LOD Chain

Project white paper

The real meaning of mixed reality, a new intelligent ecological environment.

directory

I. project background: national reading meets block chain

Today, China's economy is developing rapidly and its economic aggregate has become the second largest in the world. However, the relatively low quality of the people has become a huge obstacle to the country's progress and prosperity, which has become a consensus. How to break through this bottleneck -- carrying out reading activities for the whole people and jointly building a scholarly society is a strategy for cultural prosperity highly recognized by people of insight from all walks of life.

The state advocates, the intelligentsia promotes, social organizations implement, the media supports, and the people participate extensively, making reading among all the people a social scene that has the widest coverage, involves the most cultural fields, has the largest number of participants, is the most active, and best reflects the spiritual and cultural outlook of the people.

With this mega-cultural event that involved the spiritual life of 1.3 billion people, enterprises at all levels, various social organizations and publishing institutions, libraries, bookstores, the Internet and the WeChat public account are all in an era of carnival. At present, there are many problems: first, most of them are in the form of reading, such as various reading months, reading festivals and reading events. Second, the content flood lack of soul, unable to form a system of deep reading; Third, helpless, do not know how to build a bookstore, bookstore enterprises, bookstore schools, more do not know how to build a bookstore community, bookstore village; Fourth, it cannot form a benign incentive mechanism and make reading a way of life. Fifth, the lack of reading system, the old and young border areas and poor areas can not get reading resources; Sixth, there is a lack of a powerful platform to provide reading services for all 1.3 billion people.

It is the above problems that should be solved in "reading China happily". It is to build a family library for every family and family. In this study, there are bookcases, reading cards, notes, reading files, and writing spaces;

there are also reception rooms and family reading conferences. At the same time, we will build libraries for government agencies, enterprises and organizations, and record and exhibit the reading process and achievements of these institutions. "Reading concept" leads the reading direction of the whole people, and it is in the household of "Happy Reading China"

Under the extensive participation, we should construct a reading system with clear themes and rich contents. The third is to build a national reading think tank to provide consulting services for all kinds of institutions at all levels to carry out reading activities, especially through theme competitions to attract Book units to participate and achieve good results. Fourth, we should set up "reading points" according to blockchain technology, deduce the reading process into a long process of wealth, "reading points" become a "currency" that makes more people become smarter, from "technology" to "market"

It can stimulate readers' reading enthusiasm, achieve continuous reading and end reading. The fifth is to build a team of storytellers, carry out public welfare activities, and send reading resources to those lacking in reading resourcesSmall border and poor areas. Sixth, improve the service system of "YUELIAN China" and make it the No. 1 Platform for the construction of "Shulian China".

As the designer of "Happy Reading China" content system, the National Reading Association in May 2017He

completed the registration and was convened in the same year at 9 24. Since its establishment, the association has made a series of explorations, practices and researches on how to carry out the cause of reading for all. It has been evaluated and affirmed by the society. In recent years, the association has been more pragmatic, and its "experimental project of Family Reading Association" has been successful, covering more than 8 million people. If this project can be promoted nationwide, it will cover more than 400 million families. Many schools and middle schools have incorporated it into their special contents. Provide unique content for national reading.

The experience of promoting the cause of reading by the whole people has also attracted attention from all over the country. Beijing, Shanghai, Jiangsu, Fujian, Sichuan, Hunan, Hebei, Zhejiang, Xinjiang, Hubei and other places have built or are preparing to build social organizations for reading by the whole people according to the Jilin model. Reading for all is a social undertaking, and social organizations have irreplaceable advantages in promoting it. The social organizations represented by the National Reading Association promote the cause of national reading, which is of great significance to the construction of the Book China. It is not only the aggregation of social wisdom, but also the crystallization of practice.

2、Introduction to LOD project

1.What is LOD?

LOD – Happy Reading chain is the original digital asset based on blockchain technology under the "shared reading" state of continuous cloud, which represents the rights and interests of reading. Its production process is closely related to the writer's writing and the reader's interaction, and can only be obtained through the reader's contribution to the work. In the serial cloud shared reading state system, he will become a medium for writers and readers to contribute resources, encourage writers to create excellent works, and enable

readers to enjoy the quality of reading experience.

The total amount of transmission is 78 million. The dpos consensus algorithm and cross chain technology are optimized. In order to store and retrieve data, readers can also provide disk space and bandwidth to earn fees. LOD encourages readers to share their disk space and bandwidth to gain Get a token reward. It is a leading technology in the world through data and cloud computing: smart technology, and so on, so that each of them can enjoy more equal, more transparent and convenient access to Internet services. Fair, just and transparent, can break the "impossible three solutions" theory, and the top-level public chain with extremely fast transmission speed. We can realize the network storage in the area, optimize the network speed, balance the network bandwidth, avoid the guest attack, fishing, etc.

This system is made up of computer nodes which are used by groups to complete the common task, coordinate the work and complete the task. The emergence of distributed system is to complete the calculation and storage tasks of single computer by cheap and common machines. Blockchain technology is not a trust system based on agreed rules. The "decentralized" features of smart contracts, distributed databases and other technical features make LOD more transparent, authoritative and fair. On the platform, all the Internet, enterprise cloud computing and so on can be settled on the platform, forming a complete system together, providing readers with high-quality idle, distributed and shared services.

The public chain hatched through dmnt is expected to be the fastest in the world. At that time, the public chain will attract DAPP like developers, exchanges and investment.

The public chain will form the state of the highest level in the industry, and the market value of the public chain will probably catch up with the market value For EOS, every node participating in LOD promotion will enjoy the priority of this public chain and the value-added benefits brought by this public chain. Readers of the platform come from all over the world according to We need to choose the corresponding services, including sharing LOD, sharing storage space, sharing computing power and contributing block chain nodes.

2.Mission and goal

Our mission is to rebuild a healthy, mutually beneficial, coexisting and complete digital transaction state circle through blockchain technology and the wave of benefits

Our goal is to build a complete transaction state circle of decentralized security trust with blockchain technology.

Through data tracking on the platform, we can meet the personalized needs of different enterprises and investors, so as to provide readers with a healthy digital asset trading environment, and gradually break through the barriers of digital currency trading, so that readers can get real benefits in the transaction process.

2.2 characteristics of LOD

LOD (LOD chain) is a side chain of Ethereum based on three core functions: decentralized reading exchange system, covering content publishing, reading copyright protection, IP transaction, etc. In the above process, the

operation data record will be realized, the allocation process will be transparent, the key information will be linked, the data state in the development process of the project will be realized, and the operation of the project will be more open and transparent. LOD chain aims to encourage readers to participate in the construction of reading community through the incentive mechanism of cryptocurrency system and token payment reading mechanism, so as to truly realize the benign state of "free reading for readers, copyright protection for writers", and redefine the book reading platform through blockchain. It has the function of tracking, analyzing, integrating and relating data, realizes the platform of sharing digital settlement transaction for data authorization, provides investment transaction services for readers, brings traditional transaction, simplified transaction and transparent transaction to more investors, and makes each investor's investment opportunities diversified and investment risks dispersed.

At the same time, the amount of science and technology to achieve greater profits breaks the traditional profit model of the investment industry completely, and the operation of data changes the living habits of the digital settlement trading system, so as to build a diversified financial state circle of the digital settlement trading system and become a new and transparent Online financial system that can benefit all.

It has the following characteristics:

Security ensure that the transaction details are only shared within each transaction, and that the transaction ledger is complete and effective, available

for audit, and extremely secure.

Flexibility. Partners can use the blockchain API and other supporting tools to develop more powerful new applications. The software development program contains six languages, which makes the integration of API more convenient.

Scalability. The purpose of this paper is to build a consensus between trusted network intermediaries and network participants so as to improve transaction processing speed and scalability.

2.2 Advantages of LOD

Data security: the platform adopts relational database service (RDS) with multiple protection measures to monitor database performance in real time. Adopt multi database load balancing data technology and multi computer room multi line disaster recovery plan to ensure the stable operation of the database.

Asset security: wallet management makes it far more secure than ordinary banking and financial institutions

Case. 64 bit double special key encryption, unique dynamic decryption algorithm decryption. The transaction is cooled immediately after completion, and the offline cold wallet is saved. Offline Wallet Key multi signature management, key special room storage, transaction account real-time monitoring, to ensure the security of the reader's account and capital.

System stability: trading platform enables bpngs, the main R & D transaction data integration engine, to peak

The matching speed is up to 180000 / s, ensuring zero delay and zero jam in the whole order process. At the same time, oil currency enables distributed denial individual service to prevent ddosd + WAF + nginx server and ensure stable service operation.

Network stability: the trading platform adopts content distribution network (CDN) technology, intelligently analyzes the network traffic load, avoids the bottleneck of data transmission speed and stability, optimizes the network resource allocation, and quickly receives the readers' requests. Under the community consensus of 120689, from "middle" to "middle"

Localization and point completion payment settlement.

The real value of the combination with blockchain is to reach a consensus and build an alliance among the settlement institutions in promoting asset circulation, and form a settlement state circle composed of multiple intermediate institutions. Such a settlement state system highlights the function of intermediate institutions, and simplifies the operation cost of asset circulation of intermediate institutions. From mistrust to trust, the settlement of trust crisis has become a thing of the past.

The combination of blockchain and blockchain has the characteristics of de trust. Based on the principle of mutual distrust, the operation of the whole circulation asset system is open and transparent. Through the signature mechanism and the park's way of "the interest minority is subordinate to the majority", the trust can be guaranteed from the circulation asset mechanism. From unsafe to safe, dispel readers' information worries. The combination with blockchain makes the data storage from insecure to unsafe. Firstly, the reader's data is stored in block chain structure, which is verifiable. After tampering, it can be found quickly. Secondly, the data has the same backup in multiple nodes – even if the data on one node is modified, it can be recovered from other nodes, which eliminates the data tampering attack of the client from the mechanism.

2.3 blockchain identity

Every newly registered reader will have a unique blockchain in DAPP, which can solve the core problems of traditional account withdrawal method and realize the real blockchain;

1) The reader has 一 pieces of codes, i.e. pieces of certified blockchain module ID, and the reader does not need to prove the authenticity of copies to any 人; 2) the account has a complete credit recording system to prevent the reader's information theft and

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repetition;

3) The account information authority exchanges and interacts with each other, and the data can be kept in the circulation of the whole chain;

4) The authorized public key and private key of account data are authorized only;

5) The chain authorization of assets can realize the safe circulation of digital token and prevent 止 loss and tampering.

2.3. The architecture of full dimension computing. Fully support the current and subversive HTTP, protocol, IPFs, and protocol based optimization. Optimize and upgrade full dimensional computing (cloud computing, fog computing, edge computing) scenarios, to create

We should maintain the chain architecture of the full dimensional scene, making full use of the cloud and fog ends.

The computing, networking, storage and other hardware capabilities of the edge end and the software capabilities such as time length, frequency, traffic, events and so on are intelligent to support business scenarios.

3、Background of blockchain in the field of Education

Although the focus of blockchain architecture is still focused on the field of finance, it has begun to touch other fields, including supply chain, health care, education and localization. Obviously,

Some pain points in the field of localization and education are the reasons for attracting blockchain technology into this field.

3.1 industry pain points

3.1.1 serious situation of copyright protection

The development of information technology makes copyright protection more and more difficult to achieve. For content creators, the infringement of intellectual property is common. Because it is difficult to distinguish the copy and the original of the digital copy, the difficulty of infringing the digital copyright on the network is low, and the transmission speed is often fast. According to the investigation of the authority, more than half of the authors' works are often pirated, and more than 30% of the authors' works are pirated

More serious. The pirated and wanton dissemination of the work seriously damages the interests of the content creators, reduces the income of the intellectual property owners, and indirectly affects the quality of the work.

3.1.2 uneven distribution of educational resources and inefficient resource utilization

Many of them do not feel the distribution of educational resources. The whole education and resources are over concentrated in city and central city, where educational resources are over concentrated in nuclear schools, and excessive resources are concentrated on nuclear institutions.

The waste of resources is also very serious, including the existing resources and precipitation resources of middle schools and chemical institutions, which are restrained in a narrow and specific range, and their radiation impact is very serious. In addition, the quantity and quality education resources are trapped in the real fence. To some extent, the uneven distribution and excessive concentration of education and educational resources are the main causes of the chronic diseases in modern society, including poverty and uneven distribution of wealth, employment barriers, urban diseases, etc.

3.1.3 explicit problems in the field of education highlight system cost With the rapid progress of science and technology and the rapid development of the Internet, social economy is becoming more and more important

Great changes have taken place in the "living" mode of "education" and the "production and dissemination" of "education" and "content"

The change of the pattern is also a great change. But the values respected by the society are not very good

There is no substantial change in the change of education and the institutional elements of education and

institutionalization. This "static" and "dynamic" has led to many "disconnection", the disconnection between the system rules and the reality, the disconnection between the content and the demand, the disconnection between the form and the reality, and so on. Most importantly, the imbalance of the rights and interests structure in the whole field can also be a summary of the lag of regulation, the imbalance of resources, and the problem of piracy. In this way, more explicit problems are exposed and need to be solved.

Question Category	Problem presentation	Crux of the problem
Content providing	Insufficient content supply and rigid content supply mechanism	Insufficient system support
Creators	Poor protection of creators' rights and interests, low income	Pirate
Consumer	Poor experience, few opportunities to participate in interaction and few choices	Insufficient innovation
system	Lack of innovation, low protection of rights and interests system, and great difficulty in safeguarding rights	Backward system structure

Table 3-1 dominant problems in the field of culture and education

3.1.1 technical difficulties

To protect copyright, we need to start from the source, let "station" have a perfect registration andfiling system, and provide fair and credible evidencewhen it is necessary to safeguard rights. One of themain reasons why the infringement of academicworks is hard to be determined is that many network service providers play the role of law in the name of information storage space. In

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addition, due to the characteristics of network infringement certificate, such as shape, easy to be tampered with, rights are usually lack of professional knowledge and technology, so it is difficult to obtain and save infringement certificate.

The derivative industry of learning platform is also the main revenue of Internet and chemical industry

This is the way. As an important source of learning IP, "China online" is trying to make innovations and breakthroughs in IP field. IP studio has packed the top authors and works with the influence of the three platform of the platform, including the WeChat platform and the post bar, and fans of the writers, so that the works have the potential of IP adaptation. But the transaction of intellectual property rights needs to be confirmed first. Compared with the famous writers, some of them are not so well-known, but the writers whose works are of high quality take a lot of time to confirm their rights. Secondly, in the field of IP, there are still violations of intellectual property rights, mainly because there is no credible registration in the process of copyright trading.

Network learning needs a lot of cost to maintain the operation of the station and protect the intellectual property rights of writers, which will offset the income of some writers

Thirdly, it reduces the economic benefits of writers.

Blockchain based network learning platform

The main purpose is to reduce the maintenance cost of the platform through the governance management of the platform. Intelligent contracts are used to replace partial operations. The business logic and data flow of intelligent contracts based on block chaining are integrated into the trustworthy block chain, which solves the trust problem caused by localization in the past. At the same time, due to the characteristics of the blockchain that cannot be tampered with, when the author enters the legal rights protection, the block

The electronic data record of copyright on the chain can be used as the evidence with higher public reliability, which is convenient for investigation and evidence collection.

3.1 Potential advantages of blockchain application in the field of culture and education

Due to the authenticity advantages of data storage and transmission of blockchain, the functions of work dissemination and copyright recognition in the cultural field are the first to be widely recognized blockchain should be pointed to, and a series of new model constructions in the fields of content release confirmation and circulation, creative traceability, physical asset digitization, IP financing, etc. imported in the more extensive range of demand are gradually emerging.

Earlier, people's imagination of education blockchain had existed. Although education system is the most rigorous field in the social life of all countries, there are still problems such as uneven distribution of education resources and waste of education resources. Obviously, the field of socialization and education is a complex social system constructed by multiple subjects and compound entities. Diversification, regulation system cost, and value orientation are difficult, but the participation of all sectors of society is extremely limited, which is influenced by tradition and environment. Any participating organization or group has a common simple demand, that is, to achieve different achievements at the lowest possible cost. The cost of this can be either the dilution of system cost, the cost of money, or the opportunity cost, that is, the cost of time; This achievement can refer to creation achievement, materialized art, script, poem, short scattered and micro theory, or teacher's video course, real teaching results of scholars, interest discussion of groups, collective honor caused by members of organizations, etc. All of these, form generally depends on communication, content depends on Inheritance and creation. Under the condition of fully encouraging and promoting communication and creation, to realize all the value results of "doing", it is more dependent on regulation. The current educational regulation is realized by the current system

However, the two natures of the system also inhibit the communication and creation, which is the most important part of the system cost. When the block chain structure is transplanted into the existing education system, it is only to contract the most basic contract and achieve complete rigidity, to reduce or overcome the limitations of the cognitive system. In this way, we can more definitely expect that the idea of innovation will be fully stimulated, more educational resources will be fully activated, IP will have more definite expectations and more products will be traded.

According to the already clear research direction, the number of blockchains is less than the following

There should be obvious practical value for the education of modernization.

3.1.1 copyright confirmation and copyright transaction

In the previous copyright protection mechanism, after the author completes the content, he can apply for registration in the copyright office and wait for the approval of the relevant departments before the copyright can be effective. Not only does it cost money, but there must be a relatively long time difference. For example, the media industry, such as newspaper, media, etc., has a constant demand for timeliness.

The traditional copyright classification based on block chain is simpler and the character of block

chain can not be tampered with can guarantee the attribution of the work. The author can create intelligent contract based on his works, so that he can easily find the author and get permission through intelligent contract. Every transfer and license of work copyright can be recorded, and other users can easily query the copyright status of the work; blockchain, as a trusted system, can provide reliable evidence when the copyright is infringed, and can simplify the process of investigation and evidence collection by law enforcement departments.

As the model of DCI system in China's copyright protection, Huaxia micro film micro video blockchain Copyright (trading) service platform relies on blockchain information technology, on the basis of ensuring the safe and reliable operation of data, and on the basis of micro film In the micro video industry, it is an industrial platform that integrates copyright registration, operation and transaction, data monitoring, stable and secure storage, full search and revenue settlement.

In the past five years, due to the development of Internet and streaming media, the music industry has undergone great changes. The music festival, the singer, the composer, and the streaming media service providers have been impacted and influenced by the Internet tide, especially the determination and collection of

music royalties, which have been plagued for a long time. Therefore, there is an urgent need to increase the operability and transparency of the copyright tax that should be paid to artists and songwriters. Through the blockchain technology, we can effectively build a full, accurate and distributed music rights information ledger database. In addition, in addition to the ownership information of music, the royalties of each work can be added to the database through the "smart contract" based on blockchain technology. The "smart contract" will dynamically determine the relationship between the stakeholders of music work and realize the dynamic interaction between the stakeholders. Before, there were two blockchain technology-based start-ups "peertrack" and "ujo" in the industry, which are now providing solutions to the billing problems of the rights of stakeholders in the traditional industry.

3.1.2reeducation

With the continuous and deep development of the global open education resources movement represented by MOOC, learning in the category of "MOOC" has the characteristics of "decentralized" with multiple benefits, such as digitalization of mode, diversification of content, democratization of opportunities and decentralization of places. Therefore, the blockchain technology and smart contract will cater to the learning mode of "benefit

to go to the middle" and lead to new learning changes. Before, the development and response of blockchain technology in the global education field mainly reflected in blockchain technology teaching, blockchain technology teaching platform and blockchain technology communication.

4、Ecological framework

Ecological open mode

Build a complete "middle state circle" of digital currency transactions with blockchain technology, so that "blockchain technology provides a global open digital asset trading space for all readers and businesses through the" digital currency traceability industry chain platform ". Readers and businesses can use the platform" transaction information ", and the energy currency held by readers will continue to appreciate, All readers will not lose money if they only rise or not fall. The "open system" takes readers as the core, and builds a "open system" with multiple platforms, channels, industries and fields driving consumption. Relying on the strong digital production data state system, it is expected to open up readers, demand, multi-channel, enterprises and businesses, so as to build a global digital currency trading platform into a truly complete digital asset trading data state

system.

Rich consumer scenarios drive consumption, micro-blog / WeChat / Live / etc. social software drivers: multi channel: multi channel integration; multi industry: related industry development; multi domain: Breakthrough domain limitation, multi domain development; diversification: Merchants operate more than two kinds of goods or services at the same time. Including: diversification of commodities.

4.1 decentralized exchange

Based on the characteristics of Ethereum blockchain technology, Dezhong chemical exchange has built a centralized digital asset international trading system, which adopts intelligent contracts to manage assets, match transactions, asset clearing and other trading mechanisms.

Revenue sharing right: readers can invest in any trading product launched on the platform of Dehua exchange, and obtain all renewal fees and other dividends of the product during the investment period. The specific dividend amount will depend on the total amount of the financial derivatives produced by the trading variety and the total amount of investment in the decentralized exchange of the variety. The de Zhonghua exchange will set the upper limit of total investment quantity for different trading varieties and set the minimum income guarantee to ensure the investment income of readers.

Variety Issuing Right: readers who hold a certain

number of trading varieties in Sinochem exchange will have the right to issue trading varieties, including but not limited to currency / futures / options trading varieties.

The paid Dehua exchange will be deemed that the readers who invest in the variety will enjoy the right to share the income of the variety.

Preemptive rights: when the Dehua exchange launches new options or other financial derivatives When the products are purchased in parallel, the readers who hold the shares of Sinochem exchange will have the preemptive right of new products. The more the number of shares they hold, the more the preemptive amount.

1. Trading preference: when readers enter the transaction and need to pay the renewal fee, they can pay the renewal fee as the renewal fee by going to the Zhonghua exchange

When Dahua exchange pays as renewal fee, it will enjoy a 50% discount on renewal fee.

2. Repo right: the platform will regularly repo to the Sinochem exchange at the price of the platform's received part in the current market.

4.1 two way anonymous mode

As the account book of blockchain is open, any transaction can be traced, but there is a certain demand for confidentiality in the field of data transaction, which requires the transaction anonymity design of blockchain. Some buyers don't like their target suppliers or competitors. They know what products they buy and what product

data they prefer. What they want is to prevent other enterprises from launching their business plans. Some enterprises don't want other enterprises to know what product data they sell,In order to protect the business privacy of the enterprise or the business secrets of the customers, we can perform two-way full anonymous bookkeeping on the blockchain for each alliance member participating in the data transaction (whether anonymous bookkeeping is required or not), that is, we do not know not only which merchant the data transaction is to, nor who the data is purchased from, but also completely protect the privacy of the transaction pair.

4.1 certification right of data assets

After the data exchange transaction, the data will not be deposited. In the future, the data will be put into the exchange transaction again, and the income will still belong to the original producer, which is benefited from the DPO of the exchange Blockchain's technical control over data, a special asset, into copyright authentication. When data transaction smart contracts become effective, the data will be marked with a permanent digital certificate to prove the data producer. In the future, the value income right of the data producer will be permanently owned by the producer, which is also the realization of data confirmation and traceability. The client-side customer service end is essentially an app developed by the platform to the readers, through which the

readers' individual trade industry services can be developed. In addition, all transactions and activities of readers need to be connected with the platform through the app. If readers need to access substantive trade-related products and services through the platform, these services can be obtained through the app.

The full client is the best solution for super readers, trusted users and developers. It can run windows, Mac OS and Linux, but it only allows Linux to run trusted nodes. Readers of light wallets can connect to the network by linking to the full version of wallets, or directly adjust the API, provided that the owner of the full version of wallets has the permission to open the API, and the full version of wallets will download the complete block chain from other nodes of the full version of wallets through the point-to-point network.

Mobile client

a、For the convenience of customers and merchants, the "contract third payment platform's" payment payable "will develop the" machine app client ", including IOS client and Android client. We will continue to develop iteratively, and we will launch more functions to meet the needs of transaction, payment, asset management and information query. Both the full version client and the mobile version client have the following functions:Third settlement (collection and payment): mainly refers to collection

and payment (or batch), which can be paid once;

b、Many different accounts of settlement treasure can be used for payment, and the transfer funds can be transferred to the account immediately and conveniently.Including all kinds of live scene payment, cross-border trade, etc;

C、 Asset management: use private key signature to ensure the security of local saved account, and make the asset clear. At the same time, use multiple wallet (digital / cash) types to easily export. Backup anti loss, multi signature anti-theft. Data Compass: this function can provide real-time transaction index monitoring, statistics and analysis: Mining customer group characteristics to provide refined operation direction: cross checking with data to grasp market trend;Add key: add digital assets, track the trend of transactions in real time and pay attention to changes in the balance of assets.

d、 Readers can directly view and manage the credit rating and rights and interests of users in the app;

e 、 Pay attention to the situation: you can pay attention to the situation of global exchanges on the client side, set price reminders to seize investment opportunities, and also build in transaction and exchange services;

f、 Integration of DAPP · integration of the third DAPP (decentralized application program) interaction, push industry information, technological progress, and provide multi-dimensional data information to

discover investment value.

5、Technology innovation technology

Technical framework

The two-layer lodstorage network of (LOD chain) point-to-point distributed storage can make the LOD network disperse and the LOD mining machine should form a lodapplications chain: cross chain consensus chain main chain mining proof of storage. Chain provides consensus connection, pow, POS, dpos and other real installations. Developers can create and complete the deployment of nodes through the consenses provided by the main chain. Dpos can be adopted for the side chain with performance requirements, and POW can be adopted for the side chain with decentralized requirements.

5.1 blockchain design

The blockchain structure includes the necessary pre block head hash, transaction Merkel tree root hash, time stamp piece signature, traceability signature and other contents for block verification. In this way, the single chain storage structure can make the transaction get all the accumulated results, and the pbft can protect the fault tolerance and co recognition mechanism. On the whole, the design idea of combining main chain and side chain is adopted. Take the verification script out of the transaction structure, reduce the transaction space and avoid the expansion attack Strike. The side chain is the secondary basis of many DAPP operations. Therefore, the main chain structure should provide the support of the opposite side chain and be able to facilitate the contract transfer between the main chain and

the side chain.

Blockchain storage

It mainly includes two types of storage, localized storage and cloud storage. Protocol various cloud storage technologies such as IPFs and DMFS should be supported. The main feature of these technologies is to define how to store, index and transfer the token in the distributed system. The token is connected to all the devices in the network through a single token system.

In the traditional HTTP protocol, the resource is indexed by the resource identifier. In the distributed component system, the components will be indexed according to the content. Each piece will enter the hash map according to the content and get a unique fingerprint from it.

Adopt IPFs distributed storage technology. It is a distributed piece system protocol, a point-to-point hypermedia piece storage and index exchange protocol. P2P network of IPFs enables distributed network technology -- Distributed Web network is a distributed system, which provides a hash table like query service: key value pairs are stored in distributed web network Any participating node in can effectively retrieve the value corresponding to a given key. The mapping of key value pairs is maintained by all nodes in the network, and each node is responsible for partial routing and data storage. In this way, even if a node is added or left, it will have a great impact on the whole network, so the distributed web network can be extended to the common nodes (tens of millions). The distributed web network has the following properties:

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Autonomy and Decentralization: the nodes that make up

the system are equal, and there is no central control

mechanism for coordination:

Scalability: no matter how many nodes there are in the system, efficiency is required; fault tolerance: if there are nodes added and left, the whole system will not be affected. IPFs integrates three mature distributed web network technologies

Technology: kademliadistributed web network, corahdshts / kademlia Distributed WebNetwork,

Improve the query speed and effectively prevent all kinds of attacks. According to the stored data, it is determined whether the data book or node ID is stored on the distributed web network. IPFS basically does not have any storage restrictions. It will be partitioned into chunks and can be obtained from multiple servers at the same time. IPFs network is an unfixed, fine-grained and distributed network, which can meet the requirements well.

IPFs devices can also be abstracted into special IPFs records. When accessing, IPFs will obtain — record references. IPFs does not require every node to store all content. The owner of the node can select the data to be maintained. It's easy to copy, store, and save between IPFs nodes. All you need to do is to make the remaining instructions and hashes of IPFs nodes run by IPFs. The number of nodes adopting IPFs technology has reached a fixed scale. Even if each node only stores a few points of content, the accumulated space, bandwidth and reliability are far beyond the past.

Storage network

Using P2P distributed storage network, the core is to make readers become servers. When users store data, they also provide space for other users to store. It solves the bottleneck of little server production and can also be improved in speed.

The existing P2P distributed storage is mainly divided into two types: P2P storage service system, which mainly adopts the "peer-to-peer" integration of many servers to provide services. The main architecture is the pure P2P mode, which realizes data backup. P2P storage system architecture: P2P storage service system or 2p storage exchange system, their basic architectures are the same, mainly in the following five levels: coverage and information collection, basic data placement and organization, data placement and organization optimization, basic system image and system image transformation and upper layer response.

Each reader in the system not only provides resources to other readers, but also obtains resources from other readers. From the perspective of architecture, the "middle" structure, peer-to-peer between nodes, through mutual cooperation to complete the reader task. The advantages of P2 P storage network structure are: no middle node, not easy to form system bottleneck, not easy to be attacked, good scalability, and good organization.

version management

The version management of the system adopts the distributed version control system (DVCS) in the system. The client does not only take the snapshot of the latest version, but also mirrors the code warehouse completely. Therefore, any server that cooperates with other servers

can be recovered from any local warehouse after a failure. Because every extraction operation is actually a complete backup of the code warehouse. The system can specify and interact with different remote code warehouses.

Readers can cooperate with each other in the same item and different work groups, and can set different collaboration processes according to needs, such as hierarchical model work. The design process is the process of product version changing from version state to version state. The change of version state reflects the change of version design process. System version control operations include version addition, version modification, version deletion, version extraction, version backtracking, version comparison, and version consolidation.

1) The "working version" is the version in the design stage. The designer is entering the "design version" in the "private" working area, which cannot be accessed by other readers. The "working version" is designed by the designer or other versions.The submitted version refers to the final version that the design has been completed, but needs to wait for approval. At this time, the version cannot be deleted or modified.

2) After the submitted version of the distribution version is approved by the approver, it will be converted to the distribution version. In the process of audit, any reviewer can put forward opinions on the submitted version, feed back to the designer, point out the defects in the design, change the submitted version from to working version, and the designer can apply for audit again after modification, until the version passes the audit, it can be

called release version. Once the version is released, all designers can query and modify the released version. Frozen version is a version that has met some requirements and cannot be changed. It cannot be modified or deleted. The released version can also be regarded as a frozen version. The submitted version is a frozen version in the process of approval.

The full name of CDN is (content delivery network), that is, content distribution network. his

By adding a new network architecture to the existing Internet, the content of the website will be published to the "edge" of the network closest to the readers So that readers can get the content they need nearby, solve the Internet congestion, improve the response speed of readers visiting the station, and solve the root cause of the slow response speed of readers visiting the station due to the uneven distribution of the network bandwidth, the readers visiting the scene and the points. CDN network optimization can guarantee the fast, safe, stable and expandable network. To build CDN network optimization, readers generally need to have more than one middle-class network in different parts of the country. The service object is the customers hosted in the middle-class network. It is easy to build the existing network resources. CDN network optimization is a distributed CDN system with block chain technology, which integrates CDN mining, intelligent contract settlement and CDN trading market. CDN network optimization mining is to obtain CDN network optimization token by sharing idle upper equipment and upload traffic. Looking at the

international market, the mining machine has been open-source processing. Only raspberry pie (card type computer) can be used as a distributed CDN node to obtain CDN network optimization token. It avoids the malicious speculation of the mining machine, restores the authenticity of the nodes, and makes the threshold lower and the network more secure with the connected equipment.

Demand analysis and application scenarios of Le Du chain

Demand analysis of reading chain

The construction of happy reading chain is aimed at the scenario of reading for all, and it is also a practical item in the field of education. As the underlying architecture, blockchain technology is a targeted demand solution.

We conclude that reading activities for all extend the whole field of education. The main guidance we are aiming at is that reading activities for all are activities that need the participation of the whole people. In the Internet era, the main body of "the whole people" is to participate in a national activity, which can not simply separate the grantor and the audience. For many years, the organizational mode and institutional philosophy of reading for all have been basically in accordance with the principle of "let people participate", which has not been able to achieve the state of "people want to participate", but also far from the era characteristics of sharing, sharing and everyone is the protagonist in the Internet era. In addition to creating an opportunity platform for all people to read and participate in the new mode, we should also create a track record system for every participant or institution to participate in, and form a more extensive tracking and authentication mechanism for intellectual rights protection to actually encourage

innovation And the prosperity of creativity, in addition, we should promote the intelligent power to form the function of data traceability, and form the level interaction based on the distrusted data system at the two ends of "giving" and "receiving" of "education".

Some of the creators in the field of institutionalized education are weak and scattered, which inevitably requires the maintenance of strong organizations when infringing. In the current situation, relying on the quantity of the National Copyright Bureau, or the commercial bureau, the Ministry of public security and other departments, it is obviously not to regulate the network market. At this time, the market is required to play a role in the supervision of the enterprise through its legal organization. Through the benefit blockchain, the record and trace can be confirmed in the form of national bookkeeping, with multiple nodes, irreversibility and tamperability. It has the advantage that the single subject authentication mode can not be simulated for the ownership identification, which is the first to advance the life of copyright registration and protection. In copyright management, it is possible to use blockchain technology as the underlying technology for copyright public service. In addition, the platform can be used for copyright management and realize the socialization of copyright management.

At present, there is no safe, effective and real data platform in the trading of chemical products. The author can guarantee the quality, safety, morality and legality, preference and donation of the project, as well as the authenticity and accuracy of the content published on the platform.

In economy, compared with the existing learning platform, Le Du chain has made use of the intelligent contract technology of blockchain. In the process, the

programming machine operation only needs a small number of staff to enter the maintenance, which can reduce unnecessary waste of resources and eliminate the irregular operation.

In the form of reading activities for all, the important "storytelling", reading interaction and reading exchanges with different themes participated by readers are mainly based on wechat platform, but its form is limited and has an impact. The curriculum content of Le Du chain course system is provided, which can be fully open to the public. It can quickly present the influence of excellent courses from content to individual, and the Le Du chain can fully cover the blockchain data records at both ends of the course "teach" and "receive", and it can maintain the formation and content traceability of the course brand.

Literature platform is an important part of the industrialization, including network, academic copyright and IP industry. Internet is the front line of intellectual property protection, but at present, the phenomenon of infringement of intellectual property is very serious, the disputes of copyright litigation are frequent, which erode the original spirit, the degree of political protection is weak, the difficulty of proof, the cost of safeguarding rights is too high, and so on.
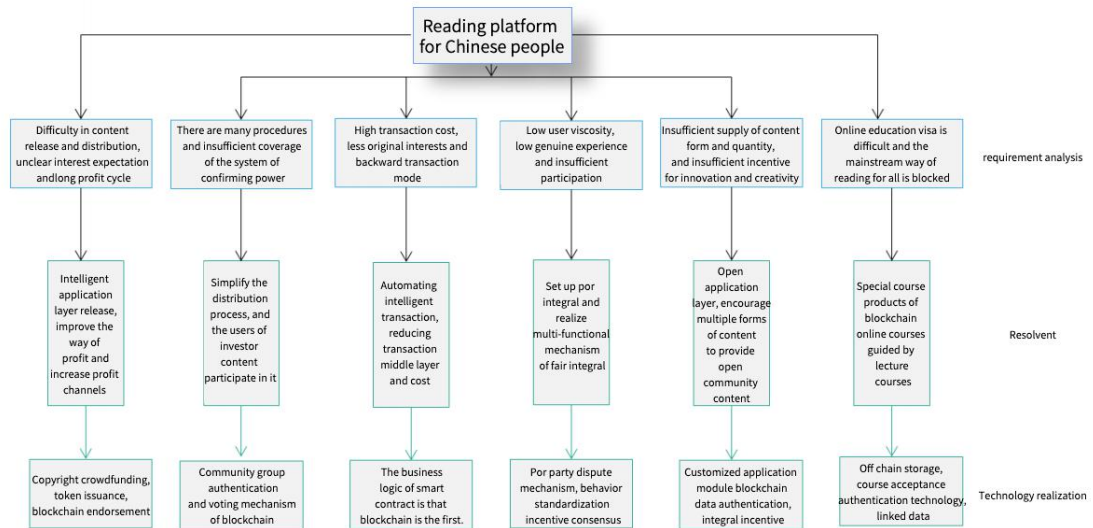
Figure 6-1 processing copy of Le Du China platform for demand

Application

6.2.1 structure of reading for all

Figure 2-2 social scenario of reading for all
The participants in the reading activities of the whole people are the main body of the social scene of the reading activities of the whole people. Without strict classification, according to the actual situation of the reading practice of the whole people, participants include institutions, reading organizations of the whole people, publishing houses, schools, enterprises, regular societies, and folk reading clubs; participants include readers, families, learners, authors, amateur creators, reading leaders of the whole people, various experts and scholars, etc.

The structure of reading activities for all
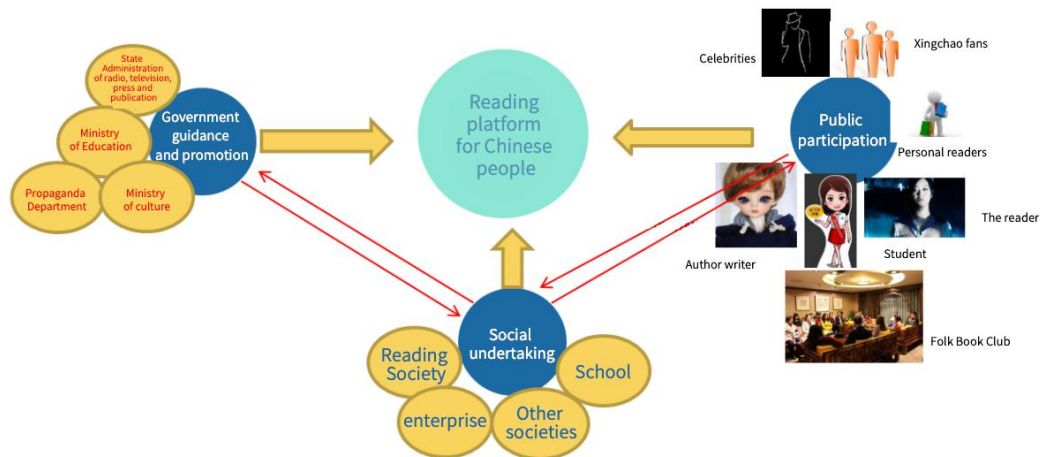
The organization is mainly in charge of the national reading activities. It is in charge of many chemical industry undertakings including publishing. It is an important and direct participant and manager of the national reading activities. It is also the main promoter and policy maker of the national reading activities; In particular, the Ministry of education, which is responsible for learning, education and the management of the whole education chain, has a deep participation in the fields where the original education attribute of EFL is very high. Problem: we are keen on the cause of reading for all, but before, we are, limited by the traditional management ideas and limitations, and lack of the necessary mechanism and top-level design to promote reading for all.

The national reading organization refers to the Association unit officially registered by the Association registration agency and specialized in the national reading cause and related promotion「 organizations. It is the social subject of the organization, planning and promotion of the national reading activities and the integrator of the resources of the national reading activities. Before 2020, all provinces and cities in the country must form such organizations. The National Reading Association, which is the initiator of the happy reading chain item, is the earliest

national reading organization established in China, and is the creator of many mainstream modes of national reading activities, including "Family Reading Association", "book reading rural" and other organizational forms, which are highly praised by the competent authorities. Problem: as a social organization, the reading organization for all lacks the necessary foundation of resources, the systematic network platform, and the basic ability of initiative design and operation of products.

Publishing house, in theory, is the main participant in the reading activities of the whole people. Based on the providers and publishers of digital rights and physical books of online reading, the publishing house, on the whole, has a positive upward trend in the development of digital copyright works and publications close to ordinary readers. Problem: due to the limitation of copyright infringement and the topic selection of products, the publishing house as a whole has different degrees of disconnection from the market demand, and lack of access to market data and necessary segments.

Many experts and scholars in different fields play an important role in the reading activities of the whole people, and some folk people participate in it. Through reading products, lecture courses, works, even interactive products designed and produced, reading groups will be the main demand groups of reading chain products.

Readers, the real main body of the reading activities of the whole people, and the main body of the reading market. The actual reader group takes the youth learning and children as the scale and quantity; the youth learning is the most rigid group in the demand for reading products, and the related readers behind it are the learning parents, who are the main audience groups of reading products; The second is the two group of readers and different types of interest fans. The former is the main group participating

in the nationwide reading activities of the government officials, while the latter is the most active group of people reading. The most potential reader group is the peasant group, and it is also the focus of national reading planning. Question: readers are interested in reading and reading. The consumer demand is diversified, the reader's type of consumer goods is not many, the reader is selective the combination of traditional reading form and modern fashion social form is not enough, and the consumer experience is rigid.

Enterprises, enterprises are important participants in the reading activities of the whole people. The demand for reading products of the whole people is relatively large and objective. At the same time, the enterprise is also a sponsor and an important source of resources for all levels of national reading activities, but there is no national reading product for the needs of the enterprise before.

In fact, the reading club, which is organized according to the region and interest theme, has become the main form of the normalization of the reading activities of the whole people. The members of the reading club mostly participate in the reading activities with their own interests and hobbies, which are often the real positive points of the reading activities of the whole people. In essence, the book club is a typical theme community. Before the book club, it mainly communicated through wechat platform. However, the existing wechat platform can not fully meet the needs of activities, content presentation and publishing of the book club, which is subject to many restrictions. The achievement of the book club and its members on its platform is not satisfied.

The above realistic basis of the corresponding scene of the music reading chain is the realistic condition of the

corresponding scene presented by the music reading chain. According to this, based on the needs of the users, the music reading chain adds the block chain and other technical elements. The characteristics of the corresponding scene are as follows.

6.2.1 platform autonomy

The market scale in the field of reading for all is huge, but in the traditional mode, it is difficult for creators to obtain reasonable royalties, and it is more difficult for readers to obtain reasonable and effective rights and interests protection. China's digital copyright reading platform acts as an intermediary service, providing authors with platform exhibition works and readers with reading. The reader's knowledge content, platform charge, intermediary fee, due to the considerable configuration of the better (screened works, pricing, communication and other business needs), plus platform for the work of the right, the intermediary fee is more expensive. How to improve the writer's income, make the creativity and creation get reasonable return, stimulate the writer's continuous creative enthusiasm, produce more excellent works, and constantly meet the needs of the masses, then we should make the process from the writer's creative content to the reader's consumption content shorter.

Benefit blockchain technology is a kind of transparent and real charge and path in the whole process of production and dissemination of the national reading industry, which can ensure that the author can directly benefit from the sales of his works. In addition, the author, across publishers and
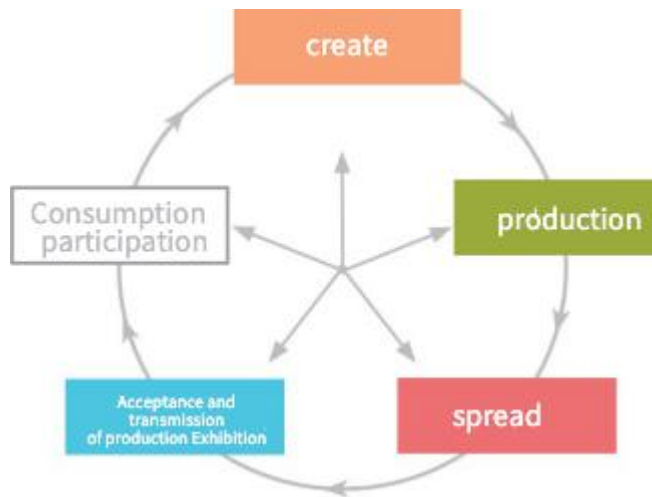
Figure 6-2 basic behavior closed loop of Le Du China

developers, publishes and pushes works through thblockchain platform, which does not need to bear the problem of infringement, and can better manage his works. Through the smart contract on the blockchain, we can shorten the work settlement process, so that readers can get the remuneration immediately after consuming works, and the computer code can automatically complete the settlement function. For readers, they want to see the money for their works presented transparently and visually. As the whole process of the transaction is distributed on the blockchain network, readers can confirm that the consumption of works has been put into the writer's account through the tracking of resources. This is the function presentation of blockchain distributed structure in the Le Du chain.

Content crowdfunding of education and Culture -- crowdfunding of creators

Unlike private financing or debt and equity financing in the field of financing, the block chain based crowdfunding service of the consumer end has unique pan financing and financing features, which is a new

industry around intellectual property (IP). Based on the characteristics and market rules of blockchain, consumers can participate in the whole process of IP creation, production, communication and consumption, without relying on the third crowdfunding platform to enter the credit endorsement. In addition, by using the blockchain technology, adding the right confirmation node of trust, entering the transaction of IP and its related rights, as well as the rights and interests distribution and other functions, we can solve the problems of opaque transaction and closed content. Public financing can also achieve the trust relationship between cross regions and blocks through block chain.

On the blockchain based read music chain platform, content authors can initiate content crowdfunding, easily build "content crowdfunding smart contracts", and specify crowdfunding rules. After the smart contract is run on the blockchain, it can be operated automatically and realize the whole process of online right confirmation – Copyright confirmation – channel management (anti-theft version) – revenue distribution

As a technology, block chain can not eliminate the trust of the class, but it can reduce the information asymmetry in the crowd financing process and reduce the cost of trust. Through crowdfunding, the author can also expose in advance in front of the readers, accept the market evaluation through roadshows, and reduce the unwelcome or poor quality works market.

Through this mode of "main crowdfunding, content management", a positive cycle of "production" can be formed on the learning platform. Good quality products are more and more popular and have wealth effect. Poor and vulgar works will lose market support and accelerate elimination; As a result, the quality content brand of Le

Du China will also be strengthened. More authors are willing to create on the platform, and more readers are willing to purchase and invest in good works on the platform. Unlike private financing or debt and equity financing in the field of financing, the block chain based crowdfunding service of the consumer end has unique pan financing and financing features, which is a new industry around intellectual property (IP). Based on the characteristics and market rules of blockchain, consumers can participate in the whole process of IP creation, production, communication and consumption, without relying on the third crowdfunding platform to enter the credit endorsement. In addition, by using the blockchain technology, adding the right confirmation node of trust, entering the transaction of IP and its related rights, as well as the rights and interests distribution and other functions, we can solve the problems of opaque transaction and closed content. Public financing can also achieve the trust relationship between cross regions and blocks through block chain.
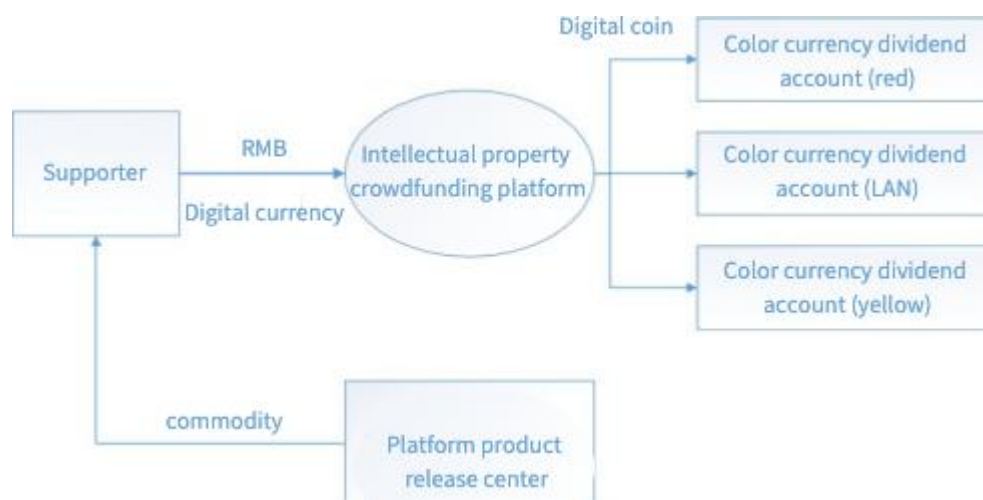

Figure 6-3 content crowdfunding asset tree

Through the content crowdfunding service for the author and the creator, the characteristics of the scenario of the third level of the reading chain are the content supply of the system.

6.2.1 chain structure of Le Du chain application system -- content that users can directly participate in

The content crowdfunding based on creation is the service of Le Du chain to the creation of national reading, and its crowdfunding target is the creation capital. Then, the goal of Le Du chain is to achieve the accumulation of all kinds of contents that should be provided or used by the users on the chain to form the real content crowdfunding, and the crowdfunding target is the content book.

The structure of the main chain and the side chain is set in the reading chain technology, and the side chain actually constitutes the corresponding layer. There are two types of responding types on the responding side chain, namely, the responding templates provided by the reading chain to the public, and the early responding templates that have been determined include customized templates for enterprises, reading club templates, local community templates and family templates, etc.; the responding products provided by the user system and reading chain.

Creation, creativity and content form can be created according to the will of users. In addition to the necessary audit mechanism according to law, the content and content form provided by users are provided by the music reading chain for all the corresponding products and content loaded by users through the music reading chain

Full coverage chain management and services, namely, providing full chain services based on blockchain from blockchain data recording, blockchain rights and interests protection, transmission transaction, payable payment settlement, smart contract payable and direct data services. In this way, the content structure of Le Du chain is no longer a simple medium-sized acceptance relationship, but a

real public participation content crowdfunding scenario based on blockchain based on distributed structure.
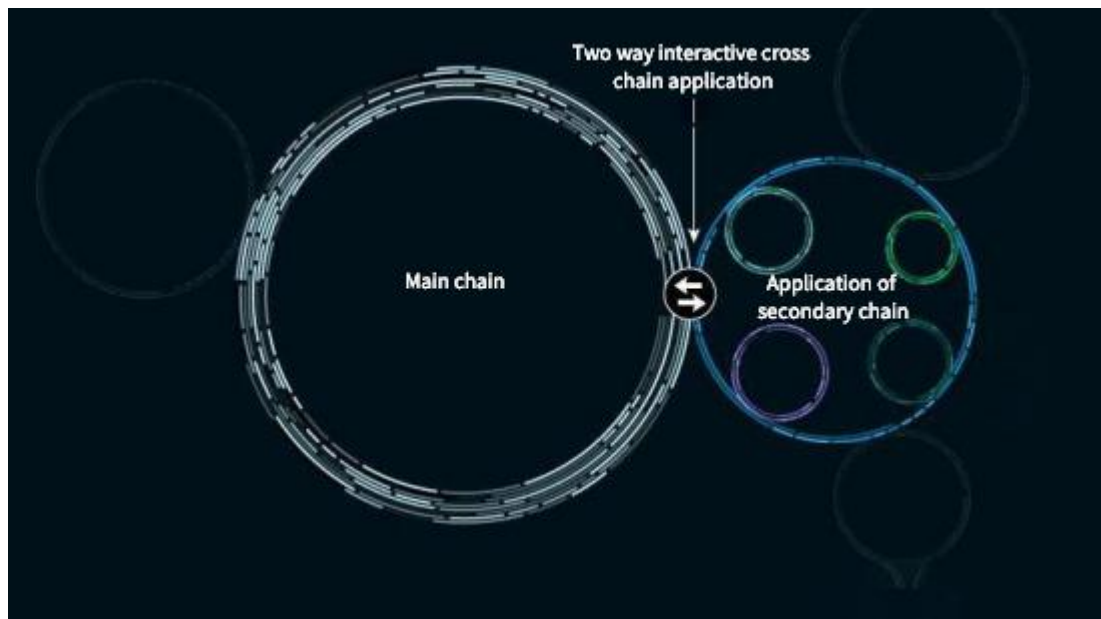

Figure 6-5 side chain

As mentioned in the previous section, the national reading activity is a strategic process of the whole society. In fact, it is the main part of the national reading society. However, due to the institutional tradition and form bottleneck, the effect of the development of the national reading activity is not ideal. What's more, the practice over the years has proved that the lack of effective operation mechanism and grasp of the Internet is relatively ignored Writing and other factors in the cause of reading for all directly and indirectly affect the effect of promoting the development of reading for all.

In addition, the national reading system, apart from the intermittent activities, has basically no scientific and complete assessment system for the activities of the whole nation from activities to various forms, fields and organizations.

The blockchain system of Le Du chain can directly solve this problem on the platform of "Le Du China", which makes the original lack of official plan and willingness to grasp, data chain of evaluation system design, report meeting, lecture, key book push, key and specific object reading and learning familiar to the original organization Supervision, effect evaluation, with full data . Through customized service product templates, Le Du chain directly supports enterprises and participates in reading and learning activities for the whole people, so that the effect data of such activities can be covered

In addition, the reading chain actually increases the opportunities and willingness of these institutions to innovate new mechanisms and methods.

In fact, the happy reading chain system provides an effective way to promote the reading activities of the whole people and realize the strategic target of reading for the whole people.

6.2.6 copyright confirmation

The copyright protection is difficult to confirm the right and piracy is a serious problem. The problem of piracy is so serious that it is because of the technical difficulties of copyright protection, that is, for the creation of characters, the technical threshold of piracy is low, and the speed of dissemination is fast. Since the investigation and evidence collection period is relatively long after the mediation, the database of each station has become more and more difficult because of the problem of localization. In order to judge the fairness of copyright, it is necessary for the system to provide objective and legal evidence.

Based on the characteristics of the blockchain de Zhong , if the copyright is recorded on the blockchain, it

can provide a reliable support for the copyright. At the same time, it can also bring great convenience to the subsequent use of the copyright. For example, in this platform for "crowdfunding" of "content", we usually need to enter the confirmation of copyright. The period is relatively long. We provide the query connection of copyright and trace the source of copyright.

In the same principle, all the content of the corresponding layer of Le Du chain, whether it is an individual, a group or an organization, is recorded in the same data record as the copyright confirmation to achieve the actual traceability data, so that the content can be provided with infringing data evidence, forming infringing data evidence, and the original creation can form irrefutable source evidence; In addition, in fact, for the original content of the subject matter, the data evidence with time stamp can not be replaced by other methods to achieve the effect of "on what you are, first stamp a time stamp".

6.6.7 self management of Reading Club

Some of the non-governmental reading clubs are not only non-governmental organizations in fact, but also real social organizations. Even with the promotion and support of some commercial institutions, the nature of the non-governmental organizations in the book club is still typical. But its motive and activity content are quite positive, and its quantity exists and is very active. It has positive contributions to active social activities and promoting the reading of the whole people.

However, in the same era, there are some problems in some of the non-governmental organizations, such as on-line or off-line ones. There are also more or less problems in the

book club, most of which are related to management. Such as the problems of business motivation and business purpose, transparency of organization, source, management and utilization of funds, honor sharing and responsibility bearing, etc.

Since the book club is an important participant in the national reading cause, Le Du China pushes the Le Du chain to households and the public. The Le Du chain combines the contents, activities and technical functions of the blockchain of the national reading, and will directly provide the book club with its own governance and management segments. Its basic technology is linked data management and smart contract. The former has been implemented in the basic structure of Le Du chain, while the smart contract is set according to the needs and organizational form of the book club, such as intelligent topic selection, conditional presupposition, voting mechanism setting based on blockchain, etc. More importantly, it is required to build a consensus mechanism on the music reading chain to form a blockchain based reading club governance management.

6.2.8 entity extension of Le Du China

Le Du China is a networking platform. Although it is aimed at the social scene of reading for all, its core system is built on the basis of interconnection, and it operates on the basis of interconnection. It appears on the basis of interconnection, and in theory is also limited by interconnection; The Le Du China design case has fully considered the effect of reading by the whole people and the industrial agglomeration that influences and drives it.

This effect has been shown in the organization, operation process and results of the entity activities of reading by the whole people. What's important is that the mass reading activities are mostly driven by institutions, and the industrial planning always pays attention to the industrial agglomeration effect and the formation of industrial state. As a service platform for reading for all, both for commercial and functional reasons, must meet and adapt to this extremely important mainstream demand, that is to say, reading China must have a substantial and extended structural function.

Therefore, Le Du chain actively participated in and actively promoted the "book town" project in the provincial special town plan, and achieved important results. The coming "book town" will become the core content of reading China's real industry scene and complete the main part of reading China's o2o structure. Before, Changsha Le Du chain, which has been determined by the framework agreement, was used as the "book" of Nanjing, Jiangsu Province

As the main item of the formal item, the town will complete a total investment of 17 billion 400 million yuan, and directly realize the industry gathering of nationwide reading and education and education, including block chain.

The offline entity part of the batch of content industry, including the exchange item, is to build a national reading field activity, combine the local advantages and special features, and form a good match between the corresponding layer and offline entity part of the reading chain, and an industrial state of reading China including offline entity

interaction.

7、Technology application

Blockchain Technology Architecture
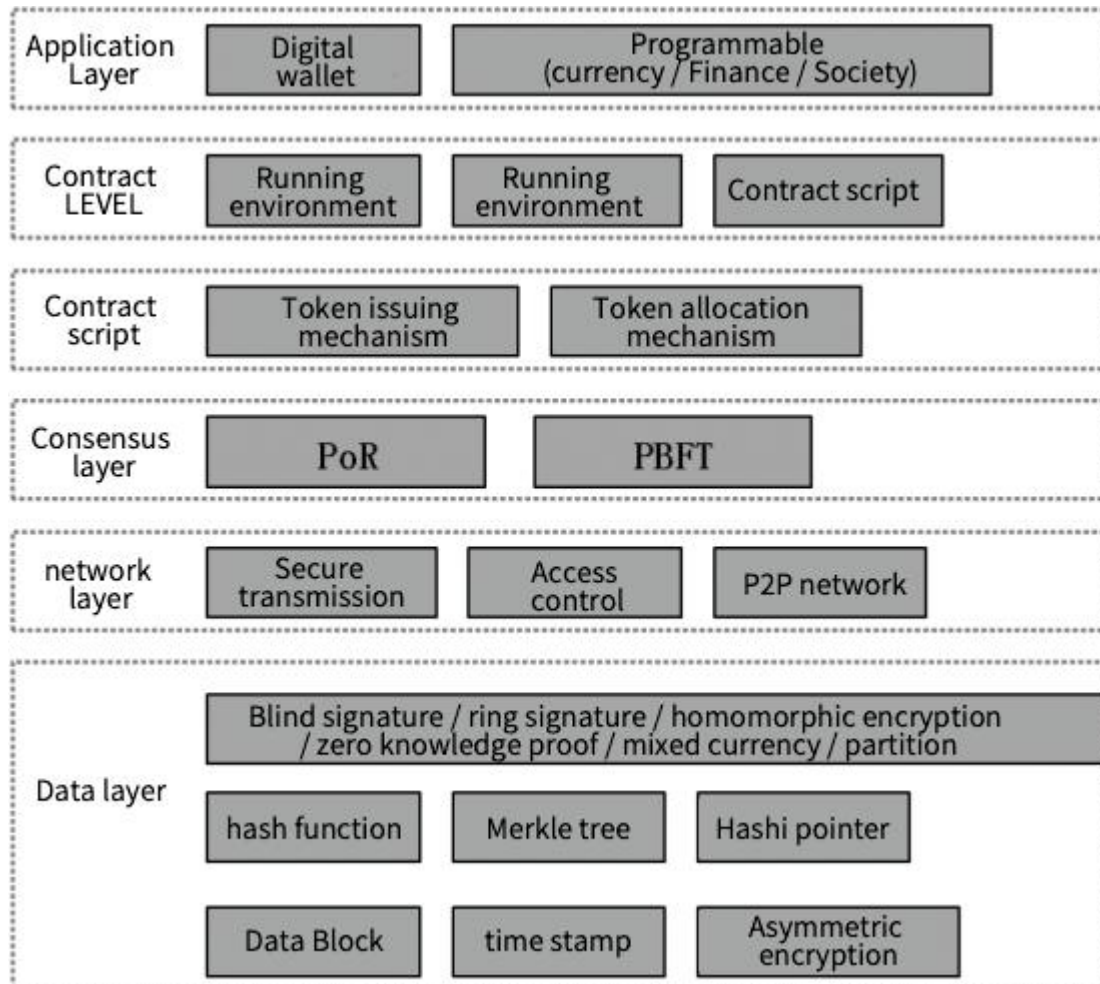
Figure 7-1 blockchain Technology Architecture

7-2 product architecture and framework

Functional layer	assembly	Corresponding developed modules
User level	User function business function management function	Query function, account management
Service layer	Access management account management function	Project generation, project generation, contract generation, contract execution, block querier
Core layer	Consensus smart contract encryption	Blockchain node registration management, consistency module, communication protocol, ledger AP

Figure 7-2 product structure

We have fully studied the structure of the practice scenario of reading for all and the actual and potential demands of different types of participants in reading activities for all. At the same time, we have also studied and extended various formats in the whole field of education and education. We have made the following conclusions on the structure and interrelationship of various formats of the industry chain

A) the format structure in the field of chemistry and education has statutory screening standards and practice standards, and it also has universal and universal significance in identifying the main body. However, there will be differences between "for" and "for" technical identification. For example, in terms of definition, the consensus meaning of "learning professors" is universal, but there are practical differences in connotation between Chinese "learning professors" and German "learning professors". In the system, the professor of learning is also simply defined as content grant, which can also be content grant. Readers can also be converted into content and granted "storytelling" content based on readers' sharing. According to this, the technical architecture and blockchain response of Ledu chain and rufc system are not based on a simple definition of "industry type" and "industry type", but a composite structure of "type" and "type".

B) The system constructed by technology is convenient and universal, which can best be defined by the meaning of technologyParameter. The reading chain for the whole people is special, which is the difficulty of the reading chain; Different from blockchain's emphasis on universal application, Le Du chain and Le Du China aim at or start from the whole people's reading, which is a completely

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Chinese response scenario. Therefore, technology construction highlights the Chinese response scenario, and the initial stage of Le Du chain does not pursue "all things are right" At this stage, we only focus on the national reading and its extended characteristics of Chinese educational formats.

Blockchain function module

Consensus mechanism

The consensus mechanism is the core issue of blockchain technology, which determines the formation rule of blockchain, and ensures the honesty of each node, the fault tolerance of account book and the robustness of the system. The consensus mechanisms of Chang include pow, POS, dpos, Paxos, pbft, etc. Based on the different scenarios of blockchain technology and the characteristics of various consensus mechanisms, it can be evaluated and compared from performance efficiency, resource consumption, fault tolerance, regulatory equality, individual.

The function component of consensus mechanism has the following functions:

a) hold multiple nodes to participate in consensus and confirmation;

B) to verify the validity of the relevant information submitted by the chain node by holding a single node.

c) Prevent any unique consensus node from entering information record or modification in the blockchain system without the confirmation of other consensus nodes;

d) It should have definite fault tolerance, including the malicious error of physical or network failure of the node, the malicious error of the node under the control of the

method, and the uncontrollable error of the node with uncertain behavior.

(Smart Contract)

Proposed by Nick Szabo in 1995, his definition is: "smart contracts are a set of commitments defined in digital form, including agreements in which the contract can participate and implement these commitments on."

Commitment defines the nature and of smart contracts. The form of number means that the contract operates in the form of computer executable code. As long as the participants reach an agreement, the rights and obligations of the smart contract construction are carried out by the computer or computer.

The smart contract based on blockchain can not only give full play to the advantage of low cost and efficiency of smart contract, but also avoid malicious interference of normal execution of contract. The smart contract is written in the form of code in the blockchain, and the data storage, reading and execution process can be traced, transparent and tamper free by using the blockchain technology. In addition, the state machine system constructed by the consensus algorithm of blockchain can make the smart contract work effectively.

The functional components of smart contract include:

a) Development and operation environment, including:

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

2) static and dynamic inspection of contract contents;

3) Provide transport carrier, such as virtual machine, etc;

4) For the smart contract that interacts with the external data of the blockchain system, the influence scope of the external data source shall be limited to the scope of the smart contract, and shall not affect the overall operation of the blockchain system

b) Storage environment, including:

1) Prevent tampering with the contents of the contract;

2) Support the upgrading of contract content under multi consensus;

3) Support to write the contract content in the account book.

Encryption security technology

In the blockchain, the public-private key pair with symmetric encryption is used to build the trust between nodes. The symmetric encryption algorithm is composed of the corresponding public key and private key. Anyone who knows the public key of the user can encrypt the information of the public key pair of the user and interact with the user to realize the safe information. Due to the dependency between the public key and the private key, the information can only be decrypted by the user who holds the private key. Any unauthorized sender of the information can decrypt the information.

The encryption function component has the following

functions:

A) hold the international mainstream encryption algorithm, such as AES256 and other symmetric encryption algorithms.RSA, ECC and other symmetric encryption algorithms;

B) we hold symmetric encryption algorithms such as SM4, SM7 and so on.SM2, SM9 and other symmetric encryption algorithms;

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

d) The encryption algorithm should be able to resist cracking, and the security of the encryption algorithm should be reviewed regularly. If necessary, the encryption algorithm with computational complexity should be cracked more frequently.

data storage

The block data structure is in the blockchain, and the data is stored permanently in the form of . The time stamp of blockchain solves the problem of block sorting. When the new block is completed, the hash value of the last block is recorded, and the block cryptography link is realized. Each block records all transaction information sent during its creation. In the blockchain, if you want to store some strings and JSON objects, you can expand the ledger structure chain to store them; if you want to store more multimedia pieces like pictures and videos, you can store the hash value of pieces on the chain, and the original pieces can store the cloud storage to the cloud.

Data storage function components include the following functions:

a) Support persistent storage of ledger records;

b) Support multiple nodes to have complete data records;

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

d) Ensure the data consistency of each node with the same ledger record
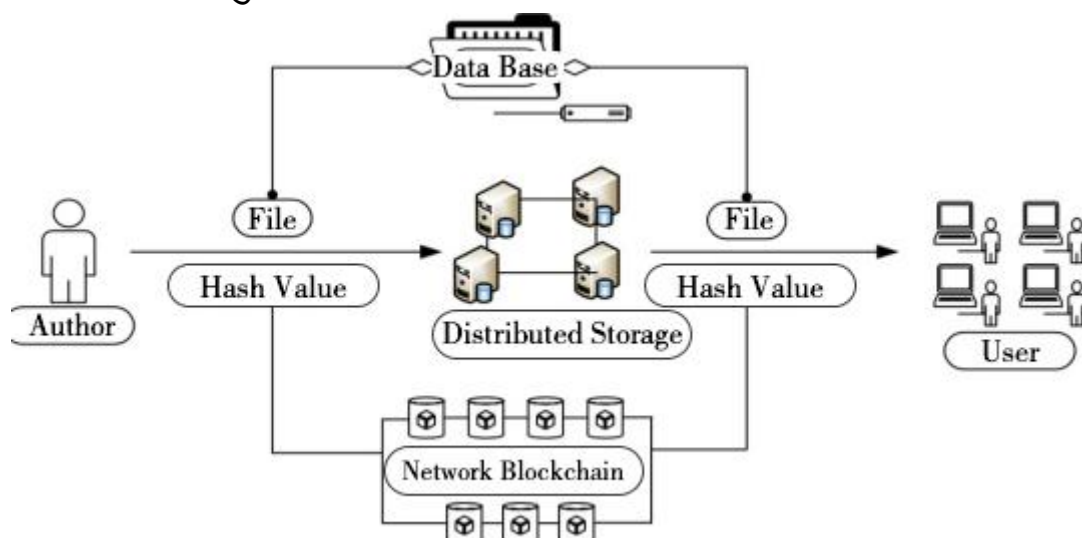off chain storage

Figure 7-3 out of chain storage

There are a large number of documents, graphics and video data in the system, which are not suitable for storage on the blockchain. However, in order to ensure the integrity of the data, we use the current hash encryption algorithm to input large files into the hash function, output a fixed length hash value, and store the hash value on the blockchain, so as to ensure the operation speed of the system, It also ensures the security of large files.

7.1.1 group 1 technology

Group technology is the core technology of blockchain. In the decentralized group architecture, block chain can realize the characteristics of independent of middle network. Blockchain network protocol adopts P2P protocol to ensure that each computer in the same network is equal to each other, each node provides network services together, and there is no "special" node. Different blockchain systems will develop their own P2P networking protocols according to their needs. For example, if there is a P2P networking protocol, there is also a P2P networking protocol in Ethereum. Core of group I technology.

7.2 POC demonstration

The bottom architecture technology system of Le Du chain has completed POC demonstration in Tongji District block chain technology laboratory. This is a very small number of cases that have been demonstrated by POC before for blockchain. The demonstration results show that the blockchain architecture of Le Du China has passed the prototype test in terms of technical feasibility in terms of design and technical path based on consensus mechanism,

platform architecture, smart contract, data storage outside the chain, multi signature technology, etc.
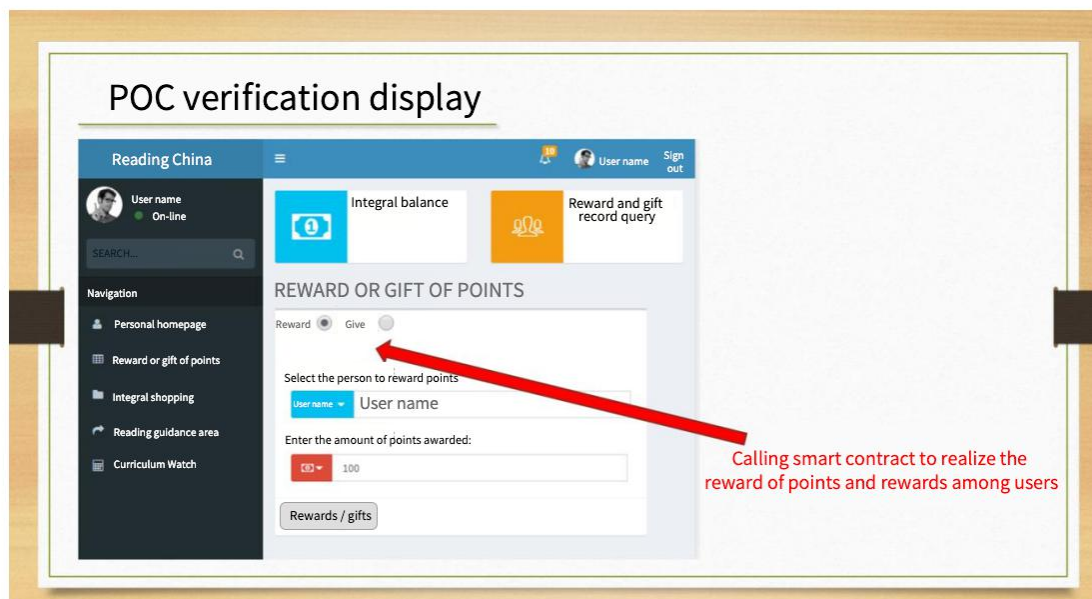
Through long-term and massive collection of individual data of readers (such as cross-border consumption, transfer, payment and other transaction data of Readers), online flow precipitation and flow fission operation main plate includes DAPP, blockchain education institutions, China going chemical exchange, cross-border payment, digital ticket, credit reference data, securities trading, insurance management, financial audit.

Build a data model, e-commerce: the wallet calculates and analyzes the data of the readers, and moves it into a picture of the readers' data (e.g. the end of the year's bills of China's Lu Fu Bao), showing the consumption data of the readers, wallet data, etc. Moreover, the construction of the reader's personal data system can be connected with the reader's credit system, so as to realize data sharing for readers in credit agencies, banks and other credit institutions. Readers

of data can also be rewarded with digital assets. Commodity comments can be trusted to record the readers' commodity comment data on the blockchain, so as to realize the authenticity and authenticity of commodity comment data. All transaction information, comments and after-sales information of the merchants are recorded on the blockchain, which is authentic and improves the credibility of the merchants.

8、 Token system

Application scope

Tokens are issued by the blockchain management organization, and readers can participate in the pre-sale on the platform. For customers, tokens can hire operators to provide services. As a kind of asset, tokens can be invested in the platform, exchanged between digital currencies on other exchange platforms, and exchanged between French currencies.

Negotiability

Platform readers can participate in pre-sale on the platform. In addition, the consumption on the platform should be circulated during the transaction of goods and services, and the transaction of any products can be carried out in the platform, which can improve the readers' activity and attract more readers to participate; it can also earn tokens by recommending friends to participate, so as to promote more readers to participate.

By inviting new readers to get tokens, we can bring more readers to the platform. At the same time, readers who have received the platform can enter the circulation of token consumption and exchange. Readers can get more welfare and value-added through token consumption.

8.1 economic model

The project adopts incentive measures to ensure the perfect operation of the whole system. All incentive capital and strategy information are recorded in the blockchain, which is open, selective and traceable. Each participant in the horizontal guarantee system is encouraged to get what they need, and the platform and readers get the economic returns they want. For excellent teams or individuals, you can get a fixed number of tokens as incentives.

8.2 governance mode

In the chemical and metallurgical system, any decision should be made within a fixed time, which will be changed according to the proposed content. If and only if a vote of sufficient interest is collected, the proposal will be implemented, otherwise it will be closed. In the process of decentralization In the governance system, it's not the rights and interests of the people, and the people with low rights and interests can unite to check and balance the rights and interests of the people. The content of decentralized governance includes but is not limited to exchange registration, currency registration, statistical function, mortgage token range, etc. these upgrades can be decided by voting together with participants in the governance system.

9、 Development planning

Initial planning

Through pre conference, exhibition, agency introduction and other channels to attract and contact more enterprises to deeply understand the intelligent platform, and carry out pilot cooperation. After the cooperation, the information sharing based on the public cloud platform between the partners will be achieved, so as to provide them with the accurate push intelligent service based on the target customers. After having stable customers, we can push forward and develop more customers, and conduct market research regularly to carry out business through the company's official and data platforms. Intelligent operation and marketing Planning, combining online and offline roadshow output synchronously, to start layout of reading + blockchain data collection node.

Medium term planning

Public chain 1.0 is online to develop public Chain Wallet. Open the standard of side chain and chain, connect the interconnected enterprises, and operate the chain. And develop the application of the central control platform of official interconnection to serve each node of the joint data. Turn on the "a intelligence" to serve the in-depth analysis and classification of data. From the middle stage of development, Xiang has stable customers, and also keeps close contact with them through official and data service platforms. Further expand business, build "data plus" in "official" and "data platform", in addition to serving

existing customers, attracting more relevant customers and providing services for more manufacturing industries. Expand the group's business to Europe, North America and other places, and push the latest technology and concept of blockchain to the world. In the later stage, we can participate in the market-oriented integration, innovation, intelligent R & D and design. In the medium term, it will step up the market already in the early stage, and enter the market through the official data platform, data platform and enterprise cooperation and link channels.

Future planning

Maintain the public chain, update the online and offline technology update and disclosure of public chain 2.0, maintain the data collection end + data demand end, and optimize the data storage, right confirmation and value circulation of readers at the C end. Launch super node campaign. Optimize and upgrade business model 2.0, implement and maintain. With the development of the project to the later stage, the overall operation tends to be mature, and the amount of equipment data in the future is bound to be unprecedented. It is necessary to build standardized data to provide customers with better service and business expansion. In addition, it is necessary to build a new business model based on the supply chain optimization linked by the market chain and the intelligent marketing model accurately identified by the readers. The accumulation of the first and the middle term and the expansion of the business are within It's easier to enter the market with the brand background.

10、Profit model

Data profit

Exhibition in the emerging data industry before, Le Du + global individual Le Du of blockchain

The industry chain mainly aims at the consumption data field, and its profit includes the following modes:

(1) Solution: provide enterprises or institutions in the consumer industry with solutions and structures Set of data system, and then regularly charge readers for maintenance and upgrading profits in the form of: fees for building and upgrading data system + maintenance / level service fees.

(2) Infrastructure: it can be used as database, data source, data cleaning and data processingThe basis of hardware and software integration, CRM Bi and so on. Profit collection type, according to different facilities, can be bought out, or on-demand, on-demand, on-year, on-demand,It is more flexible.

(3) Business response: the data analysis of the main fee to the consumer industry can apply the analysis results to the industry and provide guidance for the enterprise in strategy, product, marketing, etc. The profit collection formula is: charge on demand.

Trading profit

Another kind of profit pattern is to gain profits through transactions, such as air C transaction and exchange, digital asset transaction renewal, asset safe custody and withdrawal service fee, among which digital asset transaction, AILC annual currency transaction and other transaction renewal fees will become an important part

of stable service revenue in the future.

Public chain profit

The private chain and side chain of various industries, such as the simplification of digital currency settlement process, the convenience of operation, the real-time and cross regional characteristics of settlement, make the operation cost and transaction cost of digital currency lower. Therefore, the whole settlement cost will increase and decrease correspondingly On the contrary, each industry and industrial blockchain state will contribute to the data of gongfengyu and the profit of advancing production.

10.1 financial profit model

The "state financing" mode created brings practical and simple solutions to online and offline collection and payment, and digital asset circulation. The mainstream block marketing state system of Lirong is connected with block value education institutions, decentralized exchanges, and data: intelligent, car link, driving image Products and services in industry control, smart city and other fields: enterprises only need to make these products into costumes on this platform to attract readers and investors.

11、 Issuance plan

1) Chinese Name: Le Du chain

2) English Name: LOD chain

3) Total amount: 78 million

4) Wallet mechanism: accumulation, compound interest calculation, cash dividends

5) Detailed rules

The total number of issues is 78 million, with data technology accounting for 12.4%, market circulation accounting for 16.6%, DAP developers accounting for 14.4%, community governance and incentives accounting for 31.4%, and foundations accounting for 25.2%.

LOD is based on blockchain technology distribution and management

LOD can be used for ecological circulation and global business support, such as flow transfer, acceptance, exchange, incentive, currency transaction, investment and financing, etc.

11、 Introduction to operation team

Foundation

Development, construction and governance selection mechanism We advocate and promote the smooth progress and development of capital, promote the safety and harmonious development of the open-source society, as the founder of the U.S. technical team, and invite to the U.S. international top blockchain research and development team, and the IOT foundation through the blockchain data structure, to realize the blockchain of authors, readers, platform transactions, readers, authors, partners, third parties, etc To achieve win-win benefits, ensure the effectiveness, sustainability and safety of project management, promote the development and promotion of blockchain technology, combine blockchain technology with more scenarios, realize the functions of giving and trading, and establish the ecosystem of blockchain through a series of joint efforts such as general promotion incentive marketing,

electric currency incentive and author incentive.

`LOD Chain`

Name of capital	Nature	level	Rotation
Yixian capital	Private Offering Fund	Leading Party	Angel wheel
Sky capital	Private Offering Fund	Combined lead	Angel wheel
Jia Shang fund	Private Offering Fund	Combined lead	Angel wheel
Celestica fund	Private Offering Fund	participate in	Angel wheel

List of investment institutions (in no particular order):

Singapore project released, China Yixian capital investment!

Team members

The members of the technical team are enthusiastic, ambitious, dreamy and capable. They adhere to the professional attitude of integrity, professionalism, responsibility and service. The main items are management. They have profound technical background, master core technology, rich professional knowledge and excellent project management ability. The team is composed of experts who master blockchain technology and experts with rich experience in the industry The future landing is guaranteed.

Joseph

Joseph's work in charge of product and business was completed in 2013 at the Massachusetts Institute of Technology (American Provincial Institute of science and Technology) with a degree in computer scienceand electrical engineering.

Serve as the main responsibility of infrastructure metamask of consensys company, having deep experience and drola's opinion on smart contract security audit and DAPP (distributed response), good communication and expression ability, adaptability and problem-solving ability, and responsible for market development, project coordination, operation management, etc. Be responsible for the formulation, implementation and completion of all management regulations, systems and operation process material transfer, establish the relationship with the relevant departments of the company, and ensure the good external environment of the company carrier In the project, he is mainly responsible for public relations: be responsible for the relationship liaison of relevant industry associations, expand and maintain the relationship, smooth communication mechanism, promote the combination of affairs with the company's commercial standards and strategic planning, be familiar with and correctly interpret the relevant macro and micro policies of the country and the jurisdiction area, cooperate with the company's relevant businesses, provide information and suggestions to the company in time, and be familiar with and familiar with the evil attack department Organizational structure and process, with strong soft sensibility to relevant policies, and strong expression ability of words and I am familiar with writing. Have strong ability of quick thinking, strong observation and strain energy, and have rich relationship.

2.Alexander

Alexander is responsible for the development of blockchain related technologies in project. Complete the project "regular development" to solve the technical problems in the development: responsible for the development of blockchain related technologies including point-to-point network design, encryption technology application, implementation of distributed algorithm, data storage technology and other technical development: responsible for the formulation and review of design "case" and related verification and test "case", Negative research analysis of the underlying public chain

Develop, implement and improve the encryption protocol, design the security protocol and architecture, and be responsible for the design and development of the perfect security horizontal block of the research project: it is a blockchain level engineer, who has a real battle experience in blockchain, encryption algorithm, digital wallet, etc. and has a 12-year Linux / Windows environment C / C + + program design and development Proficient in POSIX multithreaded programming and STL maintenance under Linux, partial writing of SHEL and makefle, proficient in data structure, regular algorithm and IOT wind, etc., intelligent algorithm with rich experience in Internet development, rich experience in data acquisition, analysis and mining, responsible for regular management and technical maintenance and update of the entire technical team.

3.Vernon

Vernon is an architect in charge of system development. He designs framework wells and organizes animals and codes according to product requirements and system requirements, and writes: manage and discuss product processes and product optimization strategiesResponsible for data product development, construction and regular maintenance and update. Proficient in SQL server and other database technologies, he can skillfully use stored procedure transaction, index, view, full search, query optimization and other technologies. He is an experienced UX and network platform designer. With more than 10 years of experience in e-commerce station design and development, and proficient in a variety of computer software, blockchain should explain the case, bangchangying cryptography, security protocol cloud computing security, etc., apple in has 9 years of experience in embedded software and hardware development and management, and has a full understanding and unique understanding of the field of new mathematics and economics.

4.Randolph

Randolp h serves as a consultant in the project and is responsible for your relevant policies. Technology landing: responsible for overall design and performance design of LOD, organizing overall control and coordination of R & D, design and technical service, and building talent team in time:Organize technical research and development and foreign cooperation in the field. He has rich research experience and relevant field research law system, is familiar with the corresponding research tools, has strong logical thinking ability, writing ability and expression ability, professional ability, and is engaged in the research of relevant industry leading cities. Have the ability to design the framework of technical proposal, and have three years of experience in developing electric system independently.

12.1 expert consultant

School of political economy, with an honorary degree in economic law and accounting, and a master's degree in source management engaged in blockchain technology research for more than years. It is an internationally renowned blockchain expert who has participated in the development of several famous blockchain projects.

1、Lawrence

Lawrence came to Birmingham, UK, graduated from London political and Economic College, and obtained the honorary degree of economic law and accounting. He has a master's degree of source

management and has been engaged in blockchain technology research for more than years. He is an internationally renowned blockchain expert who has participated in the development of many famous blockchain projects.

2、Kenny

Kenny Hua is a senior programmer at Tartu University. He has more than 6 years of data analyst and quality manager experience. Good at rtableau and python analysis, spark and python programming bigdata driver program. The server that once managed the procedures of health care, managed the quality control system, and analyzed the medical technology.

3、Stephanie

Stephanie is the joint founder and operator of blockise, providing blockchain start-ups with customized solutions, from seed fundraising to marketing and community construction, to crowdsourcing transmission and final exchange listing. Max has strong cross cultural skills and business contacts and partners network. Since 2016, he has been investing in cryptocurrency, and has participated in many projects as an investor and consultant since then

4、Magnolia

Blockchain level engineer, with practical experience in blockchain, encryption algorithm, digital wallet, etc., has more than years of experience in C / C + + program design and development in Linux / Windows environment, is proficient in POSIX multithreaded programming under Linux to write shell script and makeple, master data structure, regular algorithm and depth, degree, genetic and other intelligent algorithms. Intelligent algorithm.

5、Christophe Brandon

Senior technician, senior system software engineer of University of Pennsylvania, proficient in a variety of computer software, blockchain application explanation scheme, good at application cryptography, security protocol, cloud computing security, etc. Worked for Apple Inc. for 9 years in embedded software and hardware development and management experience.

12、 Risk tips

For purchasers participating in platform exchange, please read this book carefully, fully understand the technical characteristics, risk and return characteristics, comprehensively consider the risk tolerance ability, rational participation and prudent decision-making. As a buyer, both

the maker and the investor may face the following risks: policy risk, economic cycle risk, development progress risk, network security risk, talent loss risk, market competition risk, transaction risk, etc.: policy risk changes in the future may have positive or negative impact on the project.