failure to timely and fully disclose information on the development of the NUBC public-owned chain;

(11) any participant has disclosed, lost or damaged the wallet private key of digital currency NUBC;

(12) Default, breach, infringement, collapse, paralysis, termination or suspension of service, fraud, misuse, misconduct, error, negligence, bankruptcy, liquidation, dissolution or suspension of any third party distribution platform;

(13) The content of the agreement between any person and the third-party distribution platform is different from the contents of this White Paper in conflict or conflict;

(14) any person's trading or speculation of digital currency NUBC;

(15) The listing, suspension or delisting of digital currency NUBC on any trading platform;

(16) The digital currency NUBC is classified as or deemed to be a currency, security, commercial paper, negotiable instrument, investment or other thing by any government, quasi-government agency, authority or public agency that is prohibited from being regulated Or legal restrictions;

(17) Any risk factors disclosed in this white paper, as well as any damages, losses, claims, liabilities, penalties, costs or other adverse effects that result from or in connection with such risk factors.