HCC
Health care chain

Health care chain

Project White Paper

Traceable medical ecosystem

Contents

Abstract DisclHCCe

HCC (Health care chain) is a large health care industry + blockchain project initiated and operated by a large-scale foreign medical group and charity organization and a group of technical geek volunteers.

The team has been committed to creating an independent, closed-loop, large-health + blockchain ecosystem based on the three core sections of hcc (hcc token)-medical public chain (hcc public chain)-big health digital asset exchange (hcc network); we It is planned to successfully build the world's leading blockchain ecosystem of 100 billion-level big health and medical vertical within 5 years.

The big health and medical industry is the eternal sunrise industry of human society, because health is always the rigid demand that human beings pay close attention to; and the blockchain industry with g, technical systems and operating systems, incentive systems, etc.) as the core engine to further promote the development of the aircraft carrier in the global medical industry? In this way, everyone can jointly build and share a global medical value network system in the new era of blockchain. This is why the hcc project was born and its biggest mission.

This project has a wealth of medical application scenarios, including medical information security sharing, member health and life management, efficient supervision of the medical system, fast payment of medical expenses, and traceability of health-care drug anti-counterfeiting, etc. The nodes in the ecosystem are connected to achieve seamless docking of all nodes in the ecosystem. In addition, the project will build the world's first public blockchain (hcc public chain) with the theme of social healthcare, and plans to plug in 10,000 medical companies Blockchain + wings allow medical companies to improve the efficiency of the industry and promote the efficient and coordinated development of the medical industry; at the same time, the Global Medical Asset Exchange (hcc network) is built to create the world's first digital asset exchange that serves companies in the entire medical field. It is said that hcc is a solid support industry based on the global 10 trillion-level big rising sun industry; hcc medical public chain is used as the blockchain technology foundation; hcc network is used as a medical digital asset exchange to build a blockchain ecosystem; at the same time, countries The public is the foundation of the largest consumer group; the large-scale health and medical products and services that core payment medium to create a large and healthy landing ecosystem; the perfect integration of these two ecosystems will lay a solid foundation for hcc's success.

Chapter 1: Current Status of Industry Development

## 1.1 Development Prospects of the Big Healthcare Industry

Health is the eternal pursuit of humankind.The results of a global survey published by the World Health Organization show that the world's population meeting true health standards only accounts for 5% of the total population, and people diagnosed with various diseases in hospitals account for 20%, and the remaining 75% are in a sub-health state. Health issues have increasingly attracted global attention. In this context, the global health industry has developed rapidly.

According to the data of the `` Feasibility Study Report on Pharmaceutical Projects '', the value-added of large health industries such as medical services, pharmaceutical production, and health management in the United States accounted for more than 19.5% of gdp, which is second only to manufacturing, services, finance and insurance, and real estate The fifth largest industry. The health industry added value of Canada, Japan and other countries accounted for more than 10% of the GDP.

China issued the "Healthy China 2030" Planning Outline in 2016, which identified the health industry as a pillar industry of the national economy. It was explicitly proposed that by 2020, the total scale of big health services will reach 8 trillion yuan, accounting for 8% of gdp The big health industry has become a new blue ocean after the Internet industry.

In the next few years, the market demand of China's global healthcare industry will continue to grow steadily. Data from the 2016-2020 Global Healthcare Industry Market Research and Development Prospect Forecast Report released by Report.net shows that by 2020, global The market size of the medical and health industry will exceed USD 6.80 billion, and there is huge room for future development.
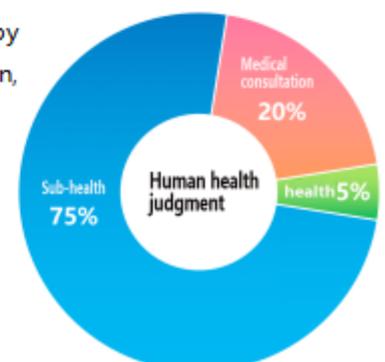
1.2 Pain Points in the Big Healthcare Industry Market

People who have experienced medical treatment must have also experienced this: When we are treated in one hospital and transferred to another hospital for some reason, we are often asked to redo a medical examination and imaging that has already been done. Redo inspection and imaging are mainly because the medical information generated by a previous hospital has not been transferred to the new hospital. The medical information has not been effectively exchanged because the current medical information is managed by the medical institution. Government regulations on medical information There are many restrictions on the transfer and sharing of this important personal information. The most famous and widely cited is the American hipaa Act (Health Insurance Circulation and Liability Act), which details all medical service providers that handle medical information And institutions must comply with the rules to ensure the security of medical information. According to the hipaa bill, the main body that can handle medical information is the exchange and sharing of medical information in these countries is not easy. In some cases, many medical data are still not digitized, which also makes medical information exchange difficult. According to the United States Disease Prevention and Control The center's survey revealed that only about half of medical institutions have full-featured electronic medical records / health systems.

Under the current management system oriented by medical institutions, the reliability of medical data and the transparency of data use cannot be guaranteed, and there is even the risk of data loss and hacking. At the same time, it is difficult for hacked medical records in the United States reached 112 million. It is reported that the economic losses caused by the United States each year exceed 6.2 billion U.S. dollars,
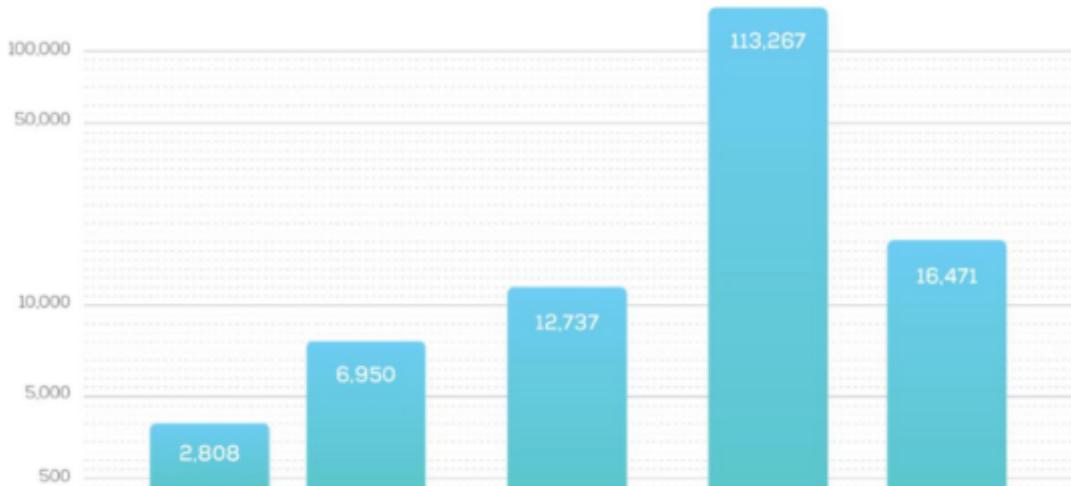
Due to the lack of medical information exchange, medical staff cannot easily obtain the patient's past medical information, which makes it difficult to provide patients with the best medical services, but also needs to perform unnecessary repeated inspections and medical imaging, increasing the burden of medical costs. The research report states that if Medical information can be effectively exchanged, so clinical examinations and radiological examinations performed in the emergency room will be reduced by more than 50%. Under the current medical information management system, the reliability of medical information cannot be guaranteed and information exchange is difficult. It also causes huge losses in the insurance field. The report says that the annual global insurance losses due to false claims amount to 487 billion U.S. dollars, accounting for 1/5 of the total annual medical expenses in the United States. In addition, medical institutions sometimes arbitrarily distort or change medical records It has also become a serious social problem.The existing medical information system cannot systematically solve this problem.

At present, the problems of the medical information management system are not limited to these. Now, medical data is increasingly required by institutions and enterprises for the development of medical research and medical care projects. Most medical data is hidden. Patients' personal identification information is shared through the hospital. To research institutions and companies, this situation has also attracted more and more social attention. In addition, disputes over data ownership continue. Some countries, including the United States, allow medical information that is not personally identifiable to be shared externally Use, but since it is not difficult to re-identify personal information through various methods such as social network services, it also means that this method of data sharing needs to be improved.

1.2 The Rise of Blockchain Technology

In 2008, Satoshi Nakamoto published a paper titled `` Bitcoin: A Paer to Peer Electronic CasHCCSystem '' on the Bitcoin Forum.He first proposed the concept of blockchain, and from this he constructed the technical basis of encrypted transmission of transaction information and Bitcoin. The network, and since then digital currency has become the largest application scenario of blockchain technology, and has developed rapidly.

Since the establishment of the Bitcoin digital currency platform in 2009, the Bitcoin system has been operating steadily, and it has automatically realized the process from issuance to transaction circulation. At the same time, the blockchain as a basic supporting technology has gradually become independent and applied to more scenarios, giving birth to many A digital currency based on this concept, such as Litecoin, Dogecoin, Ripple, etc.

In 2015, with the concept of the smart contract platform brought by the Ethereum open source project, it realized the registration and transfer of various currency market. As of December 2017, there are nearly 1,000 types of digital currency that are counted in Coinmarketcap. The total market value exceeded 300 billion U.S. dollars.

Because the blockchain solves the problem of valuable communication and decentralization, it is considered to be the most subversive technological innovation since the invention of the Internet, and it is also known as the next-technology and actively carrying out industrial layout, and the business application scenarios have also touched more and more industries and fields.

1.4 Features of Blockchain Technology

1.4.1 Decentralization

In a traditional centralized network, an attack on a central node may damage the entire system; while a decentralized network uses distributed records, distributed storage, and point-to-point communication.The rights and obligations of any node are equal. The data blocks in the system are jointly maintained by all nodes. This avoids being manipulated by a person or organization, and no matter whether any node is attacked or stops working, it will not affect the operation of the entire system.

1.4.2 Detrust

In a blockchain system, transactions can be conducted without any trust between nodes, because the operating rules of the entire system are open and transparent, all data content is also public, and all nodes must operate in accordance with the same transaction rules. This rule It is based on consensus algorithms instead of trust.Therefore, within the rule and time range specified by the system, nodes cannot and cannot deceive other nodes, naturally without any third party intervention.

1.4.3 Immutable, encrypted security

The hash algorithm of the blockchain technology can map arbitrary raw data, whether it is pictures or music, to a specific number to become a hash value. As long as there is malicious tampering by the node, the hash value will change and it will be easy to identify. So once the data is verified and added to the blockchain to be stored, unless more than 51% of the nodes in the system can be controlled at the same time, the modification of the database on a single node is invalid. If any node wants to subvert a confirmed As a result, the price it pays will be much higher than the revenue, so the data stability and reliability of the blockchain is extremely high.

1.5 Blockchain Reconstructs Big Healthcare Industry

At present, the blockchain has penetrated into many industry fields.The most mainstream financial market naturally need not say more, and the big health field will be the second largest application market of the blockchain after finance.

immutability of data are fully applicable to aspects such as big health.Developing a decentralized big health data cloud service platform using system with universal participation and collaborative construction, ensuring the authenticity and credibility of its medical processes and results, and thus reshaping the health industry.

Chapter 2: hcc medical ecosystem solution

2.1 What is hcc?

"Redistribute the value of personal medical information,
Improve the quality of medical visits and services and accelerate the
decentralization of personal medical information. "

The hcc team aims to achieve the decentralization of personal medical information based on the expertise in the medical field.hcc implements the transformation of medical information management systems from medical institution-oriented to patient-oriented to achieve existing medical information The reliability, transparency, and security of information exchange that the system does not have.

HCC (Health care chain) is a smart contract built on the underlying technology of Ethereum.It is a decentralized medical ecological chain, which is mainly used to solve the pain points of uneven medical resources, opacity, and opacity of medical charitable donations. Based on the stored medical information, the development of various high-quality health care-related services will be provided. It will also provide a unique opportunity for all participants on the platform to obtain rewards.

hcc's mission is to improve global health and medical quality, reduce the cost of treatment and create a win-win large health industry community. The team focuses on developing a series of management and production tools for different areas of the medical industry. The use and implementation of these tools Individuals can get hcc tokens as rewards.They can use the tokens to pay for medical treatment, purchase products from the health industry, and even join the construction of the health industry.

hcc provides solutions and support for the healthcare industry through the blockchain.The hcc public chain will be committed to becoming a fintech and data logistics platform for the global health industry.

All service industries that aim to achieve long-term success rely on customer patients is of unparalleled value. But we need to create a community first to achieve this, which is exactly what hcc Primary goal.

The hcc team understands the challenges faced by the medical industry and provides solutions based on the blockchain and token economy. Implementing blockchain-based industrial cryptocurrencies (hcc) can incentivize the industry to break through most existing and future restrictions.

2.2 Why design hcc?

From the perspective of the global medical industry, we hope to combine the underlying technology of the blockchain, the value network thinking, and the blockchain business operation system to create a brand-new medical solution that can meet the needs of the global public's all-round and full-cycle health management. Blockchain ecosystem.

From the perspective of the development of the blockchain industry, we also hope to create a new blockchain application ecosystem. Because the blockchain is facing many challenges both from a technical perspective and an industrial application perspective, the main issues include:

Lack of a new type of smart contract platform. Due to the lack of connection with the real society, the Bitcoin ecosystem and the Ethereum ecosystem have restricted the wide application of various industries;

The existing blockchain system is highly closed. At present, most smart contracts only accept on-chain data as trigger conditions, and lack interaction with the real world.

Consensus mechanism itself lacks flexibility. Because the participants are different, the requirements for the consensus mechanism are different in the public chain and the alliance chain;

Lack of strong application in actual industry. At present, except for digital currency as the largest application of blockchain technology, there are no strong application cases in other industries;

So we hope to build a brand new blockchain ecosystem-hcc Herman chain, as the global future value transfer protocol of the big health industry, and promote the development of the whole big health + blockchain industry.

2.3 Design principles of hcc medical public chain

At the medical industry level, in response to various problems of blockchain by hcc public chain (hereinafter referred to as hcc) is as follows:

1.Introduce a newly designed master control contract, and use the common input of off-chain data and on-chain data as trigger conditions to complete the execution of the contract;

2. Focus on increasing functional requirements such as product source tracing, information disclosure, membership management, health evaluation, and full-service technology;

3.Flexible consensus mechanism for hcc public chain;

4.Increase consideration of industry compliance and provide optional modules such as identification;

5.Using the data under the hcc chain as the trigger condition of the main control contract to achieve interaction with the real world.

2.4 hcc's vision

hcc's vision is to become a large health and medical value ecosystem with everyone involved.

We will use HCC as the basic platform to circulate currency and support other mainstream virtual currencies in the future.It is expected to include: ETH, BTC, BCH, LTC, ETC, EOS and XRP. Users can complete the automatic exchange with HCC in the HCC Wallet wallet. At the same time, considering the nature of the HCC globalization platform and the compliance requirements of different countries and regions, HCC does not support the legal currency recharge and circulation of any country.

Sustainable development: In order to achieve the sustainable development of hcc and avoid the fragmented development structure and differentiation of the underlying structure, the hcc team will develop a sound governance structure for internal operations, market operations, market value management, code management, financial management, Management of supply chain management and privileged operation scope. At the same time, the governance structure will be continuously updated with the development of the community, and the introduction of monitoring and supervision functions, rule formulation and change control management, etc.

2.5 hcc operation mode

Sharing medical and health big data is an important guarantee to improve the quality of medical services. The Personal Health Record (PHR) stores information about the medical and health activities of patients throughout their lives, and these data are generally stored in the information system of medical institutions, resulting in data Fragmentation, the problem of being difficult to be queried and accessed, so sharing medical data has become a challenging problem in this field. The HCC team studied the blockchain-based medical information sharing platform by analyzing the shortcomings of traditional medical information sharing platforms. Through Ethereum, the DAPP system-Health care chain of the medical information sharing platform was implemented.

First, a new double encryption logic was proposed to protect the privacy of the realized the credible interaction between the two parties' data by managing the contract; finally, In order to solve the problems of serious waste of resources of the Ethereum consensus algorithm and the instability of phr block generation time, a phr-oriented consensus algorithm is proposed to ensure the stability of the medical information sharing platform in terms of performance. Finally, through the medical management function. Then, for the entire platform from the CPU consumption and Perform performance test of the phr block generation time on both sides to ensure that it can meet the level of functionality and performance.Needs.
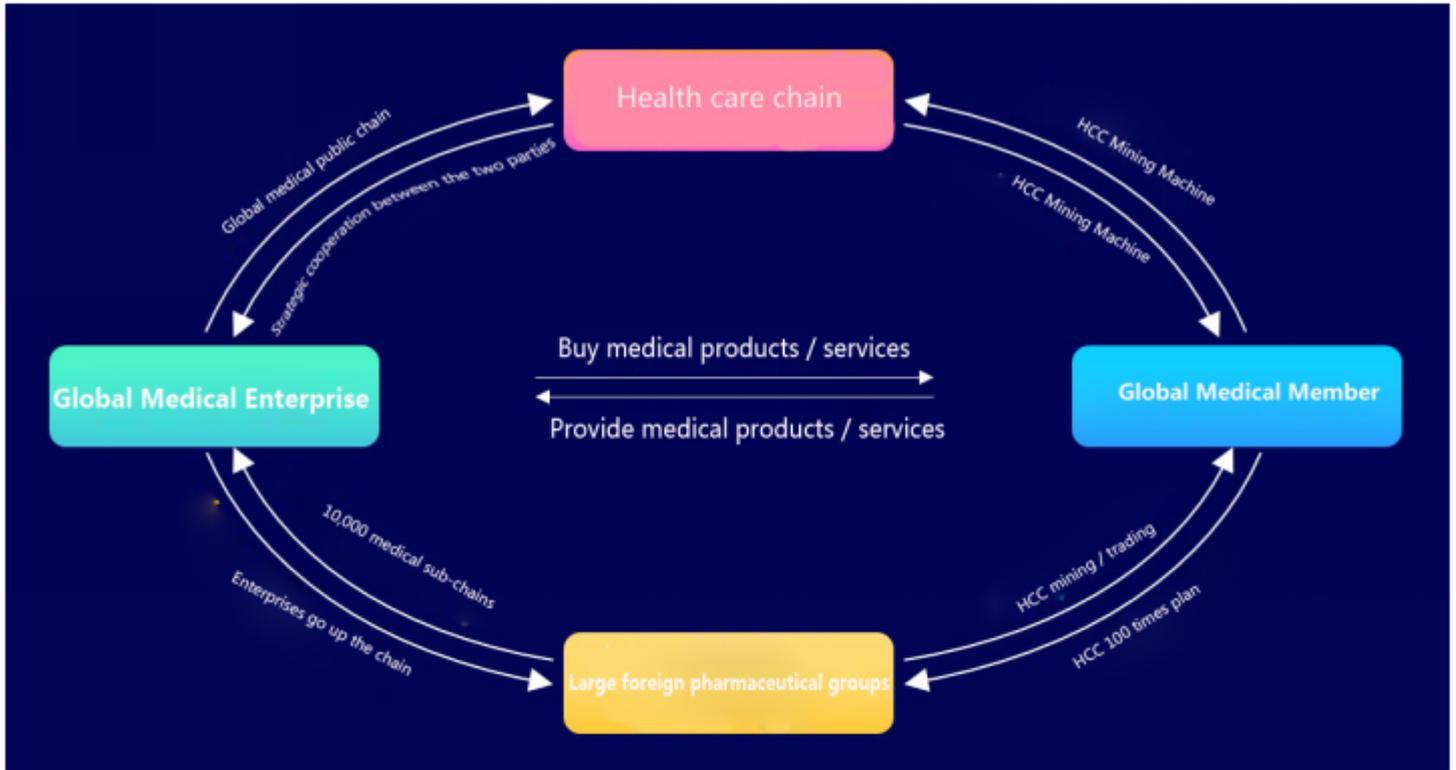
2.6 hcc membership value

With the progress of society, modern people pay more and more attention to health; but traditional medical industry intermediaries will charge up to 30% of the commission cost. Based on this status, hcc hopes to establish a decentralized medical platform through blockchain technology To increase transparency for medical care and increase physician profits and reduce patient costs by cutting middlemen.
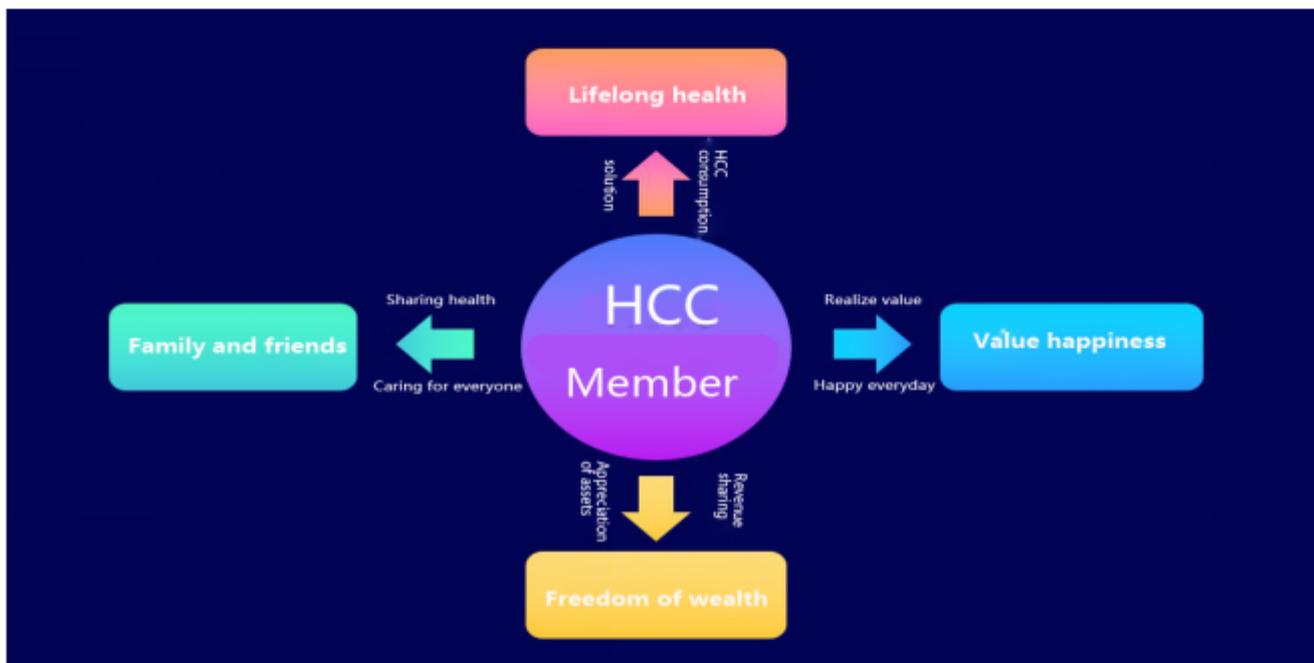
hcc Medical Token is designed to reduce costs and increase the efficiency of the data sharing process by developing a universal network, the solution is said to automate contract reconciliation and refund processes. From drug manufacturers to wholesalers to hospitals, any People will record drug delivery on the blockchain. This means that at each step in the practical distribution process, the computer network will guarantee the origin of each drug and the authenticity of the shipment process, making it more difficult for thieves to handle the theft. And prevent counterfeiting by counterfeiters.

Attracted by the broad prospects of smart healthcare, many Internet companies have started to deploy the medical industry, and medical informatization is approaching the critical point of explosive growth.

The hcc (mtt) medical token fully meets the characteristics of security, trust, traceability, and controllability, making the blockchain a new potential technology in the field of medical security, which is vital to the management of health data.

MTT has made blockchain a potential new technology in the field of medical procedures. In the pharmaceutical field, Blockchain also has obvious advantages to protect the supply chain and combat counterfeit medicines.

mtt builds a distributed health financial blockchain platform that reconnects health-related industries such as medical institutions, health insurance, doctor groups based on health medical big data, and forms a positive cycle of sports, health protection, medical treatment, and rehabilitation to create a medical Healthy financial ecosystem.

2.7 hcc medical public chain architecture system

2.7.1 System Overview

The overall architecture of hcc medical public chain (hereinafter referred to as "hcc public chain") is divided into 3 levels: blockchain protocol, component framework, and service platform. Using a top-down design method, first focus on the design of the blockchain protocol To solve the problems of data standardization applications according to specific conditions Custom extension requirements; Finally, development kits based on standardized blockchain protocols and component models to provide platforms and tools for the rapid implementation of enterprise-level blockchain applications .

● Blockchain protocol

The hcc public chain protocol, as the top-level architecture design, defines the aspects: current status, historical proof, ledger operation set, and contract instruction set.

● Component model

The "component model" is a framework model of the logical components of the blockchain, which is the implementation framework of the hcc health chain protocol. It includes a consensus network, ledger, persistence engine, and contract engine.

- Service platform

The "service platform" is a specific implementation of the upper layer blockchain protocol and component model, and consists of a gateway, a service, a node network, a SDK, and a set of toolsets.

2.7.2 Architecture Agreement

Blockchain is a new form of architecture: a. From a technical perspective, blockchain is a robust and secure distributed big data technology; b. From a business perspective, blockchain is a business-oriented Data protocols across multiple agents.

Blockchain will become a new form of value Internet protocol, which can make cross-subject business collaboration simple, efficient and secure. Unlike traditional Internet protocols (such as TCP / IP, HTTP, etc.), traditional protocols are all It is oriented to the communication process, and the blockchain is oriented to the business process.It is a new business-oriented architecture system.

2.7.3 Ledger Agreement

The ledger agreement is a standard model defined from a data perspective, and contains two definitions:

The standard format of ledger data consists of two parts:

a) "Ledger status" means the current real-time data content;

b) "Historical proof" indicates the characteristics of the ledger data and the characteristics of the data change history.

The standard format of instructions for reading and writing ledger data consists of two parts:

a) "Ledger operation set" defines the standard description of the type of write operation of the ledger data and the standard format of the parameters.

b) The "contract instruction set" defines a standardized contract language instruction format.

The purpose of defining the ledger agreement is to allow the data on the chain to be exchanged, verified, stored, and used in a standardized manner.It can cross the blockchain network implemented by different technologies and has nothing to do with the specific data storage implementation.
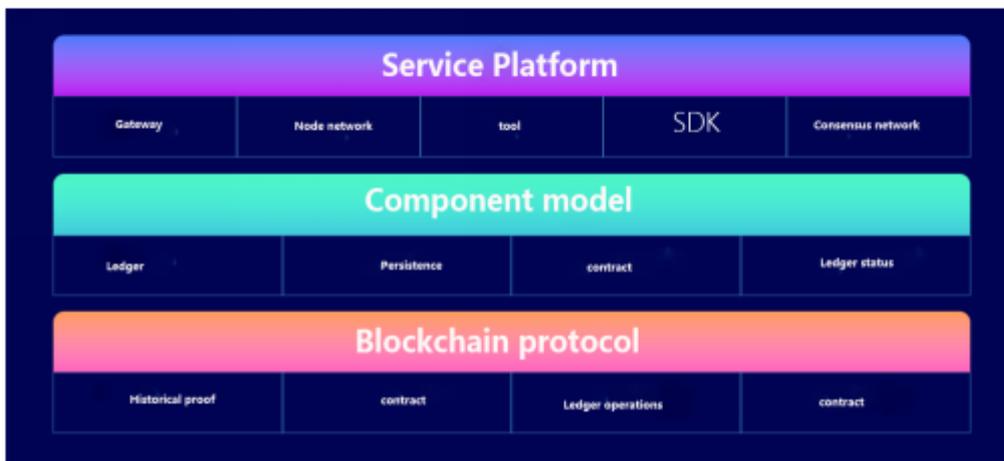
Chapter III hcc—Ecological Construction

3.1 Institutional community building

hcc is a self-developed blockchain public chain project.hcc is a token issued on the hcc blockchain-based Ethereum public chain and has all the characteristics of a blockchain.hcc is an important part of hcc's ecological construction.

In the hcc community, doctors, patients, and other relevant third parties can obtain, hold, and consume a certain amount of hcc tokens.At the same time, any user in the community can freely buy and sell the hcc held, thereby promoting hcc. Circulation and price stability.

The Health care chain rewards all good medical behaviors and behaviors that are beneficial to community construction by issuing HCC tokens. At the same time, the real-time ID and the mutual recognition mechanism between doctors and patients are used to trace and lock the destruction.

The doctors participating in the community construction, that is, the node doctors on the chain, as the value creator in medical treatment will receive the initial reward of hcc. The addition of new patients, the praise of linked patients, and other good medical practices will receive more token rewards from the community. Upload The hcc tokens to the blockchain can be confirmed and unique, so doctors own the ownership of their hcc, which can be used to reward their linked patients, purchase community services, build their own medical circles, etc.

Incentive measures to bring doctors back to the core medical positionAnd returning medicine to its essence.

Patients participating in community building will receive the unique hcc ID after real-name authentication, and the id can be mutually recognized and bound with multiple doctors. Real-name patients can get a certain amount of hcc rewards, binding doctors and continuing to use the community platform can gradually get more hcc. Patients in the community, as value creators of information, can be rewarded by linking doctors through good behaviors. Through community building, such as high-quality reviews, exposure of medical treatment experience, interaction with other patients, and authorization Health data and other behaviors are rewarded by the community platform for hcc. Patients can use hcc in exchange for doctor's services or other products in the community.

Third parties participating in community building can purchase hcc and use hcc to purchase patient health data authorization, consume hcc to publish advertisements to reward users who watch ads. For users with investment needs, not only can they hold and lock hcc to obtain more revenue, You can also use hcc to invest in the hcc medical investment and financing platform and enjoy long-term benefits and industry development benefits.

The design principle of hcc is to encourage more users to participate in community construction, and the better the community construction, the higher the benefits.

To comprehensively improve people's health, it is necessary to build a relatively complete medical and health service system and health protection system.

Health care chain medical token-HCC builds future health big data with unlimited value and future prospects.

3.2 hcc's mission and goals

hcc's mission is to improve global health and medical quality, reduce treatment costs, and create a win-win large health industry community. The purpose of issuing tokens based on hcc is to empower the majority of doctors and patients and other public groups to help hcc accomplish the above. Task. The team focuses on developing a series of management and production tools targeted at different areas of the medical industry. Individuals who use and implement these tools can receive hcc tokens (hcc) as a reward, and they can use the acquired tokens to pay for medical treatment in the future. , Buy products from the big health industry and even join the big health industry construction.

hcc provides solutions and support for the healthcare industry through the blockchain.The hcc public chain is the global medical industry.

All service industries designed to achieve long-term success rely on customer feedback, and the big health industry medical industry is no exception. Compared to any regulatory or central agency and power organization or individual, the patient-patient community is the best control of the industry We trust the value. But we need to create a community first to achieve this, which is exactly what hcc Primary goal.

hcc is well aware of the challenges faced by the medical industry and provides solutions based on the blockchain and token economy. Implementing blockchain-based industrial cryptocurrencies (hcc) can motivate the industry to break through most existing and future restrictions.

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3.3 hcc business model

hcc is committed to establishing a transparent and secure phenomenon-level distributed medical network.With the help of IoT technology, token incentive system, and token economic design, smart contract services are used to cut in from the doctor-patient co-construction plan to achieve data on-chain and redefine. The production relationship of participants in the medical economy, building a credit-driven decentralized economic model.

hcc has different on-chain modules for doctors (tod), patients / consumers (toc), and medical / commercial organizations (tob). For the d \ c \ b-end-based Medical ai and personalized large-scale health industry commercial companies supporting it.HCC will use existing medical resources to gather doctors while holding several domestic and global oral clinics. Users come from all over the world own needs, including online consultation and appointments by experts, online purchase of insurance products, online selection of medical institutions, etc.The business model of hcc is as follows:

TO D		TO C

APP

Advisory

Instrument ← Mall

CRM

Case ← IP build

Skill ← Education

POW+POS ← Mining

P O W   POS Hardware software

AD

Cloud mining

Investment and Financing

HCC

APP

Advisory

Mall → instrument

CRM

IP review

Oral cavity

Mining → POW+POS

AD

POS health care   P O W

Investment and Financing

Cloud mining
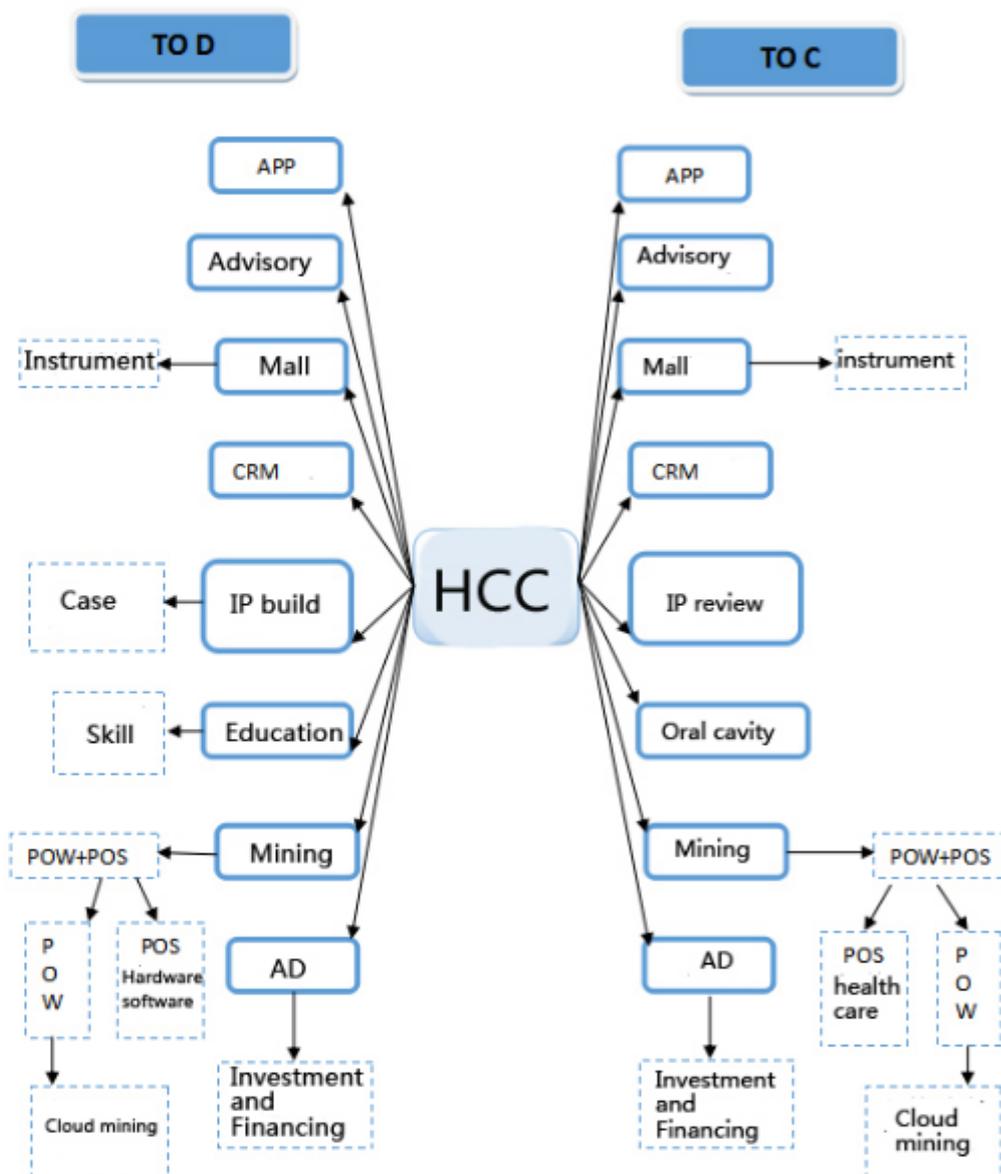
(1) Doctor users: On-shelf services (diagnosis, consultation), online traffic transfer offline, through personal pages to find funding for opening clinics, personal career development (training, advanced studies, advanced studies, etc.) financial sponsorship, education and training, doctor IP creation (Star Doctor Program), make hospital / outpatient investment, and provide personalized commercial medical insurance;

(2) Patient / consumer users: purchase medical services / consulting services in the mall, link doctors to offline stores, conduct reviews, sponsor doctors, invest in hospitals / clinics, conduct health mining, etc., provide personal data interfaces, and purchase personalized business medical insurance

(3) Medical institution side: Docking clinics and hospitals with cooperating doctors, set up institutions on the hcc platform, and open online medical institution pages. Medical institutions where doctors in hcc are displayed on the platform can attract visitors by authentic evaluation;

(4) Medical device institution side: Medical health care products, medical device consumable products, etc. are listed in the mall for consumers and other consumers to choose from. We provide an on-chain platform for businesses (medical institutions, medical companies) to advertise and go online Medical products, with the help of users to sell data to third-party research institutions or companies under license. Advertising revenue will be returned to ad viewers in the form of tokens, so that value creators (users) can truly enjoy the revenue.

(5) Asset management: Provide various types of hospital / outpatient and health industry product investment and financing platforms, transparent operation, publicize quarterly, annual financial statements, and regular dividends. At the same time, hcc provides guidance for hospital management.

(6) Vocational education: HCC officials will cooperate with the government and well-known experts and lecturers in the industry to organize vocational education lectures and online and offline courses for the majority of medical practitioners. Course content includes vocational training for medical care, hospital and outpatient management operation courses , Personal IP creation, institutional promotion marketing courses. The aim is to popularize the knowledge of medical blockchain, improve the skills of medical practitioners, enhance the operational management capabilities of medical institutions, and better achieve a win-win situation for doctor-patient co-construction.

(7) Government resources: The hcc project aims to gradually integrate the opaque industrial chain of the medical industry through cooperation with the government, establish a consensus of trust among doctors, patients, medical institutions, manufacturers, governments and other parties to create open source, Transparent dental medical industry chain.
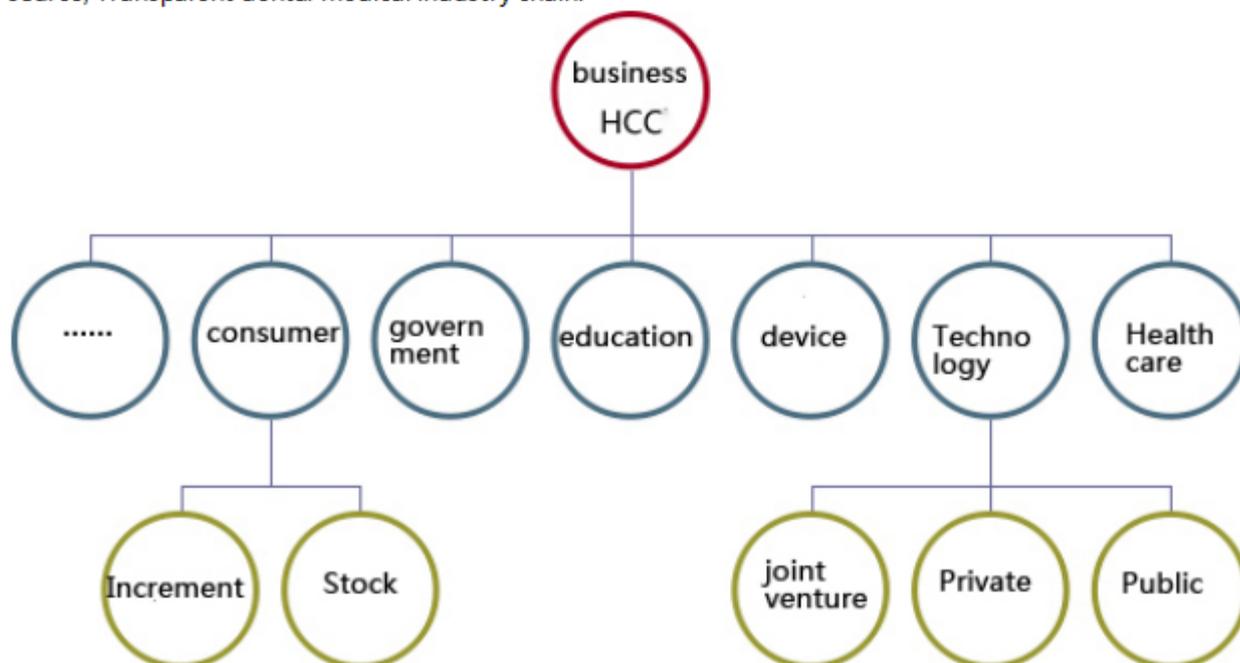
3.4 Blockchain-based distributed medical community platform

hcc adds medical data collection functions on the basis of a win-win distributed medical community for doctor-patient collaboration, which is divided into online and offline parts, including multi-party collaboration among doctors, patients and third parties in the ecosystem.

Due to the existence of data islands in the medical field at present, the larger the hospital ' s data, the higher the degree of fixation. Hcc starts from medical treatment. Due to the large number of private institutions in the country, the popularity of will be uploaded to the blockchain for encrypted storage.

Online, hcc first tracked health data in the medical field. For a patient user, its health data consists of three parts: First, the user's daily self-assessment of health maintenance, such as dietary conditions, compliance with doctor's orders, etc. The obtained data will be included in the user evaluation system; the second is the evaluation based on the doctor bile phone app combined with intelligent medical IoT, automatically generate daily health conditions, etc.

The purpose of HCC's development of the app is to train users for at least 3 months and thereby form durable health care habits in the big health industry. Through reminders, notifications, voice navigation and video or graphic tutorials, teach users how to improve themselves and ultimately Form healthy oral hygiene habits. Basic initial training lasts 3 months, verified by academic papers, which is the average necessary time required for good health hygiene habits to become an individual's daily habits. This app is especially meaningful for children, because Forming health and hygiene habits as a child can prevent deeper medical and health problems in the future.

Users will receive a certain amount of hcc each time they complete training, but only after completing the most basic 3 months of initial training, users can unlock and receive hcc rewards.These hcc can be used to purchase services for the big health industry, nursing products for the big health industry, hcc guarantee, it can also be deposited in a wallet or trading platform to obtain the expected value gain.

After a long period of data accumulation, the user has personally unique health data on the chain, and the owner of the data is the data producer himself. Others have no right to obtain and use the data without their consent. hcc helps patients' medical data to be confirmed. After the user's consent, the data can be opened to doctors, medical institutions, commercial organizations, research institutions, etc. and get the corresponding hcc rewards.

At the same time, the accumulation of data has also increased the stickiness of patient users and doctor users, helping to establish a patient's life-long medical file and a family medical service plan around the patient.

HCC TOKEN

HCC Point

HCC TOKEN
<Token Sale>
Transferrable
Tradable

Only available inside
HCC
Non Tradable
Can't leave platform

3.5 Smart contract-based medical insurance and medical service transactions

Point-to-point personalized medical insurance based on personal medical data is of great significance.

Taking health care insurance as an example, the current health care insurance products on the market are mixed, high-end insurance is expensive, comprehensive score, doctors can Introduce lower-priced insurance, so that even if the patient becomes ill in the next year, it is equivalent to paying less than the price of regular diagnosis and treatment.

If the two parties agree, the contract can be traded within the blockchain, so that the value held by the contract can be created. The main interests of the two parties of the smart contract are consistent-to maintain a healthy body Hygiene. By signing a smart contract, both the doctor and the patient should fulfill their obligations. Upon completion, both parties will get the benefits of the smart contract. The patient must

the insurance, and the doctor himself bears the patient's medical care and health treatment. Responsibility and complete their work with the highest quality and satisfaction.

If the obligations of both parties are met, hcc rewards will be issued. This method creates a work through their own efforts, and as a result promote the common interests of both parties.

The focus of the smart contract is to coordinate the main interests of both parties-maintaining health and overall medical conditions. In the themselves and reach the health industry while achieving common goals. High-level personal health and high-quality medical health services.
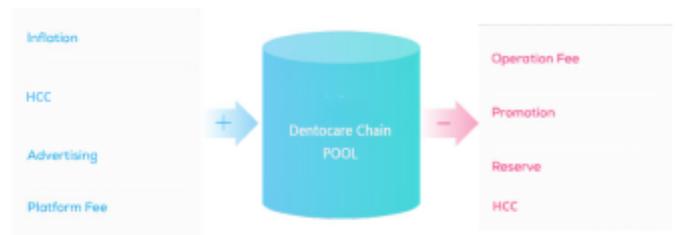
3.6 AI-Based Health Big Data Management

The traditional personal medical health information carrier is in the form of medical records, his system of medical institutions, etc., which has significant disadvantages: the data is obviously discontinuous, and the data deposited in medical institutions is difficult to circulate and be efficiently used across hospitals, which has resulted in a large Historical medical data is accumulated. Individuals do not have control and right to know their own medical data. For individuals, their medical and health data is particularly important in terms of health management: oral health over the lifetime requires long-term stable data monitoring to Stay healthy and get timely early warning of abnormal conditions to safeguard your life, health and safety.

The model provided by the blockchain can achieve guaranteed life-long medical record sharing among all major health industry healthcare providers. There are two reasons for combining electronic medical records with the blockchain: First, this method can avoid Other intermediate organizations are added to the records. The blockchain represents a decentralized control mechanism where everyone shares rights and is not managed by anyone, and the structural changes embodied in it can achieve the generalization of

account programmable time-stamped, programmable audit entries with audit trails. This makes it possible to implement intelligent control of record access without creating custom functions for each vendor.

Chapter 4: hcc blockchain technology application (distributed)

4.1 hcc's distributed structure

Bit width	Field definition	Field description
32	nVersion	shc version number
256	HashPrevBlock	HasH value of the previous block header, currently based on rnn algorithm.
32	HCCNumber	The number of blockchains contained in this block. Will specify how many blockchain ai parameter list groups are included in this block header. When shc sets only one data blockchain, ntation, it is currently recommended that a single block header HCCNumber is not greater than 16。
32* HCCNumber	HCC[HCCNumber]	Used to indicate that the corresponding ai parameter acts on Which data link number. Currently exists HCCNumber needs instructionsData link
256* HCCNumber	HashSystemAIParameterList [HCCNumber]	Used to indicate the corresponding data link number HasH values for substandard AI parameter update list
256* HCCNumber	HashSystemTransModelList [HCCNumber]	Used to indicate the corresponding data link number HasH value added to the list of new AI trading models

4.2 hcc medical service provider qualification certification system

The hcc platform has a medical service provider qualification authentication system to distinguish medical service providers from ordinary users. In order to ensure the value of medical information recorded on the hcc platform, the data generator must be certified as a doctor. If it is a medical institution, it also needs to be certified Confirm whether you have passed the qualification certification. The medical records filled by certified medical service providers also naturally have higher value.

hcc uses a hybrid authentication system, which combines a centralized authentication method directly from a trusted authority and a decentralized authentication method from p2p that has already passed the authentication. In order to achieve the credibility of p2p authentication, the certifier needs to Pay a certain amount of mp points as a deposit, and users who honestly complete the task during the authentication process will be rewarded, otherwise a part of the deposit will be confiscated as a penalty. The result of the p2p certification will ultimately be determined by the voting of the certification participants. The voting results of individual evaluators will not be announced, and for this purpose, the evaluation will be conducted in the form of an anonymous authentication agreement {23}.

4.3 hcc smart contract protocol

Smart contracts are the foundation of a blockchain platform. With smart contracts, rules can be applied securely when processing transactions. You can use them to automatically perform verification steps to encode conditions that were previously contained in signed physical contracts.

Smart contracts mean that blockchain transactions are much more than buying and selling currencies. These transactions will have a wider range of instructions embedded in the blockchain. Traditional contracts refer to two or more parties agreeing to do or not do something in exchange for something. One party must trust each other to fulfill their obligations, and smart contracts do not need to trust each other, because smart contracts are not only defined by the code, but also enforced by the code, completely automatically and without intervention.

Chapter 5: hcc token system

5.1 Application

hcc tokens are issued by the technical team of medical ecological chain medical institutions and a group of technical geek volunteers, and can be used on the platform.hcc is a traceable medical ecological currency, mainly used for traceability of medical products, anti-counterfeiting, Circulation, which can track the circulation and donation of medicines online.

First of all, holding tokens is a user's asset and has a payment function.You can purchase the corresponding medical services on the platform and accept services from the corresponding institutions of the platform through offline channels.

Second, hcc tokens can be used to participate in the activities of the platform, and the number of tokens increases over time, meaning that users' assets may also accumulate and increase;

第三，Users can exchange hcc tokens with fiat currencies.

5.2 Liquidity

The HCC token system implements direct peer-to-peer transactions, thereby avoiding traditional centralized payment problems such as high fees and tedious processes. All transactions must be authenticated by network nodes and permanently recorded in the generation based on blockchain technology. In the public distributed ledger of the coin chain, HCC tokens are the most important tool for achieving health care chain information and value transfer.

5.3 Decentralized governance

Blockchain technology establishes a trust system based on technology rather than based on agreed rules.The "decentralized" feature formed by technical features such as smart contracts and distributed databases allows the use of consumer big data to ensure security through encryption algorithms, and A transaction record is completely recorded to form a usage trajectory.

Chapter 6: hcc achieves development planning

6.1 Initial planning

(1) Time: January 2019-March 2020

(2) Planning goals:

HCC-based business model operation

Issuance of equity tokens, hcc launches wbf exchange to form usdt / hcc transaction pairs, combines medical resources through the blockchain, and uses digital tokens to open the flow

Launched early landing applications to test the online-offline combination mode of the chain

· Token distribution and community operation management

· Mainnet development testing and launch

· Early partners and merchants settled

· Connecting domestic and foreign medical resources

· IoT device integration

· Mainnet wallet development

6.2 Medium-term planning

(1) Time: March 2020-December 2020

(2) Planning goals:

 Smart contract insurance trial run

Improve the big health business model and further implement it

· Access to more businesses

Expand the hcc ecosystem and expand international business

· Development of major pharmaceutical groups and charities in the world

7.3 Later planning

(1) Time: January 2021-2022

(2) Planning goals:

· Building interdisciplinary HCC medical technology i

Medical AI based on trusted data

· Health products based on medical AI

· Global cooperation and business operations

Create a complete blockchain + medical + charity ecosys

Chapter VII; hcc landing application scenarios

7.1 Medical resources

hcc will create a decentralized medical and health service platform, break the traditional service model centered on medical institutions, and establish a blockchain-based medical data value sharing network so that everyone can access global high-quality medical resources and services.

The average global health expenditure accounts for 9.9% of gdp, and the United States accounts for 17% of gdp. Global medical costs are increasing year by year.However, the quality of medical services obtained by patients is poor, and the rate of misdiagnosis combination and rapid development of big data, blockchain, and AI have increasingly exerted great influence in various industries.

The combination of medical data and the above-mentioned technologies will surely subvert the medical industry structure and reconstruct the value distribution of the medical industry.hcc and its ecological partners have medical data from 30+ large medical institutions and hundreds of other medical institutions, with a top-level blockchain , Ai, big data technical experts and medical experts.

hcc meets the requirements for reliability, scalability, and security of medical and the platform, attracting more medical institutions, patients, and third-party vendors to join the medical and health service ecological platform.

hcc builds an autonomous public chain, and uses technologies such as smart contracts, decentralized distributed storage, pos consensus mechanism, homomorphic encryption and differential privacy to solve the privacy protection and secure exchange of medical data, and build the hcc data market and application market.

7.2 Charity

The opacity of charitable donations is a problem that has been criticized.

If the charity money is not going to the people who really need it, then many people who donate to the project will feel cheated. No one's money is brought by the wind, and no one's love can be changed at will. In order to avoid this situation, more and more people will directly ignore the opportunity to give love again and again. For example, when we walk through a busy neighborhood and see disabled people begging by the road, how many people will face it?

Not only will the entire society lose trust in charities or even charity, but also the black-box operation will make those who really need help do not get the help they deserve, and charity deviates from its original purpose and becomes completely different.

Therefore, in the field of charity, it is an account of everyone. As a charity, the most damage to reputation can also make social trust vulnerable.

To ensure the accurate use of charity funds, the most important thing is to create an open and transparent system that can self-certify and be innocent, and blockchain technology can well empower charity.

HCC uses the blockchain architecture to allow peer-to-peer transactions to be conducted in a trustless environment, that is, users do not need to trust each other, because all participating nodes need to follow the same pre-defined rules.

The characteristics of hcc technology determine that the data on the chain must be open Institutions and personnel involved in intermediate links cannot do evil, and anyone can easily query it. Greatly reduced trust costs.

As long as you initiate a donation, its whereabouts can be checked on the chain. It used stakeholders. Trust, and increase management costs and efficiency.

hcc technology can improve the efficiency and transparency of the philanthropy field.When philanthropy has no black box operation, when people have no doubts and suspicions about charities, everyone can give a love and create a better society.

Chapter 8: hcc council

8.1 Governing Body

The council is committed to the development and construction of hcc and the transparency and advocacy of governance, to promote the safe and harmonious development of the open source ecological society; the council will help to manage the general and privileged matters of the hcc platform by formulating a good governance structure; council governance The design goals of the structure mainly consider the sustainability of open source community projects, the effectiveness of management, and the safety of raised funds.

The governance structure of the council is mainly composed of four blocks: executive agencies, technical agencies, operating agencies, and comprehensive customer service agencies. The principals of the executive, technical, and operational agencies are senior experienced personnel at home and abroad. The agencies are mainly led by the domestic and foreign branches, of which the Governance Committee of the Board of Management uniformly manages and makes decisions on the following four agencies.

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                    ┌──────────────┐
                    │    Board     │
                    │  Governance  │
                    │  Committee   │
                    └──────┬───────┘
        ┌────────────┬─────┴──────┬──────────────┐
   ┌─────────┐  ┌─────────┐  ┌─────────┐  ┌──────────────────┐
   │Executive│  │Technical│  │Operating│  │Customer Synthesis│
   │ agency  │  │ agency  │  │ agency  │  │  Service agency  │
   └─────────┘  └─────────┘  └─────────┘  └──────────────────┘
   (Responsible persons are respectively       (By the leadership
   senior experienced personnel at home         of the domestic
   and abroad)                                   and foreign
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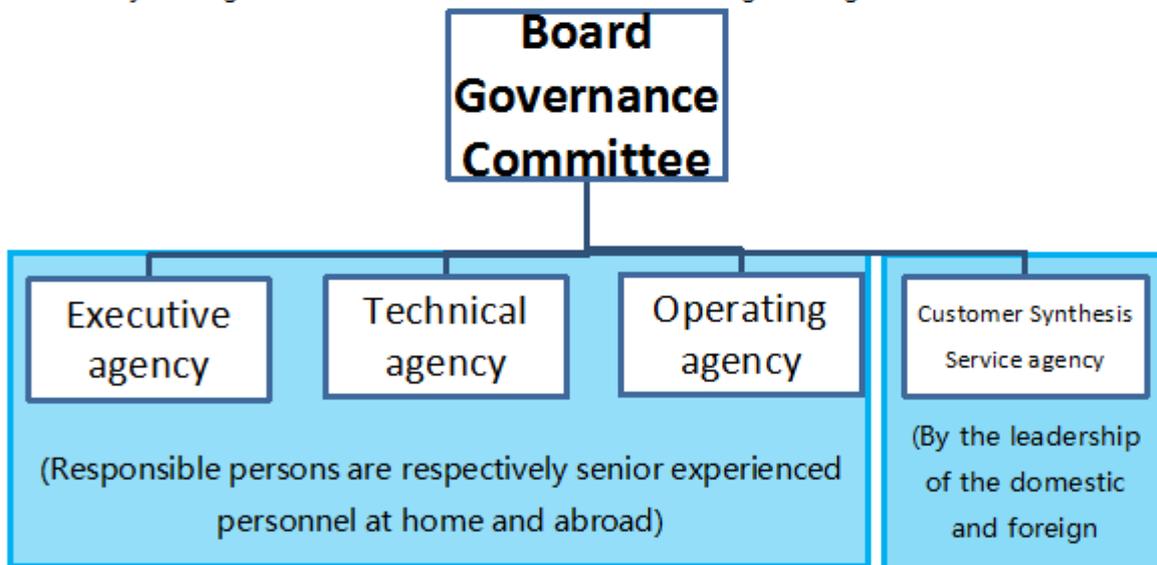
8.2 Director supervision

The management of the hcc platform is carried out by the "hcc" board of directors, the core team, and the management and operation committee. The board of directors is the implementation.

The core team is responsible for the research and development of the underlying platform of "hcc" and the development of commercial applications. The management and operation committee is composed of "hcc" internal personnel, active investors, and platform users. And daily operations.

8.3 Governing Team

Dark Horse Technical Team motto:

Don't let technology limit your imagination

The hcc technical team is an ecological technology team specializing in the integration of big data and blockchain. It is a cross-domain core team. They rely on rich skills and experience to guide the strategic planning, development and operation of the hcc platform. The team includes blockchain big data engineers, encrypted digital asset experts, management consulting experts, and a board of directors composed of experienced real-world financial services experts.

Napoleon co-sponsor

He has been involved in Bitcoin mining since 2012, and began to systematically study blockchain technology and encrypted digital asset ICOs in early 2017. He has unique insights into the potential and future direction of the blockchain industry. He has invested in high-quality projects such as EOS, Filecoin, Cybermiles, etc. He has observed and participated in the community construction and operation of multiple encrypted digital asset projects, and has extensive experience in community organization and operation. He is also a major member of the community development and operation of XDAG in China. He was the founder of the early coin circle "BW Investment" at HCC. Lead operations, media outreach and strategic research.

Raines Marketing Director

Graduated from Boston College of Ivy League

Master of Computer Science

 5 years working experience at the famous social communication company

Facebook

Master the core technology of social applications and participate in a new

generation during his employmentThe underlying architecture of encrypted

communication, system maintenance and software development work.

The core development member of the Sogou big data platform, is responsible for etl, core indicator calculation, task monitoring, task scheduling, task optimization, and participates in anti-cheating and recommendation algorithm research. As an early follower of blockchain technology, he has focused on Bitcoin, Ethereum, The eos source code has been researched in depth, contributed code to multiple open source projects, submitted security vulnerability patches, and led product development and blockchain technology implementation in hcc.

Norman Rojos Chief Financial Advisor

Master of Financial Management, once worked at Morgan Stanley Investment Bank, and has his own unique insights in the field of transaction payment. The first shareholder of the British Pioneer Group, began to lay out the blockchain in 2012, thinking that blockchain is a financial disruptive innovation technology. Committed to building a business empire in the blockchain field.

Chapter 9: hcc release plan

9.1 Release plan

(1) Token name: Health care chain (HCC)

(2) Application: All projects related to hcc

(3) Features: R & D based on the underlying technology of Ethereum

(4) Total issuance: 2.1 million, never issued

(5) Price: not constant, initial issue price is 0.1 USD,

9.2 Release details

Community Building	30% (gradual distribution based on community construction)
Team operation	20% (distributed monthly based on project progress)
Technology optimization	(5% lockup for two years, and then gradually released by 5% monthly)
Investment agency	30% (locked for three years, and then gradually released by 5% monthly)
Private placement	15% (locked 50%, released after 20 days)

Community Building
Team operation
Technology optimization
Investment agency
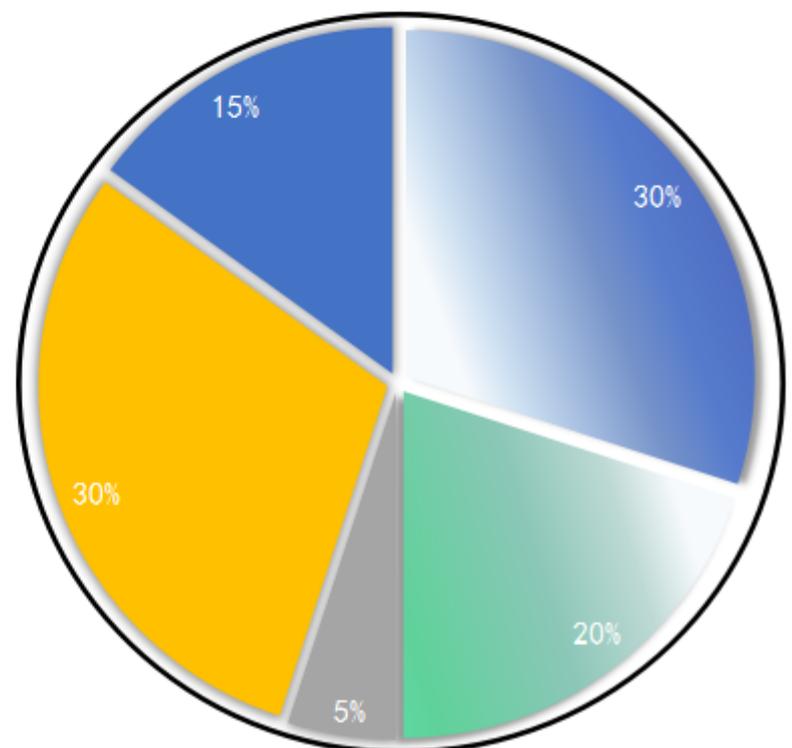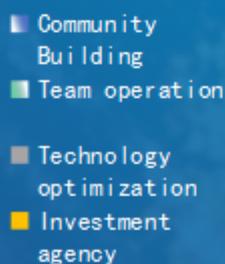
Chapter 10: Risk Tips

(1) Risk of losing hcc due to certificate loss

The buyer's hcc is likely to be linked to an account before being assigned to the buyer, and the only way to enter the account is the relevant login credentials selected by the buyer, and the loss of these credentials will lead to the loss of tokens. The best way to securely store login credentials It is the buyer to store the voucher in one or more places for safe storage, and it is best not to store it and expose it to work.

(2) Risks related to buyer's credentials

If any third party obtains the buyer's login credentials or private key, it is possible to directly control the buyer's hcc.To minimize this risk, the buyer must protect its electronic device to prevent unauthorized access requests from passing through and accessing the device content.

(3) Risks related to judicial supervision

Blockchain technology has become the main object of supervision in various major countries in the world.If the regulatory body intervenes or exerts influence, hcc applications or tokens may be affected by it, such as legal restrictions on use, sales, and electronic tokens such as tokens. Restrict, hinder or even directly terminate the development of hcc applications.

 (4) Risk of lack of attention of hcc

There is a possibility that hcc is not used by a large number of individuals or organizations, which means that the public does not have enough interest to develop and develop these related distributed applications.Such a lack of interest may have a negative impact on hcc.

(5) Risk of loopholes or rapid development of cryptography

The rapid development of cryptography or the development of technology such as the development of quantum computers, or the risk of cracking to hcc, may lead to the loss of hcc.

(6) Risk of token mining attack

Just like other decentralized cryptographic tokens and encrypted tokens, the blockchain used for hcc is also vulnerable to mining attacks, such as double-spend attacks, high hashrate attacks, "self-interest" mining attacks, excessive Competitive attacks, any successful attack is a risk to hcc.Although hcc works very hard to improve the security of the system, the risks of mining attacks described above are real.

(7) Risk of lack of maintenance or use

First, although hcc may have a certain value after a certain period of time, if "hcc" lacks maintenance or use, this value may be very small. If this happens, there may be no follow-up without this platform Followers or few followers, obviously, this is very bad for hcc.

(8) Risk of uninsured losses

Unlike bank accounts or other financial institution accounts, there are usually no insurance protections stored on "hcc" accounts. In any case, there will not be any open individual organization to cover your losses, but such as fdic or private insurance The company will provide protection for buyers.

(9) Unforeseen other risks

Cryptographic tokens are a new and untested technology.In addition to the risks mentioned in this project description, there are also some risks not mentioned or anticipated by the hcc team.In addition, other risks may also suddenly Appears, or in a combination of multiple already mentioned risks.

Chapter 11: Disclaimer

This article is only for the purpose of conveying information, and does not constitute relevant opinions of buying and selling hcc. Any similar proposal or inquiry will be conducted under a trustworthy clause and permitted by applicable laws. The above information or analysis does not constitute Investment decisions, or specific recommendations.

This document does not constitute any investment intention or teaching investment. This document does not constitute nor is it understood to provide any buying and selling behavior, nor is it any form of contract or commitment.

The initiator clearly stated that the relevant intention users should clearly understand the results or consequences for this.

The platform clearly states that it will not bear any direct or indirect losses caused by participating in the hcc project, including: economic losses caused by user trading operations; any errors, omissions or inaccurate information caused by personal understanding;

This white paper is only used to explain the implementation plan and implementation project.

Due to many uncertainties in the digital currency itself (including but not limited to: the environment in which countries treat digital currency regulation, fierce competition in the the project will be successful and the project has a certain risk of failure .

The project team made it clear that it does not promise any returns and does not promise any direct or indirect losses caused by the project.

Everyone involved in the hcc project is deemed to agree and accept the above terms and accept the legal disclaimer.

The sole right of interpretation of this project belongs to the hcc Singapore Foundation.