XingYun Chain white paper

XY CHAIN

Assisted reproduction-service platform based on the blockchain technology

White Paper

XingYun Chain

Summary

XYC is an assisted reproduction service platform based on the blockchain technology, it is focus on assisted reproduction, gene detection precision medical services, committed to creating a new environment for the development of assisted reproductive industry and gene sequencing industry, build a comprehensive platform that can provide users with smart medical services. Set up a blockchain platform based on public chains, use XYC digital currency as a payment instrument based on the ETH smart technology, it can provide convenient payment service for global users. This platform was developed by blockchain experts and genetic specialists, assisted reproduction is a new gene detection technology, it can analyze the gene sequence from blood or saliva, predict the possibility of multiple diseases and individual behavior characteristics. Gene sequencing technology can lock individual diseased genes, prevent and treat them in advance as well. The storage of genetic data requires more secure and more comprehensive platform, that is the significance of the birth of the XYC blockchain plus assisted reproduction platform.

In the future, intelligent services derived from XYC platform can be divided into three parts: gene data platform that includes user information, analysis of gene data operation and genetic spiders can help users find genetic connections.

As a builder of global encrypted digital currency and intelligent investment ecology, XYC is devoted to develop and promote the XingYun chain and provide the financial support for it. Create a digital currency to investment content (investment discussion), investment strategy (investment portfolio), and then to life and healthy products (all kinds of funds), promote the XYC as a blockchain infrastructure to serve a wider range of industries, drive the healthy development of the XYC ecosystem.

Chapter One --- The spring up of blockchain and the future

Previously, people regard the blockchain as a ledger on the point to point network. All date usage will be recorded on the block, block and block are connected to form chain structure, and publish it to all the nodes on the network, and then form a consensus, node members can consult related records based on their permissions, but no single node can easily control and change the data of the entire network.

This design came from a paper <Bitcoin: a point to point electronic cash system > published by Satoshi Nakamoto in 2008. The article proposes that it hopes to create a new type of electronic payment system. This system "is based on cryptographic principles rather than credit, so that any agreed parties can make payments directly, thereby no third-party intermediary needs to participate.

The paper gave birth to the first kind of virtual currency--- Bitcoin, it marks a great step forward in the monetary system of human society. Bitcoin adopted a design idea of open distributed ledgers, truly free from the constraints of third-party agencies. Then bitcoin entered the rapid development period, and led to the birth of the block chain eventually.

In a narrow sense, blockchain is a chained data structure that combining data blocks in chronological order, and with non-destructive and unforgeable distributed ledgers guaranteed by cryptographic methods.

In a broad sense, blockchain technology uses block chained date structures to verify and store data, Using distributed node consensus algorithm to generate and update data, Using cryptography to ensure data transmission and access security, a new distributed infrastructure and computing paradigm for programming and manipulating data using smart contracts consisting of automated script code.

1.1 The birth of the blockchain

The concept of blockchain was first proposed by Satoshi Nakamoto in 2008, in the following years, blockchain became a core component of Bitcoin, it acts as a public account for all transactions. By using point-to-point networks and distributed time servers, blockchain databases can be managed autonomously. The blockchain invented for Bitcoin became the first digital currency to

solve the problem of repeated consumption. Bitcoin's design has become a source of inspiration for other applications.

The blockchain was first applied to Bitcoin as a solution make database secure without authorization from administrative agencies. In October 2008, in Satoshi Nakamoto's original paper, the two words "block" and "chain" are used separately, it was turned into a word by 2016: Blockchain, in August 2014, Bitcoin's blockchain file size reached 20 gigabytes. Satoshi Nakamoto creates the first block, that is "The foundation block".

1.2 The core technology of blockchain

Blockchain technology is not a single technology, it is a comprehensive technical system based on the integration of multiple research results. We believe that there are three core technologies: consensus mechanism, cryptographic principles, and distributed data storage.

The first: Consensus mechanism

Consensus refers to the nodes of multiple parties participation under the preset rules, the process of agreeing on date, behavior and processes through the interaction of multiple nodes. Consensus mechanism refers to the algorithms, protocols and rules that define the consensus process. The consensus mechanism of block chain has the characteristics of "the minority obeys the majority" and "everyone is equal", "Minority obeys majority" does not refer to the total number of nodes. "Everyone is equal" means that when the nodes meet the conditions, all nodes have the right to give priority to the result of consensus, and be recognized by other nodes directly as the final consensus result.

The second: Principles of cryptography

In the blockchain, the communication of information is based on the asymmetric digital encryption technology, such as public key and private key to achieve mutual trust between the two parties. In the specific implementation process, after one key pair information in the public and private key pair is encrypted, only the other key can be used to unlock the process. And after one of the keys is disclosed (public key), another undisclosed key (private key) cannot be

The third: Distributed storage

Distributed storage in the blockchain enables participating nodes to each have their own

independent, complete data storage. Different from traditional distributed storage, The uniqueness of distributed storage in blockchain is mainly reflected in two aspects: one is Each node of the blockchain stores the complete data according to the block chain structure, traditional distributed storage generally divides data into multiple copies for storage according to certain rules; Another is the storage of each node in the blockchain is independent and equally positional, relying on consensus mechanism to ensure storage consistency, traditional distributed storage generally synchronizes data with other backup nodes through the central node.

1.3 The future of blockchain

As a core security technology, blockchain will have broad application prospects in banking, auditing, IOT, medical, notarization, copyright, social networking and other fields. Blockchain technology is expected to be widely used in the financial, medical treatment and so on.

There are many pain points in data centered storage, blockchain technology is expected to become a savior. Big data and cloud computing era have higher concentration, The manipulation power of cloud center is too high, and the risk of data leakage is increasing. And all the data goes through the cloud, which is inefficient and costly. Blockchain technology can achieve decentralized storage of data without sacrificing content protection, fundamentally solve the above problem. Bitcoin backed by blockchain has been running safely for nearly seven years, enough to verify the reliability of the technology. Beyond the Bitcoin, blockchain will embrace the broader world of finance and society in the future.

Blockchain is still mainly used for currency (blockchain 1.0). Currently many technologies owned by companies have been applied to the financial sector beyond currency (blockchain 2.0), even applied to the field of social notarization and intelligence (blockchain 3.0). Overseas traditional industry giants have been laying blockchains since 2014.

Banks of the world establish blockchain alliance, deloitte and other famous accounting firms began to develop blockchain auditing technology, NASDAQ debuts blockchain securities trading, IBM jointly Samsung layout blockchain IOT. Blockchain is active in entrepreneurship, covering all areas of finance, health-care, and music.

Blockchain technology can build an efficient and reliable value transmission system, promoting the Internet as a network infrastructure that builds social trust, to achieve effective delivery of

value, and this is called value internet. Blockchain provides a new type of social trust mechanism, laid a new cornerstone for the development of the digital economy. The application innovation of "Blockchain+" indicates the new direction of industrial innovation and public service.

Today, blockchain technology has been deployed around the world, developed countries such as the United States, Britain, Japan, Germany, Canada and Australia have realized that blockchain technology has huge application prospects in the optimization of public services and social mechanisms, and start to design the development path of blockchain. Blockchain can provide systematic support for economic and social transformation and upgrading. The significant advantages of blockchain+ are optimization of business processes, lower operating costs, and improved collaboration efficiency, this advantage has been reflected in various fields such as financial services, supply chain management, intellectual property, smart manufacturing, social welfare, and education and employment.

Due to the use of blockchain technology, new methods have been added for assisted reproduction, gene sequencing, and other applications. At present, assisted reproduction has become the main method for treating infertility in developed countries, the proportion is up to 70-90% in Europe and the United States. The proportion of assisted reproduction in China is also gradually increasing, the proportion began to reach 52% in 2015 (IUI ART), this is related to our relatively conservative treatment attitude. The pregnancy rate of assisted reproduction is significantly higher than other treatments (up to 60%), it can be judged that the proportion of assisted reproduction will gradually increase.

Gene sequencing refers to the sequencing of DNA by sequencing equipment, in order to interpret the genetic code of DNA, the process of providing guidance for life science research, clinical diagnosis and treatment. Genes are functional fragments of DNA molecules, the basic unit of genetic information and the most basic factor determining all biological species. Genes determine the age, death, illness, health, splendor, and longevity of life. They are the manipulators and regulators of life. Using genetic data to detect the physical condition of individuals and provide personalized solutions.

Because of blockchain technology has remarkable characteristics, it has ability to ensure that all information in each block is recorded, the contents of the record cannot be tampered with. Therefore, when conducting genetic data services, we can ensure that every data is safe and

reasonably used.

Chapter two   The project background of the XYC

A major change in the health-care industry is the trend of digital decentralization of health-care delivery models. Digitalization of drugs, equipment, services and business models popularized the current health care system and released new values. This makes "digital conversion" the core strategic focus of all medical industry participants. Most countries have formulated policies or strategies that aim at digital health, such as EHR, EMR, HIT and other systems and equipment. No matter how these digital projects develop, at present, the limitation of security, integrity and access to personalized health data have become a key bottleneck for medical delivery innovation. Because the health care industry is unable to find a balance between risk and reward, the application of blockchain technology provides a solution to alleviate these urgent needs.

2.1 The status of the global medical industry

With the continuous development of human science and technology, Since the 21st century, medical technology is making a leap forward, the life expectancy of human beings has been continuously improved. But with the process of industrialization in the world, human diseases change from simple to complex, from diseases to cancer extension. The environmental pollution brought by the industrialization process and the food safety problems caused by huge profits, all these problems have brought new challenges to the global health-care industry. Different development situations around the world have resulted in different medical services for different groups of people in different regions. The high medical costs in developed countries, the low medical standards in developing countries, the lack of basic medical facilities in the underdeveloped areas, the uneven distribution of medical resources, the uneven medical level and the uneven medical cost have become the problems to be solved urgently in the global medical development.

After entering the age of the Internet, both Europe, the United States and China have gradually started to develop toward higher-level precision medicine and achieved good results. After the global financial crisis erupted, the medical industry experienced a shortage of funds for several years and now it has finally ushered in a steady wave of investment. SMEs can successfully raise

funds for innovation and provide impetus to the development of the industry. Successful companies will reform and reduce costs through innovation. There have been many major mergers and acquisitions in the past two years, which including Thermo Fisher's acquisition of American Life Technologies, Zimmer's acquisition of Bonn, Pharma's acquisition of Kang Fu Sheng and Medtronic's acquisition of Kehui Medical. These acquisitions strengthen the buyer's market position and also reduce investment in high-priced services and technology platforms, which are necessary for product differentiation and industry success.

With the participation of various capital markets and the application of new technologies, after the merger and reorganization of major giants, we believe that in the near future, reducing medical costs, improving medical accuracy, and universalizing universal access to medical services will gradually come true.

2.2 The current pain points in the medical industry

2.2.1 It is difficult to manage the information files of the patients

Most countries have formulated policies or strategies that aim at digital health, such as EHR, EMR and HIT. No matter how these digital projects develop. Currently security, integrity, and access to personalized health data have become a key bottleneck for medical innovation. Between different supply and demand sides, a data bottleneck is formed between various departments within the health system, affecting the coordination of health care. Each person produces data on an average of 19 different medical institutions in his lifetime, with an average of 18.7 doctors. In general, each patient has a different medical record in each organization, so it is almost impossible to integrate each person's health data into one longitudinal record.

2.2.2 Safety of drugs

At present, drug safety is also the core issue in medical accidents. Although there are manufacturers in drug packaging, the quality, production location, production time, and quality inspection conditions of each batch are difficult to achieve 100% monitoring. Medicine is a highly profitable industry, there are many reports about counterfeiting and selling for profit every year. How to monitor drug safety from the source has become a problem of the times.

2.2.3 Prevention

The higher medical care is mainly for the treatment of human diseases. This is why the

development of medical standard is very high now, and there are more and more hospitals. But no matter which hospital you go to, it is overcrowded. This is because we are very lacking in disease prevention.
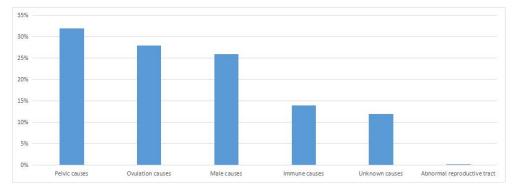
2.3 Pain points in the assisted reproductive industry

2.3.1 More and more people need assisted reproductive technology.

Infertility becomes common as the age of childbearing is delayed, environmental pollution and people's life has been changed. According to the <2015 Infertility Big Data Survey Report>, in 2015, the infertility rate of married couples in China was 12.5% to 15%. In other words, there is a problem of infertility in 1 in 8 couples (10 to 20% of patients need IVF treatment). It has increased 10 times in the past 40 years. At the same time, with the change of social attitudes, the rate of medical treatment for infertile couples is increasing. In 2016, the outpatient volume of No.3 Hospital of Beijing University reproductive center exceeded 600 thousand, and the annual growth rate from 2004 to 2016 reached 28%.

In January 2016, the State Council officially promulgated the <Decision on Implementing a Comprehensive Two-Child Policy Reform to Improve the Management of Family Planning Services>, affected by the country's comprehensive liberalization of the second-child policy, the number of people over 35 who have fertility needs has increased significantly. This means that the demand for assisted reproduction will be improved in the future.

The number of infertile couples continues to increase with environmental pollution, age of childbearing, and the pressure of life. Infertility caused by pelvic causes is about 30%-40%, infertility caused by ovulating is about 25%-30%, due to male causes accounts for about 25%-30% (including genetic diseases, endocrine dysfunction, genital infections, sexual dysfunction, etc.). Infertility caused by immunization causes about 10%-20%, and infertility caused by abnormal development of the reproductive tract or organ accounts for about 0.1%.

2.4   The pain points in the gene sequencing industry

2.4.1   Problems caused by the lack of genetic network chain

Gene sequencing is a new type of gene detection technology, analyze the full sequence of the gene from blood or saliva, and predict the possibility of multiple diseases, such as cancer or leukemia, sports talent, drinkers and so on. Gene sequencing-related products and technologies have evolved from laboratory research to clinical use. It can be said that gene sequencing technology is the next technology to change the world.

However, under the traditional technology, the development of the gene sequencing industry is greatly constrained due to the lack of gene network strands. Each gene service platform is operated independently. Personal genetic data does not form complete information, customer's genetic data is like an isolated message, these problems have resulted in very limited services for genetic data.

2.4.2 Problems with Gene Data Platform

Gene sequencing is a huge project that is related to the future development of human society, it will affect the cultural, ethical and other aspects of human society. However, the genetic data platform in the gene sequencing industry has obvious disadvantages currently.

1. Because there is no industry standard, each genetic testing company determines the corresponding detection sites according to the self-built database, and the detection results in each data platform are also different. The lack of industry standards for platform data is one of the major obstacles to the development of the genetic testing industry.

2. The biggest risk of genetic data platform is the leakage of information. DNA is the core and most secretive information of an individual, many personal characteristics can be read from the DNA information, including personality, appearance, hobbies, potentials, diseases and many other aspects. Once personal DNA information is leaked and misused, the consequences are disastrous.

3. The risk of using genetic data. The universal use of human DNA information also has moral risks. For example, in a family, when there is a non-brother relationship between two generations, the family may live happily without knowing it, but the DNA database may make these families unhappy from then on. If DNA information is stolen and used for cloning, it will overturn the

existing social order in the family and marriage and bring ethical crisis to human beings.

2.5 The crisis of assisted reproduction and gene sequencing industry

In the foreseeable future, assisted reproduction, gene sequencing and related industries will achieve breakthrough development in the four major areas as following:

1. Gene technology will be applied to research fields such as complex diseases, agricultural genetics, and microbiology, which will bring about tremendous changes in human health, agriculture, and environmental protection.

2. Gene technology applied to reproductive health will significantly reduce birth defects and improve human health.

3. Cancer genome research will reveal the pathogenesis of tumors,   and tumor genome sequencing technology is the basis of individual treatment for cancer.

4. The combination of genomic technology and the latest scientific findings of traditional clinical medicine, then forming precision medical treatment that will revolutionize the diagnosis, treatment and clinical decision-making of the disease.

Faced with such a broad prospect, the assisted reproduction and gene sequencing industries are constrained by many problems. The crisis in the entire industry is caused by problems such as the safety and application of genetic data. On the other hand, if we can solve these problems and make the gene sequencing industry move toward a healthier direction, we will certainly be able to create more opportunities and create more benefits for human society.

Chapter three---Brief introduction of XYC assisted reproductive service platform
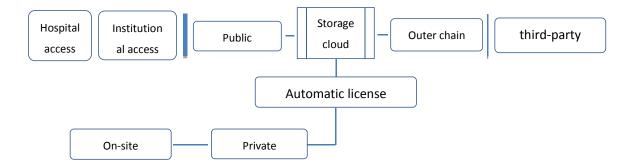
3.1   What is the XYC

XYC is an assisted reproductive service platform based on blockchain technology. XYC Blockchain + Assisted Reproductive Service Platform is based on technology driven, focusing on precision medical services such as assisted reproduction and gene detection, it is committed to creating a new environment for the development of the assisted reproductive industry and gene sequencing industry and creating a user-friendly environment. Provide a comprehensive platform

for smart medical services. Build a blockchain platform based on the public chain, use XYC digital currency based on ETH smart contract technology as a payment tool to provide the convenient payment services for global users. The platform was developed by blockchain experts and genetic experts, assisted reproduction is a technique based on new gene detection, it can analyze and determine the full sequence of genes from blood or saliva to predict the possibility of many diseases. Gene sequencing technology can lock individual diseased genes then prevent and treat them in advance. The storage of genetic data requires a more secure and more comprehensive platform. This is the significance of the birth of "XYC" blockchain + assisted reproductive service platform.

In the future, intelligent services derived from XYC platform can be divided into three parts: gene data platform that gathers user information, genetic analysis data analysis that provides genetic counselors, and gene spiders that automatically help users find people who have genes associated with them.

The XYC Assisted Reproductive Platform is dedicated to building a blockchain platform for gene services and an intelligent gene database based on blockchain. Specifically, the full set of intelligent services that the XYC platform can provide is reflected in the following aspects:

3.1.1 Gene Collection and Storage Services

The "XYC" block chain + assisted reproductive service platform makes use of the characteristics of the blockchain, such as decentralized, trust, collective maintenance, and reliable database, with the features of compatibility, versatility, openness, automation, etc., the safe storage of genetic data is achieved, and the security problems caused by lack of industry standards in various platforms in the industry are solved. On the one hand, the platform cooperates with hospitals, genetic testing institutions, and genetic research institutes. After obtaining the user's authorization, the platform can obtain all personal information such as genetic testing and medical records. On the other hand, the platform sets up on-site inspection equipment in the fixed-point area. Users obtain their own genetic information through gene sequencing and upload it to the platform through a dedicated gateway channel and are stored on the XXY storage cloud platform. Users only need to log in to the platform through their name, ID number, and other information to obtain their own genetic data services.
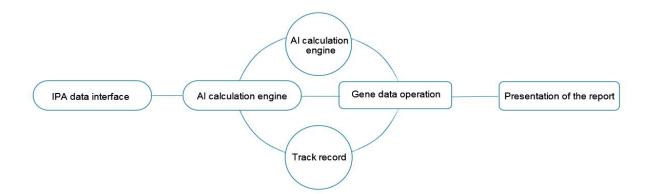
The XYC platform is highly compatible and versatile, connecting any location of equipment to people at any time, providing accurate, timely, and complete operational data to people, compatible with different data types, and receiving equipment operating data in multiple ways, and realized customizable special collection methods for the inclusion of genetic data. For the genetic data stored on the XYC storage cloud, the platform provides a unified outbound API, which can provide services for third party applications at any time and anywhere.

3.1.2 Operation analysis of gene large data

"XYC" blockchain + assisted reproductive service platform will create "Gene advisor" section. The platform will analyze the user's genes to obtain information about the user's physical condition, future health trends, etc., thereby providing customized services to the user's health. Proposed by World Health Organization in 2011, 40% of cancer patients can avoid cancer through prevention, 40% can be diagnosed and cured by early detection, and 20% can survive with cancer, this shows the importance of early prevention testing.

However, the transition from normal cells to cancer cells usually has a long induction period of 15-30 years, with no obvious signs at the beginning. The traditional physical examination can only detect existing clinical lesions and cannot be predicted before the lesions. The XYC platform uses big data technology to detect genetic changes in the genetic data before the human body develops lesions, and to identify susceptibility genes for related diseases. Gene Big Data Operation Analysis is to rapidly build a high-quality, high-performance "AI automated operational data analysis platform", which can realize automated gene sequencing data analysis, and present it in the way of reporting. Taking the result data from the gene sequencing process as the core,

the XYC platform modularizes the user's inspection results and finally performs AI scientific analysis, analyzes the various genetic data, and presents them to users in the form of reports.
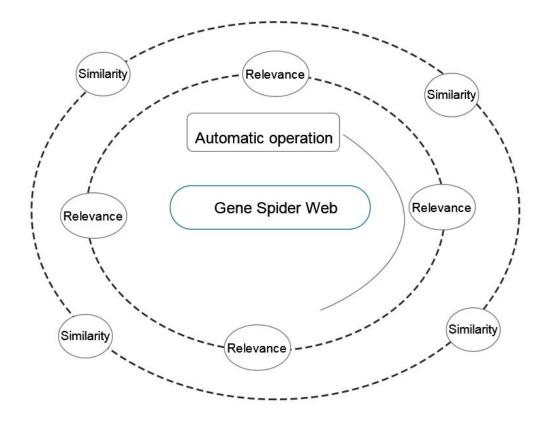

The XYC platform creates a comprehensive gene collection system, continuous collection of user's gene sequencing, medical examination, and follow-up analysis, and summed up the latest status report presented to the user for reference. This kind of assisted reproductive service platform is developed independently according to block chain idea and based on block chain and gene big data, the main core strengths are: connected, open, cooperative, universal, and outstanding performance data models. It can realize comprehensive gene data analysis and report service and create a new gene service system.

3.1.3 Genetic ecosystem

"XYC" Blockchain + Assisted Reproductive Service Platform uses blockchain smart contract technology to build a linked, matching genetic ecosystem. Intelligent contracts are considered to be network servers, but these servers are not built on the Internet with IP addresses, but on the blockchain. However, smart contracts do not depend on a specific hardware device, and smart contract can be seen by anyone on the blockchain. The blockchain is open, and the smart contract code is executed by all the participating mining equipment.

Therefore, in the gene spider web established by the XYC platform, the genes stored on the cloud will be automatically operated and the associated genetic data will be automatically matched. When the "XYC" blockchain + assisted reproductive service platform collects a large amount of data, it will form a spider network chain of genes. When the platform user's genetic data is running automatically, when the user's genetic data is related or similar, the platform will automatically match. In other words, after the platform has set up big genetic data, it helps users

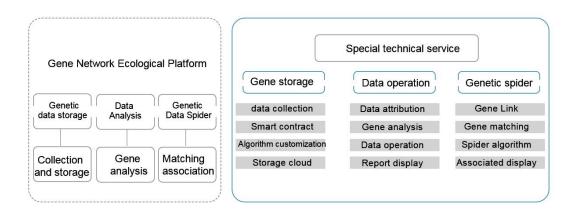recover their loved ones who have been separated for many years.

According to statistics, there are as many as 200,000 children lost each year in the country. Most of the abducted children are young children. It is difficult to find only by looking at the appearance. Only 0.1% of the lost children can be retrieved. DNA test technology has the characteristics of high individual recognition rate and accurate identification of kinship. It is one of the most effective technical means to confirm the identity of the kidnapped child. Faced with the problem of missing children, the XYC platform's genetic spider web can search the user's genetic information and find relatives for the missing children. As long as blood samples from parents are collected and blood samples of missing children found by public security agencies are available, they can be quickly and accurately searched nationwide. As long as the user's blood sample is entered in the comparison database, the result can be obtained at home. Regardless of the missing child anywhere in the country, as long as the child's blood sample is also entered in the comparison database, the platform will immediately know it and notify their parents.

3.2 Gene ecosystem

The innovative use of "XYC" blockchain + assisted reproductive service platform is to establish a

genetic network ecological chain. The "XYC" platform uses the acquired genetic information intelligently to realize the collection and storage services, genetic data operation analysis, and the gene network ecological chain of the genetic ecosystem.

Blockchain technology is a decentralized distributed data storage technology. Its core value is to create a secure and trustworthy system that allows mutual distrust of organizations or individuals to interact with each other with trust without a central authority. At the same time, the "XYC" platform uses blockchain cryptography, distributed coherence protocols, consensus protocols, and peer-to-peer network communication technologies, so that the data cannot be modified at will and deleted.

Different from a single gene data service on a common platform, the "XYC" blockchain + assisted reproductive service platform can obtain user's genetic data from a partner institution after obtaining user authorization. Analyze the user's genes through big data and obtain reports, monitor the spiders to achieve automatic matching of related genes. Create a full-featured, interlocking, high-performance genetic ecology chain.

3.3 XYC platform based on blockchain technology

The distributed storage in the blockchain is that the each nodes have their own independent and complete data storage. Different from traditional distributed storage, the uniqueness of distributed storage in blockchain is mainly reflected in two aspects: one is that each node of the blockchain stores complete data in a block chain structure. Traditional distributed storage generally divides data into multiple copies according to certain rules for storage; The second is that the storage of each node of the blockchain is independent and equal in status, it relies on

consensus mechanism to ensure the consistency of storage, while traditional distributed storage is generally synchronized data through the central node to other backup nodes. Data nodes can be different physical machines, or they can be different instances in the cloud.

The storage of genetic data and the release of information require a large number of databases in the past. It requires a large amount of costs to establish and maintain, and the data is easily lost. The XYC platform can establish a standard, complete and transparent information base platform chain with the node chain distributed by nodes. Only where the network is needed, the information cost can be saved through the XYC platform, and there is no gateway restriction. More importantly, the XYC platform provides more comprehensive privacy protection and is based on the XYC platform's ability to provide unchangeable underlying blockchains. Enables low-cost operation while protecting corporate privacy and security.

| Application components | Information track | smart contract | Notarization mechanism |
| | User Managemen | authority management | Digital assets |

| Consensus component | POW   DPOS |
| | POS   PBFT |

| Security components | Identity authentication   HASH |
| | Digital signature   Encryption Algorithm |

| DARE | JIT   HASH |
| | DSP   HLB   RT SDK |

| Storage components | Perpetuation mechanism   Block Storage |
| | LVDFS   DDVT |

| Smart service | data collection   data storage   Big data analysis Genetic ecosystem |
| | Personalized service   Token |

3.4 XYC's Technology Architecture

The XYC block chain + assisted reproductive service platform is based on technology driven, focusing on precision medical services such as assisted reproduction and gene detection, it is
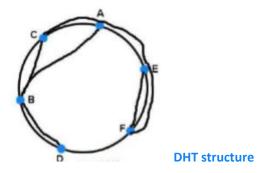
committed to creating an integrated platform that can provide users with intelligent medical services. Build a blockchain platform based on public chains, and use XYC digital currency based on ETH's smart contract technology as a payment tool to provide convenient payment services for global users. XYC will also provide smart contract templates and frameworks, application components, and customized API and SDK.

XYC is divided into six technical levels: they are the data layer, network layer, consensus layer, incentive layer, contract layer, and application layer.

3.4.1 Data layer to solve the data transmission speed and security issues

The XYC data layer contains data blocks, chain structure, hash functions, time stamps, merkle trees, and asymmetric encryption. The use of data blocks and chained structures is the core technology for decentralization. XYC uses block technology and chained structures to allow data to form numerous nodes throughout the entire network, so each node has a unique storage method (Distributed accounting). Each accounting node is an XYC core technology component that is entrusted by different IPT holders to be responsible for the consensus mechanism and participation in the manufacturing block.

The unique data storage methods such as time stamps, hash functions, and asymmetric cryptography provide security guarantees for this huge flow of data and transactions. XYC data layer = distributed accounting + big data + AI data processing. Distributed Hash Table (DHT) is a powerful tool that features a ring topology in which each node has a unique node ID (ID), which is a 128 Bit hashes. Each node keeps the ID of its predecessor and successor in the routing table. As the picture shows. Through these routing information, you can easily find other nodes, this structure is mostly used for file sharing and media transfer.

DHT structure

The main feature of XYC's distributed ledger automation is the automation of settlement. It allows clearing and settlement to be effectively combined into one step, allowing transactions to

be completed in an instant.

The XYC data layer greatly optimizes data processing methods, speeds up the spread of data, and ensures the security of data during such high-speed transfer.

3.4.2 Network layer solves trust payment problem

P2P (Peer to Peer) Protocol Supports Data Transmission and Signaling Exchange of Nodes in a Blockchain Network. Supports configuration of multiple P2P protocols, communication mechanisms, and serialization mechanisms in XYC system design, in terms of communication security, flexible protocols are used according to different scenarios to support secure communication protocols such as HTTPS, TLS, and WSSS. The OAUTH authentication integration can be supported in establishing platform application external service interfaces. The P2P trading mechanism and the underlying data blocks combine to form a new payment system, and its data is also more reliable.

3.5 XYC smart contract to solve the problem of industrial intelligence

XYC based on the blockchain smart contracts include transaction processing and preservation mechanisms, as well as a complete state machine for accepting and processing various smart contracts; and transaction preservation and state processing are all done on the blockchain. Transactions mainly contain data that needs to be sent, and events are descriptions of these data. After the event information is passed to the smart contract, the resource status in the contract resource set is updated, triggering the smart contract to perform state machine judgment. If the trigger condition of one or more actions in the state machine is satisfied, the contract is automatically executed by the state machine according to the preset information.

The intelligent contract system describes triggering conditions based on event descriptions, when the triggering condition is met, the preset data resource is automatically issued from the smart contract, and the event including the trigger condition. The core of the entire smart contract system is that the smart contract processes the event through the smart contract module, going out or a group of events. A smart contract is just a system of transaction modules and state machines. It does not produce smart contracts, nor does it modify smart contracts. It exists only to allow a complex set of digital promises with triggering conditions to be correctly implemented in accordance with the participants' will.

3.5.1 Smart contract construction and execution steps

The construction and execution of smart contracts based on blockchain are divided into the following steps:

A. Multiple users participate in formulating a smart contract

B. Contracts spread through Peer to Peer networks and deposited into blockchain

C. Blockchain built smart contracts are automatically executed

3.6 Operating mechanism

Distributed account +Peer to Peer+ intelligent contract constitutes the core of XYC technology. As a separate internet entity, How do we personally operate on this complex mechanism? XYC's distributed account and intelligent contract technology will be divided into four steps. First of all, the XYC of each of us is a unique individual, we will also be other XYC relay chains and validators. All messages we receive and post will inform each XYC holder. Unless we get more than 50% support, our information will not be tampered with. Secondly, we will release the DOT to protect the relay chain during the execution of the validation process, and then maintain the chain by collecting the user's link transactions, and provide state conversion proof for the validator. Everyone will become a network watcher, making false information difficult to survive.

3.7 Why choose the technology of the ETH?

3.7.1 Operation principle

ETH combines many features and technologies that are very familiar to users of Bitcoin. At the same time, it also made amendments and innovations. The Bitcoin blockchain is purely a list of transactions, and ETH's basic unit is the account. The vision of ETH is to create a decentralized, world-class software system that can always be run, with absolute privacy and self-evolution. It extends the concept of the Bitcoin blockchain: verifying, storing, and copying transaction data on many computers. Eth takes this concept a step closer, which makes it possible for many computers in the world to run complex code simultaneously.

3.7.2   The technical advantage of the ETH

Development costs: Ethereum provides a package of maintenance solutions that have been widely recognized by the public. The use of Ethereum infrastructure can reduce the cost of network construction and the potential vulnerability of self-development.

Safety: Ethereum owns the largest computing network in the world, which means it is the world's

safest blockchain network.

Circulation: There is a one-to-one relationship between wallet address and Ether address, users can more easily communicate and transfer with Ether and other digital currencies running on the chain.

3.8 Technology Vision of XYC

3.8.1 Gene Intelligence Data

In the past, databases or ledgers were held by a central agency. All records were sent to a central agency or management agency. This method has its drawbacks:

1. Each institution owns their books and will create a risk of "center point failures."

2. Because all kinds of accounts need to be audited, it will take a lot of time to complete the transfer, which will lead to errors and duplication.

In the "XYC" blockchain + assisted reproductive service platform, the blockchain system will use a distributed database to allow each participating node to obtain a complete copy of the database. Users can query their own genetic data once they log in to the platform. The platform analyzes user information through big data and provides personalized services based on the results to achieve high intelligence.

3.8.2 User gene track report

Blockchain technology "decentralizes" the technical features and provides a trust-based system that is based on technology rather than credit. All user information is stored and recorded by blockchain technology, and the complete trajectory is retained to make this integrity system more complete. Therefore, "XYC" blockchain + assisted reproductive service platform can build a brand-new integrity system. The user gene data in the platform will be completely recorded after use, it will be completely recorded and form a complete trajectory, ultimately forming a trajectory report to ensure the absolute safety of the data.

3.8.3 Gene identification code

Traditional data centers usually store data on a central node. The central node is completely controlled by data centers, and data centers can modify and delete these data at will. This causes the data center to sell fake data, falsify or delete data for profit reasons. The "XYC" blockchain + assisted reproductive service platform uses the unique encryption technology of blockchain

technology to protect the genetic identity through the password, only the corresponding key can be used.

3.8.4 Safe storage of gene data

When the XYC platform is authorized by the user, it can obtain personal information such as the user's situation, data and other personal information, and store it on the platform; the user can view the account information of his own exclusive.

Chapter Four   The application scene of XYC

4.1   Application scene

The XYC assisted reproductive service platform is an intelligent gene database based on block chain, which stores the individual gene data from all over the world to provide intelligent services.

In the medical area, the XYC platform works with hospitals and DNA research institutions to analyze users' genetic data. It not only provides an in-depth analysis of the user's current physical condition, but also has great benefits for people with a family history of hereditary and cancer patients, it can predict the possibility and time of people's disease and take precautions and treatment measures. Through large data technology, more common people's genetic data are collected and used to find the missing population, abduction children, and the DNA records of each user to obtain the comparison function.

Root-seeking ancestors: Chinese family patriarchal concepts are deeply ingrained, and the DNA genealogy function can make the family members of the same family deepen their blood connections.

Information guidance: DNA can acquire not only health data, but also various biometric information that can be adjusted individually. Therefore, the XYC platform can provide enough data support from the DNA chain to generate an interpretation of each person's lifestyle and life code, embedded in the application of life, and can obtain better guidance information every day.

Neonatal Medicine: The XYC platform can be used for IVF, pre-pregnancy testing, prenatal testing, neonatal testing, etc., providing services throughout the entire life cycle to achieve neonatal genetic disease screening, disease prevention in advance, and more.

4.2 Future Value Analysis

"XYC" block chain + assisted reproductive service platform has opened up a new era of research and application of gene map, and has broad application value in the future.

First, the XYC contribution to medicine, It will be brilliant in test tube baby, gene diagnosis, gene therapy, disease prevention, identification of disease susceptibility genes, lifestyle of risk population, and intervention of environmental factors.

Second, XYC's contribution to biotechnology can be applied to the analysis of large amounts of user data:

1. Genetic engineering drugs: secretory proteins (peptide hormones, growth factors, chemokines, coagulation and anticoagulants, etc.) and their receptors.

2. Diagnosis and research reagent industry: Gene and antibody kits, diagnostic and research biochips, disease and screening drug models.

3. The promotion of cells, embryos, tissue engineering: Embryonic and adult stem cells, cloning techniques, organ regeneration;

In the future, we will be on the basis of assisted reproduction and genetic testing, Gradually formed strategic cooperation with subdivided precision medical service providers around the world. For example, the health of women and the health of the elderly are not only personal but also social issues under national governance. We hope that through our new technology, we can contribute a lot to the cause of human health.

Chapter Five   XYC issuance

5.1   The purpose of the XYC issue

Xingyun Coin is a digital asset based on blockchain technology. As the token of the XYC, its value will be mainly reflected in the platform business, such as settlement currency. Through the recognition model, attract more users to participate in this recognition. So that more people can participate in creating a healthy and orderly auxiliary reproductive industry ecosystem, this way of digitizing assets will play a major role in the orderly development of the assisted reproductive industry and the genetic testing industry.

5.2 XYC issuing rules

5.2.1 XYC issuance date

May 10, 2018

5.2.2   XYC issuing plan

1. The total issue amount of this XYC is 1 billion, and the total amount of recognition is 300 million.

2. The currencies accepted for this issue are ETH, USDT, CCEC

3. This issue raises a total of CCEC not exceeding 22500000, if the total number of CCEC is up to 22500000 (or 450 million of the total value of ETH/USDT), it will no longer be accepted. Or 300 million XYC in accordance with the provisions of the conversion ratio, the purchase ended, no longer accepted subscription;

4. Up to 4200 CCEC per account

5. In the phase of recognition, token exchange is carried out according to 1CCEC=13XYC. If the price fluctuation of CCEC is relatively large, corresponding exchange adjustment will be made according to the market.

6. XYC will calculate the conversion ratio within 10 days after the end of the bidding process, and distribute the XYC to the sponsors through the Xingyun Coin purse. After the XYC allocation is completed, the numismatic transaction can be conducted.

5.3   The distribution and use of the token

No.	Project	Proportion	Note
1	Recognition	10%	Overall operation of the project, the issuing part follows the locking mechanism, releasing 5% every 15 days.
2	Community Support Fund	70%	Community holds for the prosperity of XYC ecology, include community contribution awards, POS package awards, and reissues. Its use will be strict publicity.
3	Seed wheel	10%	Seed investors recognition
4	Team holds	10%	Used to motivate members of the team who have important contributions and use it flexibly for emergency use. (Locked in five years, released in five phases, released 20% each year)

5.4   Operating funds and uses

No.	Project	Proportion	Note
1	Project operation	60%	Operating costs
2	Technology operation	20%	Technology platform development, maintenance, operation and subsequent update iterations
3	Special Contribution Award	15%	Technology platform development, maintenance, operation and subsequent update iterations
4	Team motivation	5%	Awarding members who have made important contributions in the community

5.5   XYC Team commitment

1. The XYC team will publicize the work progress of XYC quarterly and announce the use of funds every six months.

2. This release is based on the principle of openness and transparency. All processes and details will be announced in a timely manner.

3. The rights and interests of users will be implemented in accordance with the rules, which will fully protect the rights and interests of users in this issue.

5.6   Development Plan

May 2018   Launched the XYC token and published a white paper

June 2018   The project infrastructure is completed and the major exchanges are on the line

September 2018   Third quarter global blockchain medical summit will be held

October 2018   The mainstream position of XYC project in blockchain market will be realized

December 2018 The project of cooperation between blockchain and XYC will be fully launched

Chapter Six   Our consultant team

Xia Chen   CEO

Ms Chen is the chairman of Singapore Wanzhong Foundation and the initiator of XYC project. Ms. Chen has been professionally operating for 18 years in areas such as assisted reproduction for humans, systematic restoration of postpartum women, stem cell transplantation and anti-aging. She has successfully helped thousands of domestic and foreign families give birth, more than 10,000 cases. She has profound influence in the industry and her business has covered Asia currently.

Powen Pan   COO

Mr. Pan is the COO of Singapore Wanzhong Foundation and the co-funder of the XYC project. Mr. Pan has been engaged in international speech research for a long time, professionally training entrepreneurs to enhance his speech ability, specializing in a hundred people lecturer group, and giving lectures on leadership courses to Tsinghua EMBA president classes.

Mingfeng Lu   CO

Mr Lu is the CMO of Singapore Wanzhong Foundation and the co-funder of the XYC project. He has more than 10 years of experience in marketing and has led the team for many years. He has helped more than 2,000 companies transform and make profits online. He and the team have created one after another commercial miracle. It is a new generation of entrepreneurs emerging in the Internet age.

Yufan Wang CTO

Mr wang is a Chinese overseas returnee. He graduated from Penn State Advanced Systems Software Engineer. He is proficient in various computer software, blockchain application solutions, and good at applying cryptography and security protocols, cloud computing security, etc. He has worked for APPLE JNC and has 9 years of experience in embedded software and hardware development and management..

Chapter Seven -- XYC Foundation

7.1 Foundation establishment

The XYC team will launch in Singapore and set up the XYC Foundation. The laboratory will be established in the United States. The foundation is a newly registered non-profit entity. In the past, the LinUx Foundation has been successfully operating for many years, promoting many technological products and community development, and promoting product improvement and practice. The team has learned from the management experience of the LinUx foundation, focused on the technology path and promotion strategy of the XYC, combined with the community to absorb social wisdom, which is also consistent with the characteristics of the blockchain democratic governance. XYC team commissioned a trusted third party organization to establish a new foundation and maintain the daily operations. After the Foundation is established, it will select qualified community members, join the Foundation to serve, participate in management and decision-making, and achieve the foundation's development goals.

7.2 Our Mission

XYC as the builder of global intelligent investment ecology of encrypted digital currency, it is committed to the development and promotion of XYC and provides financial support for it. From creating digital currency to investment content and investment strategies, to life and health

products, XYC is promoted as a blockchain infrastructure to serve a wider range of industries,
promoting XYC's ecosystem is developing healthily.

Chapter Eight   Risk Warning

8.1   The risk of lost currency

The buyer's token may be associated with an "XYC" account before being assigned to the
buyer, the only way to enter the "XYC" account is the relevant login credentials selected by the
purchaser. Losing these credentials will result in the loss of tokens. The safest way to store login
credentials is that the buyer separates the voucher into one or several places to store it safely,
and it is best not to store it and expose it to work.

8.2   ETH Core Agreement Related Risks

The tokens and "XYC" applications are developed based on the Ethernet protocol, so any failure
of the Ethernet protocol, the unexpected functional problems or the attack, may lead to the
cessation of the tokens and the "XYC" applications. In addition, the value of an account in ETH
may also fluctuate in the same manner as tokens.

8.3 Risk related to buyer's voucher

Any third party obtains the purchaser's login credentials or private key, which may directly
control the purchaser's token. In order to reduce the risk, the buyer must protect its electronic
device to prevent uncertified access requests and access the content of the device.

8.4   Related risks of judicial supervision

Blockchain technology has become the subject of regulation in various countries in the world.

If the regulatory body intervenes or exerts influence, "XYC" applications or tokens may be
affected. For example, if an ordinance restricts the use and sale of electronic tokens, which may
be restricted or even terminated directly "XYC" development.

8.5 The risk of token mining attacks

Like other decentralized cryptography tokens, blockchains used for "XYC" applications are
vulnerable to mining attacks. For example, double flower attack, high force ratio attack,
"Self-benefit" mining attacks, excessive competition attacks, any successful attack is a risk for

"XYC". Although "XYC" is working very hard to improve the security of the system, the aforementioned risk of mining attacks is real.

8.6 Risk of dissolution of "XYC"

Due to various reasons, including fluctuations of tokens price, "XYC" application development problems, breakdown of business relationships or claims for intellectual property rights, "XYC" projects may be hit hard or directly dissolved at any time.

8.7 Other risks

Cryptography tokens are a new and untested technology. In addition to the risks mentioned in this white paper, there are also risks that some "XYC" teams have not mentioned or have not yet foreseen. In addition, other risks may also appear suddenly or occur in a variety of combinations of risk already mentioned.