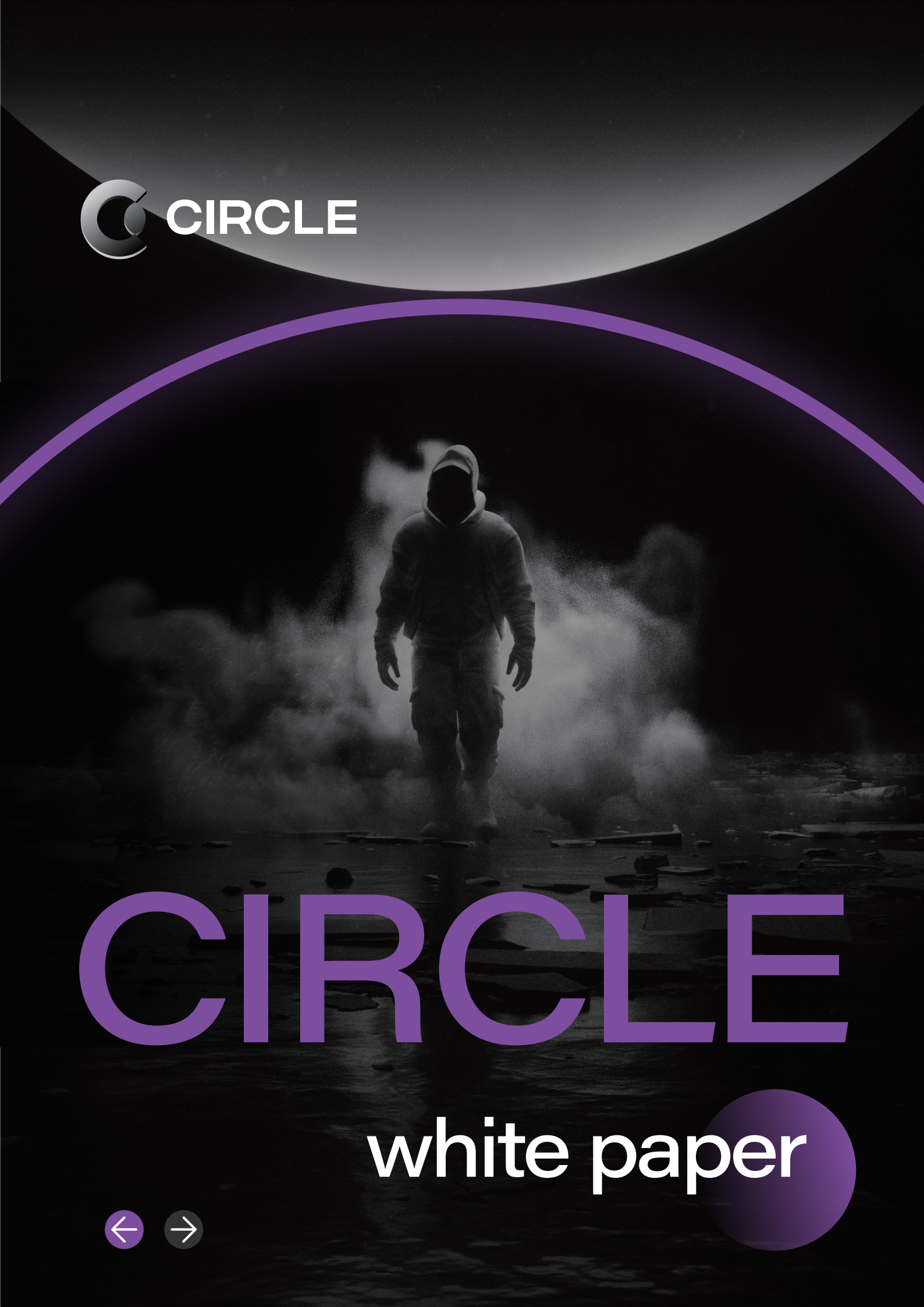
CIRCLE



CIRCLE

white paper

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SUMMARY

Social is the most basic and highest frequency of human needs. Over the past few decades, social media has grown exponentially and has become increasingly popular
A necessary tool for social activities. Now social platforms based on modern Internet technology have brought us a new social experience, but with a centralization attribute
Social platforms also pose problems for users:
1.User information disclosure, privacy security can not be guaranteed
2.User data is freely acquired by the platform and arbitrage
3.The platform is full of false users and information
4.The ownership of user's value is not clear, lack of incentive
5.Lack of credit system, high user connection costs
At present, the block chain industry is in the forefront of the rise, the infrastructure is being prepared and improved, and the application and industry transformation based on the block chain appear rapidly. The decentralization, open autonomy, anonymity and non-tampering of blockchain technology are more natural fit with social networks. Against this background, the social public chain project CIRCLE came into being.CIRCLE is a blockchain social platform, using decentralization technology to enhance the privacy and security of personal social, users are free to chat anonymously and communicate, publish their own comments, read, use various applications and services within the CIRCLE platform, without worrying about the security of personal data.
CIRCLE vision is to reconstruct the next generation social network platform with block chain technology, so that it is decentralized, the privacy security of users is guaranteed, and the user value is returned to the individual.

Chapter I Project background

1.1 Development of the global social networking industry

Social interaction is the basic attribute of human as a social group. Since the birth of human beings, human social activities have never stopped. Socialization is the foundation of the construction of human civilization. In order to obtain the most basic material data of survival and development, people combine with each other, produce together and exchange with each other. In the past few decades, the development of social media has grown exponentially, and has gradually become a necessary tool for people to engage in social activities.

In overseas markets, 1997, First modern social networking site Sixdegrees.com online, Users can create their own accounts and build relationships with other users; Around 2003, Friendster 、MySpace and other social networking sites rise; Linkedln aimed at elite business people; These social networking sites become the embryonic form of integrated and vertical social networking sites in the future; Around 2005, Facebook, of large social networking sites Twitter and so forth, The use of social networks for daily communication has gradually become a user's habit, The social network enters the rapid development stage; Around 2010, The development of multi-screen technology promotes the development of mobile Internet, There's a proliferation of social networking sites, Such as photo social software Instagram 、instant messaging social software WhatsApp, Social networks are an integral part of the lives of most users.

On the Chinese market, in 1999, Tencent developed ICQ software QQ, currently has a large number of registered users, and carries people's various social relations ;2005-2010, Internet popularity, Renren, Happy, Sina Weibo and other social networking sites online, and has a high impact, quickly access to a large number of users; after 2010, Internet communications technology has improved, smart phones are popular, mobile Internet boom, phenomenon-level social application WeChat was born; various social software is also gradually competing for users fierce competition.

1.2 Status and prospects of social markets

1.2.1 Market Status

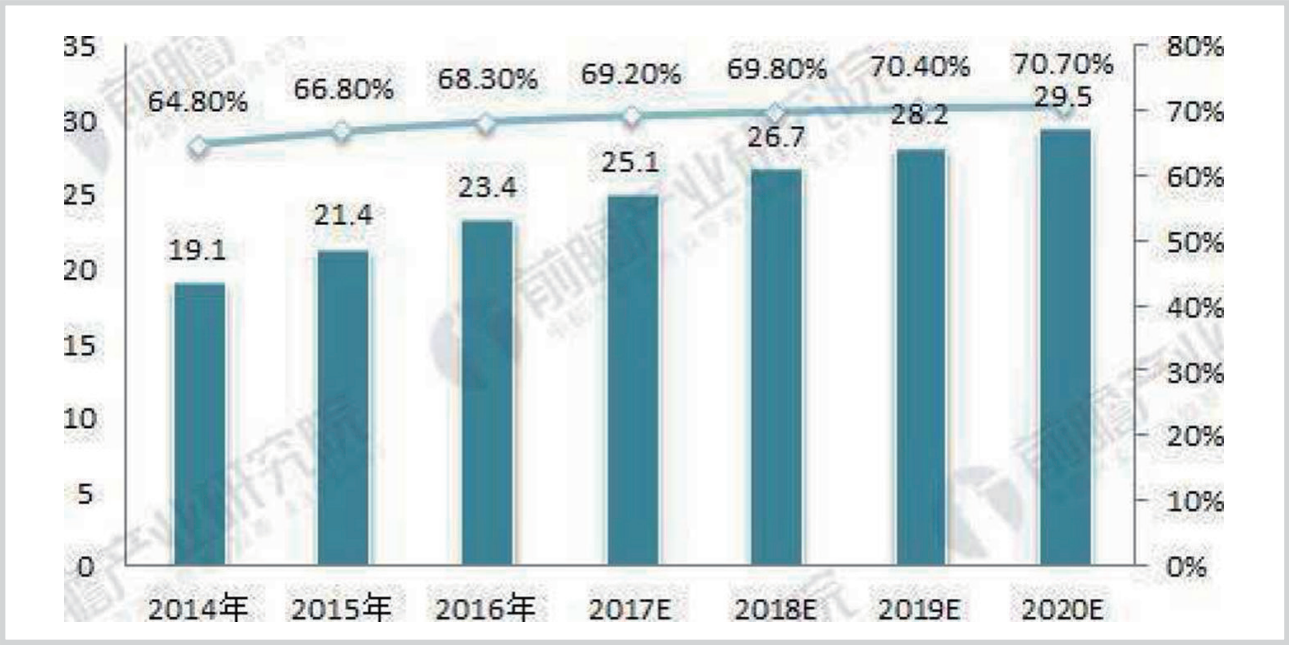
In recent years, with the development of global Internet technology, the large-scale coverage of mobile networks and the power of smart phones, many people have been inseparable from mobile phones. According to the statistics of relevant authorities, China is the most "Phubber" country. Now China has reached about 1.1 billion Internet users and become one of the most Internet users in the world. People are increasingly inseparable from mobile phones. In addition to watching video and playing games on mobile phones, social networking becomes a mobile phoneThe biggest reason.

The world's largest social software is Facebook and WhatsApp, ranked first and second in the world, respectively, and has become the most active social software in 168 countries overseas. Up to now, WhatsApp have more than 1.5 billion daily active users, while Facebook have more than 1.3 billion

monthly active users, ranking global social software champion, and Zuckerberg has become a global social software king. However, it is worth noting that the two social software active range is mainly in Europe and the United States.

China's largest social software is WeChat and QQ,, which use more than 1.02 billion people, ranking third in the world's social software rankings, according to Tencent officials. After the alliance between WeChat and WeChat, WeChat has gone international and has more than 100 million active users overseas, but so far these active users are mainly foreign students and overseas Chinese, foreigners who have trade with Chinese. Now WeChat is not only a single social software, but also supports mobile payment, WeChat public number articles, Mini Programs as one of the social software. The development cycle of global social network is long. In recent years, the increase of the scale of network users in developing countries represented by China has promoted the remarkable increase of the total scale of global social network users.

Global Social Network Industry User Size and Forecast 2015-2022(Billions,%)



* Proportion of total Internet users (%)

Social media has become an important part of people's lives, and this will not change in the short term. Data show that the number of social media users is increasing every day. Eleven people join the media every second. In 2017, about 2.5 billion people worldwide use social media. Now, this data has grown to about 3.8 billion, accounting for more than half of the world's population, a qualitative leap.In 2019, social media per capita used 144 minutes a day, up 62.5 percent from 60 minutes in 2012.

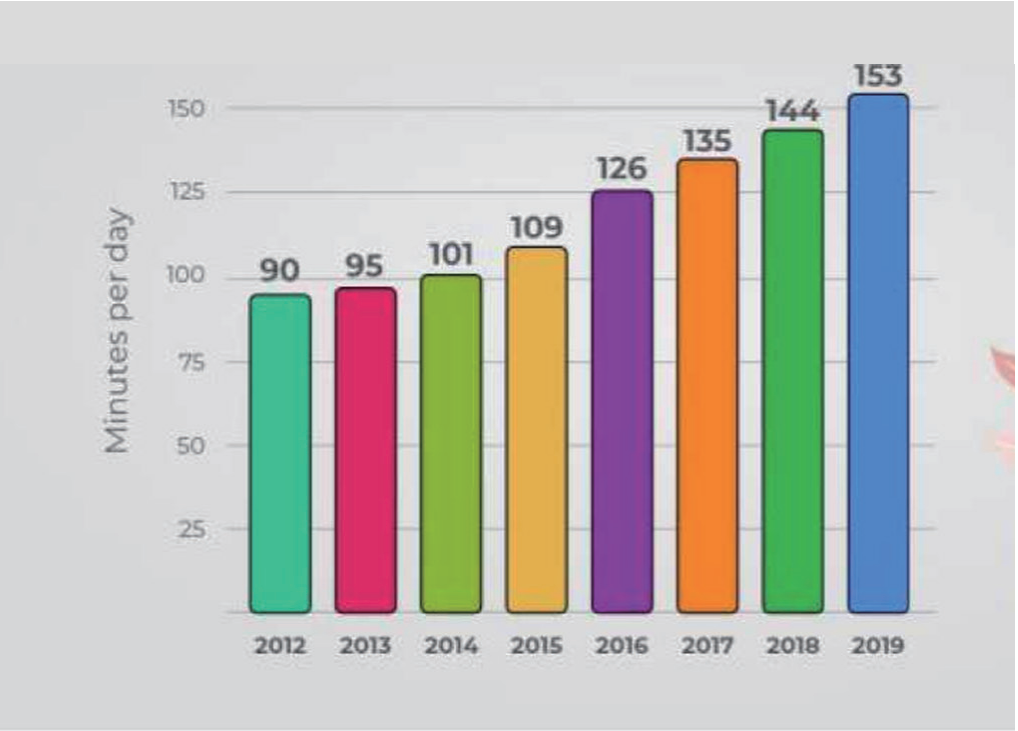
1.2.2 the average daily length of users in social media in various regions of the world

On average, The time users spend on social media is 144 minutes. But given the uneven levels of development, By continent, The average daily use time of users in various regions can help sellers better lock in the delivery group, The figures are: North America :2 hours 6 minutes, South America :3 hours 24 minutes, Africa :3 hours 10 minutes, Europe :1 hour 15 minutes, Asia/Oceania

:2 hours 16 minutes. In addition, Since 2012, People spend more time on social media every day. It's not certain what's going on, But with the number of Internet and social media users growing globally, After 2020, The average use time of global users on social media will also increase.

Daily Time Spent On Social Networking

in 2012-2019



According to the World Health Organization, the average human life expectancy is estimated to be 72 years in 2020. Assuming that many people start using social media from the age of 10, this means that the average person will spend a total of 3,462,390 minutes on social media platforms in a lifetime. In other words, according to projections of social media usage in 2020, users will spend nearly six years and eight months on social media. Although there are other factors to be reserved for this number, the trend over the past few years shows that people spend only as much time on social media, which means that people may spend 10 years or more on social media in their lives. Also, BureauofLaborStatistics data show that people spend more time on social media than on daily activities such as eating.

1.2.3 Market Prospects

With the improvement of smartphone R & D innovation and the popularization of product utilization, mobile phone will become the main driving force of social network growth in the next few years. Statistics show that the scale of mobile social network users accounts for the proportion of social network users year by year. In 2016, the number of mobile social network users worldwide was 1.88 billion, accounting for 80.20 percent of the total number of social network users. According to the data in the "China Social Network Industry in-depth investigation and

Investment Planning Analysis report 2018-2023", by 2020,2.55 billion people, accounting for 85.9% of the total number of social users.

Changes and projections in the size of users in the global mobile social network industry , 2014-2020($100 million,%)

A Mobile Community Shuang Network User Size (HKU) g% of Internet users

Former APP of the Economist

1.3 Pain points on Internet social platformst

The age of our existence is an age of information and data-centric, with a gradual increase in the reliance of the public on social media, while social media gives a big deal
The threat of public information security is also rising. Now that the Internet and social platforms are booming, their pain points are slowly emerging.

1.3.1 privacy is not protected

In the Internet context of big data, users' information on social platforms is often sold to other companies. Or when the network of a central social platform is attacked, the user's personal privacy is basically an open secret.
In 2013, Snowden provided confidential documents to the media and exposed several United States Government secret intelligence surveillance projects, including the Prism project. This incident is known as the "Prism Gate Event ". Snowden's exposure documents show that the us government collects information directly from nine corporate servers, including microsoft, google, yahoo, Facebook、PalTalk、AOL、Skype、YouTube and apple, through a project called PRISM".
Leading media reported in early 2018 that the British political analysis company Cambridge Analytics (CambridgeAnalytica) was hired by President Donald Trump's electoral team to obtain

data from 50 million Facebook of users without permission, using tools to identify user personality traits. In order to push customized advertising to influence the election behavior of these people, to help President Trump win.
From these events, we can clearly know that in the face of centralized government sovereignty and institutions, there is little real privacy for individuals, and personal data such as information and behavior on the network of each of us may be monitored. The centralization structure has directly affected the further development of civilization. Now the development process of world civilization has encountered severe challenges, and we can not but rationally reflect on the world now composed of many centralization organizations.

1.3.2 personal information insecurity

Users have no control over their data on social platforms. The traditional centralized platform requires customers to provide core privacy for identification, such as: mobile phone number, ID card information, home address, bank card information, etc. This centralized privacy collection method, the user core privacy disclosure risk is extremely high, once the problem occurs, the consequences are unthinkable.

1.3.3 data value can not be reflected

Every user creates data for the social platform every moment, which creates commercial value for the platform, but these values can not be reflected in the user himself. The platform makes profit by analyzing the data of the user's behavior on the social platform, but the user does not get the benefit return, there is the problem of uneven distribution. The behavior of users' likes and publishing content on social platform can not get the corresponding return, and the platform can accurately publish advertisements and marketing articles through big data analysis of users' behaviors, preferences and pain points, which is not conducive to the healthy and ecological development of social platform.

High 1.3.4 user connection costs

The connection between users is mainly based on trust, and the existing social platforms are either WeChat acquaintances or Weibo strangers. For strangers to socialize, trust is the basic condition for two people to establish a relationship. At present, there is no very good way for two strangers to establish contact, usually acquaintances introduce each other, this kind of time cost is very high, the other is to chat with each other, this kind of trust risk is very big. Platform in this process has a certain role in promoting, but the effect is not obvious.

Dissemination of false information 1.3.5 users

In essence, social platforms provide users with information interaction, and in recent years, malicious users spread false information on social platforms. The reason is that the user is malicious and obtains certain benefits or attention by spreading false information. Secondly, the communicator may be used or malicious, because it can not identify the truth and falsehood of

the information, but also recognize the views (or attract) in the information, thus assuming the role of disseminator of false information. In addition, the platform, as a third party that provides information interaction service support to users, should also bear certain responsibility when spreading false information.

1.3.6 do not have the right to truly express their views freely

Users who express their views on social platforms may be deleted because of religion or politics. Social platforms have the right to delete content and close accounts, and users can not really get free speech.

The combination of block chain and social

2.1 Origin of blockchain

With the arrival of a new round of industrial revolution, cloud computing, big data, Internet of things, block chain and other new generation of information technology in intelligent manufacturing, privacy security, energy, health care and other industries are becoming more and more important. In this round of industrial revolution, the development of block chain information technology is particularly rapid, and it has become the direction of deepening the application of information technology in various industries.

From the current development path of block chain technology, the development of block chain technology and application needs cloud computing, big data, Internet of things and other new generation of information technology as infrastructure support. Block chain technology and application play an important role in promoting the development of a new generation of information technology industry, which is a historical premise of this trend of technological innovation.

Because of its trustworthiness, security and non-tampering, the well-known technology of block chain liberates more data and promotes the mass growth of data. The decentralization of the block chain makes the data from the collection, transaction, circulation and calculation and analysis of each step of the record can be left on the block chain, so that the quality of the data has an unprecedented strong trust endorsement, but also ensures the correctness of the data analysis results and the efficiency of data mining. Block chain can further standardize the use of data, fine authorization range. For the circulation of data transaction, it is helpful to break through the isolated island of information, establish the horizontal circulation mechanism of data, and promote the formation of data transaction scene based on globalization based on the value transfer network based on block chain. Global payment field also entered the blockchain application era tide.

The global payment between countries requires more stringent requirements for safety factors,

confidentiality, contractual spirit, and so on than for legal tender and conventional payment channels in any country. When the global payment field uses block chain non-tampering, all-history database storage technology, the huge block data set contains the whole history of each global payment transaction. With the rapid development of block chain application, the data scale will become larger and larger. It is urgent to integrate different global payment business scenarios with block chain technology seamlessly.

Therefore, by the famous encryption social platform SECRET the original architect, the United States RADAR laboratory original core technical personnel research and development, with the global social ecology based block chain project one by one CIRCLE emerge as the times require, complements the current anonymous social domain block chain technology blank, opens a new chapter for the global social industry.

2.1 Origin of blockchain

In early 2009, the bitcoin network was officially launched. As a virtual currency system, the total amount of bitcoin is limited by the network consensus protocol, and no individual or institution can modify the supply and transaction records at will. Digital currency is an unregulated, digital currency, usually issued and managed by developers, accepted and used by members of a specific virtual community. The European Banking Authority defines virtual currency as:

The digitization of values indicates that they are not issued by central banks or authorities and are not linked to legal coins, but because they are accepted by the public, they can be used as a means of payment or can be transferred, stored or traded electronically.

In recent years, the excessive issuance of paper money has led to increased inflation, the frequent security crisis of third-party payments, and the gradual maturity of block chain technology, the decentralization of digital currencies such as Bitcoin, Ethernet Square, and Ruibo coins came into being. Digital currency has the characteristics and advantages of low transaction cost, fast transaction speed, high anonymity and fixed amount of money. Because of the advantages of digital currency, it has been widely welcomed by the world markets. According to Coinmap data ,15355 businesses worldwide have accepted Bitcoin. Among them, Turkey, Argentina and other economically unstable countries, their business acceptance is high. Second, North America, the European Union and other more developed international and regional.

Facebook launched Libra virtual cryptocurrency in June 2019, with worldwide impact.Libra may form a global super-dominant currency, thus affecting the traditional transaction settlement currency. To our country, the emergence of Libra, on the one hand, will have an impact on our traditional currency, threatening the sovereign status of our currency; on the other hand, because the RMB is not included in the Libra basket of currencies, It will reduce the reserve demand of central banks and hinder the internationalization of RMB. In response to this threat, CCTV timely launched the central bank digital currency.In September 2019, China Daily reported that the central bank's digital currency closed-loop test had begun, and the central bank's digital currency was on the rise. With the permission of national laws, digital assets will be gradually applied to the payment of cross-border consumer transactions around the world, with unlimited development potential and space in the future.

2.3 Application of blockchain in the Circle

Facebook、established social media companies such as Google, Twitter、Reddit and Snapchat、Tencent have unilaterally controlled their respective social media platforms. These companies use the attention of their users for advertising sales, thus generating billions of dollars in revenue. In contrast, content creators get nothing but a dime. On the two platforms of YouTube and Twitch, creators of content can get dividends from advertising sales, but only if advertising revenue must reach a certain amount, and YouTube and Twitch will also extract 25% to 45% of advertising revenue as a commission. On other platforms, content creators usually don't get a commission on advertising revenue.

In a very general way, if social applications are to be based on blockchain technology, they need to explore new social spaces that can only be supported by blockchain technology. Specifically, social media platforms based on blockchain technology can be established only by using something proven and very scarce to attract a large number of users to participate in it. Virtual reality platform is Decentraland the first application of this idea, and encryption technology is popularized.

As blockchain technology and applications mature, social media platforms will have more developers, more users, more content. Social media protocols based on blockchain technology will provide people with a variety of new ways to express themselves. According to this concept, the logical conclusion that we can finally get will be a dedicated, huge, open set of application content covering all aspects of articles, pictures, videos, sign-in, resource reservation protocols, major events, etc.

With an open database, developers will develop tens of thousands of applications, each based on another application. Users can view all applications using their chosen applications and interact with the underlying data they think fit. This will inevitably lead to new user experience problems, but over time, as standards change and best practice experiences emerge, these problems should be self-solved. Block chain technology will provide the most important technical support in the development of global social ecology.

2.4 Opportunities of blockchain technology for social markets

According to the New York Times, FacebookCE. Mark zuckerberg plans to integrate three of the company's social messaging services: WhatsApp、Instagram and FacebookMessenger.After the integration of the App will still operate independently, but the bottom will use the same set of technology. The technology will build the world's largest social chat network, with more than 2.7 billion users. By integrating the infrastructure of these applications, Zuckerberg wants to involve users more in Facebook ecosystems. Integration will be completed by the end of 2019 or early 2020. Thousands of engineers are needed to work together on this difficult refactoring task. All integrated App will support end-to-end encryption. which will prevent third parties including Facebook from stealing information and enhance privacy protection.Facebook founder zuckerberg posted a 3200-word long letter on his website setting out Facebook vision for the future: building a "privacy first" chat and social networking platform.

1.Private interaction is based on. Facebook will pay more attention to private one-on-one chat and small group chat, because in these scenes, people's communication is more natural.
2.Encryption and security. Facebook will gradually support end-to-end encryption in chat, that is, the platform itself will not get user information.
3.Reduce the retention time of information. The popularity of "burn after reading" among young people suggests that a large number of users do not want information to remain on the platform for too long.
4.Interworking between different services. Facebook will try to make different chat applications interworking, users can contact friends from different platforms on one platform.
5.Secure data storage.
Facebook plan to build this future by developing WhatsApp: focus on the most basic and private use cases —— messages one by one to make it as safe as possible, and then on this basis to provide people with more ways to interact, including telephone, video chat, group chat, payment, business

The Global Use of Encrypted Currency

and so on, and eventually become a platform that provides many other private services.

These instant-messaging applications have the ability to solve the core problem that cryptocurrencies are not being adopted on a large scale. Although it will take at least a few years to verify whether encrypted currency payments in mobile communications applications will be a suitable catalyst for large-scale applications of encrypted currencies. But what we already know is that some of the world's largest investors are betting on this, and if China's mobile payment trend illustrates some problems, encrypted money may eventually become an important part of online payment.
With the development of mobile instant messaging applications, chat robots, and encrypted money becoming a new payment method, a brand new market is opening to brave investors and entrepreneurs. We have the ability to enter a world in which potential complete ecosystems will exist in instant messaging applications, with new adoption and technology changes. Pioneers willing to enter this market that needs to be reclaimed may get huge investment and many business opportunities.

CIRCLE Description

3.1CIRCLE presentation

3.1.1CIRCLE? is what

CIRCLE Chinese translation into the circle (that is, social), CIRCLE by the famous encrypted social platform SECRET the original architect, the United States RADAR Laboratory of the original core technical staff research and development, based on high-performance CIRCLE public chain technology, to create the world's first decentralized social ecology. At the same time, based on the innovative radar algorithm model, incentive pledge economic model and encrypted social application, the circle network with super consensus is constructed, expanded and maintained. CIRCLE grasp the distributed accounting attribute that block chain technology can not be tampered with, we are committed to creating a diversified intelligent ecological cluster with anonymous social as the primary application scenario. Using the basic characteristics of block chain technology, such as distributed, decentralized, transparent, open, non-tampering, and so on, to build a credible, transparent, real voice social, block chain games, live broadcast, commercial advertising and other functions in one of the commercial social platform, completely free use, user message encryption, and regular destruction, to ensure personal and business secrets, to solve the traditional social applications untrustworthy, dark box operation, data fraud, hidden rules, piracy infringement, distribution and distribution channels are monopolized, but also to solve the pain point of developers and users.

CIRCLE is a global, open blockchain social ecosystem with blockchain technology as the underlying layer.CIRCLE is a decentralized value sharing digital asset based on block chain technology. How to digitize social resources and realize market circulation through transactions has become a new highland in the digital world.As the first innovative ecological model in the world to use anonymous social as the real application scenario, the original intention of CIRCLE is to use block chain technology to integrate global social industry resources and eliminate barriers to trust and collaboration among industries. Provide the most credible technical support for the industry and decentralized coordination mechanism for inter-industry collaboration.

To save the cost and time of pre-technology research and development, CIRCLE founding team decided to adopt a scheme based on public chain to construct free ecological consumption application in block chain application, which can focus more on business development and ecological promotion. CIRC LE based on the common chain to support the operation of diversified ecology.

3.1.2 Product Architecture

By decentralizing the operation mode, CIRCLE has established a completely different mode of operation from the traditional social network: returning the control of the user's information and information to the individual and providing incentives for the contributing users. One is to ensure the security of personal data, the other is to stimulate users to make more contributions through the system mechanism. The platform is no longer central at this time, but a pure point-to-point interactive platform.

	CIRCLE	WeChat	Facebook
Topology networkt	Decentralization	Centralization	Centralization
Information security	Security, no tampering	Probable tampering	Probable tampering
Personal Data Control	Return to the user	Platform	Platform
User-generated content In return	Everyone can create their own platform Content realization	Public number reward	Only a small number of Internet celebrities Excess content income
Incentive system	Yes, stimulate everyone to make more contributions	No	No
Reaping users Information realization	Without harvesting, decision-making is left to the user	Harvested for use	Harvested for use
Social trust system	High, fair trust system	Acquaintance social, high trust	Weak, vulnerable to harassment

3.2 CIRCLE Ecology

CIRCLE with security, stability, anonymity as the core, a series of fruitful research and development have been carried out in the fields of system security, encryption protection, network security equipment and privacy control in social management. At the same time, it has additional encryption and data protection functions to protect user data, even if the other parts of the security infrastructure have been threatened, social communication will achieve the best results in a secure environment. On CIRCLE networks, users don't have to worry about their privacy being peeped, their tree tracks being monitored and tracked, not to mention their privacy being leaked, CIRCLE will bring disruptive changes to global social patterns.

3.2.1 future intelligent social ecology

CIRCLE network will gradually form a large social service network, which will bring great convenience to the global social ecological operation. Use CIRCLE-ID to log in to your security account anytime, anywhere. Through ID, all online and offline scenes connected to CIRCLE ecology can be accessed.CIRCLE will show the credit value of users in all directions, without carrying wallets.CIRCLE have multiple functions such as identification, proof of rights and interests, users can directly use the CIRCLE to pay, not to prove their identity, but to carry a variety of identification cards, and do not need to worry about verifying the identity of others. There is no need to issue cumbersome credit certificates, income certificates and the introduction of units for loans, no need to download a variety of App, for some need, no need to register and verify various platforms over and over again, users can use CIRCLE to complete a series of social behaviors in various countries and regions around the world.

3.2.2 Social Value Sharing

The traditional social business model is isolated and does not form value transmission, nor does it benefit users forever because of their identity or strong recommendation. This way each individual faces a huge competition and business crisis, the entire business environment is getting

worse and worse. CIRCLE is the core of safe, hidden and independent digital identity, which will construct the business form of sustainable value dividend according to the time and quantity of people's CIRCLE ecology, and the users' different order relationship in the ecological use CIRCLE, which may reach the exponential difference between CIRCLE. Everyone has a fair initial business form in the CIRCLE ecology. With the gradual formation of the fission ecology, This initial form of business for everyone will result in huge profit differences as fission breaks down.

3.2.3 incentive ecology

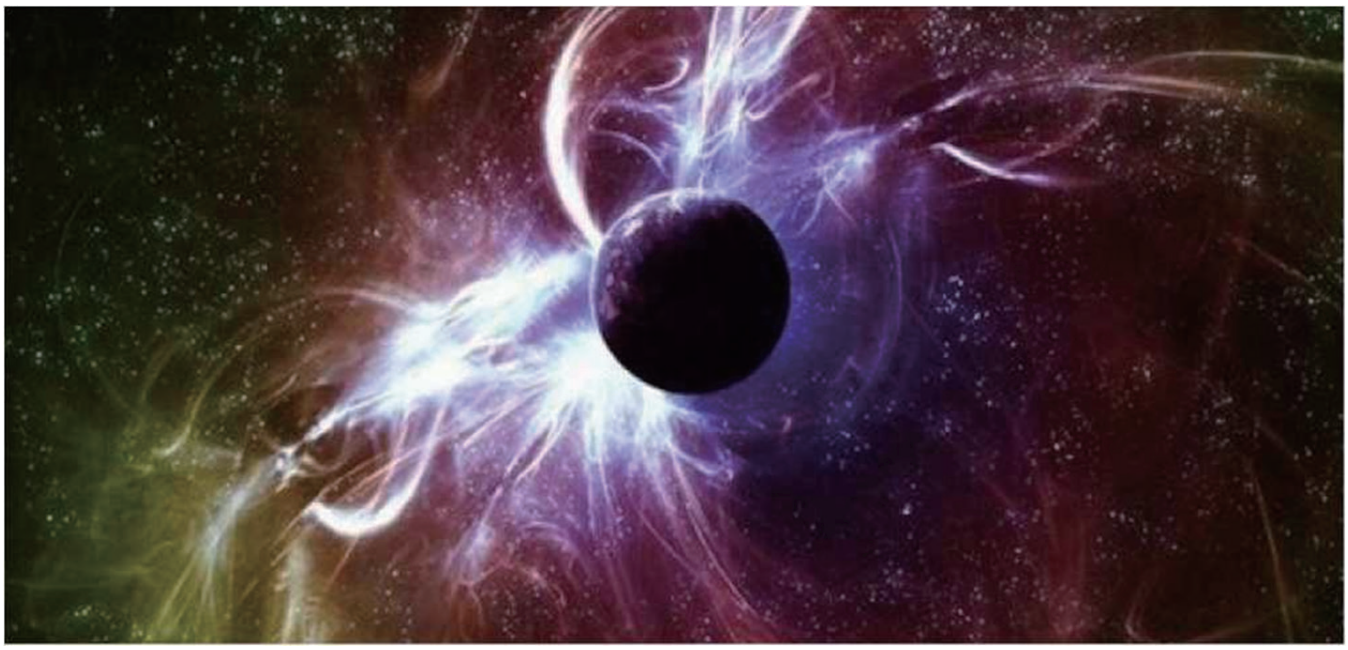
CIRCLE itself is an incentive digital application ecosystem. The block chain uses distributed networks to replace centralized data server groups. This distributed network stores and maintains a public database by returning data ownership to users. To deprive social media giants of their power. On ordinary social media platforms, users must obtain "free" services at the expense of data, while the data information of users of block chain media platforms is protected in public form on block chain networks and is not used by any backstage.
The incentive mechanism of STAKING mine pool in CIRCLE ecology can be rewarded. Users can also create their own channels to obtain the benefits of content creation.CIRCLE the point-to-point communication mode, the decentralized network structure has the characteristics of non-tampering, which can ensure the establishment of this trust, and can re-establish the credit system between people when applied to the social platform.

3.2.4 social big data services

With the arrival of a new round of industrial revolution, cloud computing, big data, Internet of things, block chain and other new generation of information technology in intelligent manufacturing, finance, energy, tourism and other industries are becoming more and more important. In this round of industrial revolution, the development of block chain information technology is particularly rapid, gradually becoming the direction of deepening the application of security in various industries. According to the current development trend and the evolution path of block chain technology, the development of block chain technology and application needs cloud computing, big data, Internet of things and other new generation of information technology as infrastructure support. At the same time, block chain technology and application development play an important role in promoting the development of new generation information technology industry. CIRCLE decentralization enables the global social data from the collection, trading, circulation, as well as computing analysis of each step of the record can be left on the block chain, so that the quality of data to obtain unprecedented strong trust endorsement, but also to ensure the correctness of data analysis results and the effect of data mining.CIRCLE big data collection system can further standardize the use of data, fine authorization range. For data transaction circulation, it is helpful to break through the isolated island of information, establish the mechanism of data horizontal circulation, and promote the formation of data transaction scene based on globalization based on the value transfer network based on block chain. CIRCLE this opened the block chain social big data service application era tide.

3.2.5 payment system: CIRCLE payment +CIRCLE wallet

CIRCLE payment tools with similar models such as banks and third-party payment agencies help users manage funds, store digital assets and provide CIRCLE wallets with other functions such as transfers. As a basic technology to construct a social online and offline combination, cross-regional, cross-industry business alliance, CIRCLE the gradual improvement of payment ecology, the connection and integration of online and offline will be realized.
CIRCLE decentralized commercial application is a bridge between digital currency and consumer transaction. It breaks the barrier between digital currency and real world, can directly connect with global merchants, and make digital currency realize the exchange of real goods and services.



3.3 CIRCLE Value

At the CIRCLE platform, the value is shown in the following aspects:
High efficiency: after going to the traditional center forwarding structure, the time of information dissemination and transaction payment is reduced from minute to full second;
High availability: failure of any node in a distributed architecture does not affect the operation of the entire social system;
High security: in a public chain closed network environment, information can not be tampered with and forged;
High scalability: new participants can quickly and easily deploy and join the entire social ecosystem:
Global social applications: a global social, payment, real application scenario that allows the global social economy to form a huge business empire;
Global transaction point: with the global user consumption cashless planning, global payment will

form a point-to-point payment method, will be a large number of transactions through the CIRCLE payment platform;
Social ecosphere: the global social user's big data consumption comprehensive utilization, the development urgent need and the thorough technical foundation;
Three chain structure: the only multi-application scene industry chain and consumption chain, social ecological chain perfect combination of three chain and integrated system structure.

3.4 CIRCLE vision

CIRCLE is the gathering point of global social ecology, and users can share information and value through CIRCLE. CIRCLE will launch payment mining, DEFI、entertainment, games, shopping malls and other applications through a variety of blockchain technologies and perfect ecological mechanisms, and open the platform API, join hands with global application developers to build an open blockchain social application ecosystem.
The CIRCLE will issue ecological basic digital assets through the public chain CCC, and enter the CIRCLE ecosystem through the subsequent continuous opening of new application scenarios landing projects. All consumption, transactions and payments must be completed through CCC.CIRCLE is committed to creating the most complete decentralized social circle, driving CCC value to increase ten thousand times, become the mainstream digital assets BTC、ETH the shoulder.

CIRCLE technical principles

4.1 Characteristics of modularization

CIRCLE platform is a set of block chain architecture that supports consensus, database, actuator and so on.CIRCLE a creative hierarchical architecture, the main chain is responsible for transaction liquidation, intelligent contracts and virtual machines are separated from the main chain and executed independently on the parallel chain, and multiple parallel chains coexist to improve the efficiency of operation. And the parallel chain is interconnected by the main chain. Simply put, the characteristics of CIRCLE platform architecture can be summarized in two directions, that is, from the perspective of vertical expansion, CIRCLE has the characteristics of consensus, database, actuator (contract) characteristics. From the perspective of horizontal expansion, CIRCLE modular design, based on the analysis of the underlying architecture of block chain, different functions and requirements of application development, divides and designs a series of functional modules. Through the selection and combination of modules, different products can be formed to meet the different needs of the market.
Developing a software is actually a process of iterative evolution, so CIRCLE adopts the development mode from chaos to order, which is convenient for developers to adjust and expand at any time. In addition, some developers may find in the development process, some of the more

special business logic, need to customize certain modules to match this business logic. From the perspective of iteration and reconstruction, and the extensibility of the system, CIRCLE the underlying architecture of block chain, the functions and requirements of different application development are taken into account, and the modular design of the system is carried out. These include mempool queuing, encrypted signature, consensus mode, RPC function, command line command, intrinsic logic of wallet, database storage, etc. All modules of block chain core can be customized.

Modular design, this is like building blocks to build a robot, hands and feet and other parts of the body are placed according to the category, can choose to assemble according to their own wishes. Under the framework provided by the CIRCLE, developers can freely combine applications and develop simple, so they can build a public chain only with basic programming ability. Without a lot of cost to develop the bottom of the block chain.

4.2CIRCLE service module

4.2.1 client

The client provides users with the management and query functions of accounts, blocks, nodes and wallets, such as creating new accounts, sending transactions, generating random seeds, obtaining block information, obtaining wallet status, and so on. All transactions are sent to the block chain through the client, signed and encrypted.

4.2.2RPC module

The RPC interface is provided to the client, and the client operates the block chain through the RPC interface, such as creating accounts, querying accounts, sending transactions, querying transactions, querying block information, and so on.

4.2.3Mempoo module

Transaction cache pool, mempool stores transactions from RPC interfaces, and transactions from P2P.The realization of Mempool is mainly to solve the problem that the processing speed of consensus module is slower than that of RPC module.

4.2.4 consensus module

Pluggable consensus module design. There are two common chain consensus algorithms, one is a pure pos algorithm that supports tens of thousands of people to dig together. A strong consensus Byzantine consensus algorithm is introduced, and the concept of DPOS voting rights is introduced, that is, each node can have different voting rights.

4.2.5 Actuator Module

The actuator is the logical processing center of the block chain. The actuator reads the state through a read-only database and executes virtual. The execution result only affects the memory and does not save the disk. Actuator input is a transaction, there are many types of transactions, different transactions corresponding to different actuators to execute.

4.2.7Blockchain module

Blockchain module is mainly responsible for receiving blocks from the consensus module and storing them to the local hard disk.

4.2.8 Encryption Signature Module

Responsible for the signature and encryption of transactions, signature to ensure that transactions can be traced back, encryption to ensure the security of transaction information.

4.3 CIRCLE Running process

1.The client receives the transaction, signs and encrypts it, and sends it to the Mempool module cache of the node through the RPC module. Transactions received by different nodes
P2P module broadcast in the network to ensure that all node Mempool messages consistent;
2.Consensus module determines the time or number of transactions and other conditions to pull the transaction list into the mempool. After the consensus module excludes duplicate transactions, pack the transaction list into the block and start consensus.
3.After the consensus is completed, the consensus module sends the block to the actuator module to pre-execute, and the local database is not written at this time. Different types of transactions enter different actuators, such as coins transactions into coins actuators. After the pre-execution is completed, the consensus module sends the block to the blockchain module.
4.The Blockchain module broadcasts the blocks to other nodes through the P2P network, and then all nodes store the blocks in the local database.

4.4 EVMWASMJSVM Support for three types of virtual machines

EVM is the etheric workshop intelligent contract virtual machine, uses the Solidity to write the intelligent contract, compatible with the etheric workshop contract.The EVM deployment mode is to deploy the intelligent contract to the CIRCLE EVM virtual machine through the interface provided by the CIRCLE. EVM contracts can also be invoked through interfaces to execute smart contracts.
WASM(there is no open source), is written in C++ smart contracts, and compatible with EOS contracts.The WASM deployment method is to deploy the intelligent contract to the CIRCLE WASM virtual machine through the interface provided by the CIRCLE. WASM contracts can also be invoked through interfaces to execute smart contracts.
The deployment mode of the JSVM is as follows: writing intelligent contract with Javascript, Javascript many developers, lowering the threshold of block chain development, a JS programmer can carry out DApp development alone, quickly and improve the development efficiency. Smart contracts can also be deployed to CIRCLE JSVM virtual machines through interfaces provided by the CIRCLE. JSVM contracts can also be invoked through interfaces to execute smart contracts.

4.5 MVCCKVDB storage support

CIRCLE original implementation of MVCCKVDB (multi-version KV data storage), Traditional block chains store data as merkle or MPT trees, Every time the data changes, The trees do a reconstruction, Less efficient. For example, For a 20-story Merkel tree, Querying the data of a leaf node requires 20 reads, As a result, the efficiency of data query is only 1/20 of that of ordinary database, For systems that perform 100,000 reads per second, Only 5000 transactions per second, greatly limits the reading performance of the system. When writing data, Also load multiple node data on the tree branch, And eventually write to disk after the update, The operation consumption in this is also relatively large.
CIRCLE draw lessons from the MVCC concept in database design (Multi-VersionConcurrencyControl multi-version concurrent control) and design a CIRCLE data storage format to improve the inefficient problems in MAVL or MPT structure. Better meet the block chain data growth to a certain scale to maintain a higher data reading and writing performance.KVMVCC's data storage format is as follows:Time

statehash=hash (KVSetheight) contains the state Hash information of the previous block, the state data KVSet information of the block, and the height information of the block (that is, version information).
The following correspondence is stored in the database for each node:

hash->height (version)
height (version)-
>hashkey:height (version)-
>valuelastest:key->value

4.5.3 data validation

The corresponding height (version) can be found according to the statehash, and when the corresponding height can be found according to the height,
The v alue value corresponding to the specific key value.

4.5.4 maintenance of the latest version of data

Specifically, when the key 、value value of the latest block is stored, it is kept (new key) or updated (key that already has a historical version) key and the mapping of the: latest->value is stored in the local key-value database. If you need to get the latest batch data, you can query the latest data according to the latest prefix. Because the usual key-value database can support prefix matching query well, the query efficiency will be higher than that of Merkel tree storage structure.

4.6 Algorithm and Security Key Mechanism

The security key mechanism is divided into the following stages: registration or login, encryption, segmentation and recovery.

4.6.1 registration or login phase

The algorithm is mainly used for user registration or login verification. The user submits a registration application to the server, including user identity (ID) and registration information (C); after the server receives the registration request, if the user identity has been registered, it stops, if not registered, The registration information (ID,C) is stored and a signature key (Key) is generated for the user (s). As follows (assuming that the system has been initialized): registered users need to generate the required information for verification according to user secret information and server disclosure information (C*,T*), and the server receives the login request. According to the verification information, determine whether it is consistent with the registration information stored in the server.
User: the user uses the encryption algorithm in equation determination, uses the server public key to PKs, the user public key PKi, the user password password and follows the server: the server receives the user registration request, stores the user registration information and generates the signature key Key. for the user
User: login user use, use server public key PKs, user public and private key (PKi,SKi), user password password and random number R2
Generate login validation ^ information .... o
C*=ET -E (PK [, PK $, R2,password) T* C*=ET -EET -T (SKjpassword*)
Server: the server verifies the legitimacy of the user's identity based on authentication information and locally stored information
ET -test《,C*,T*) f true or false

4.6.2 encryption phase

And the algorithm is mainly used to protect the signature key key. of legitimate usersTo store the user's signature key safely key, the server uses the public key PKs to encrypt (the public key encryption algorithm E) and generates the ciphertext soil (such as 5, where the r represents the random number) of the signature key.

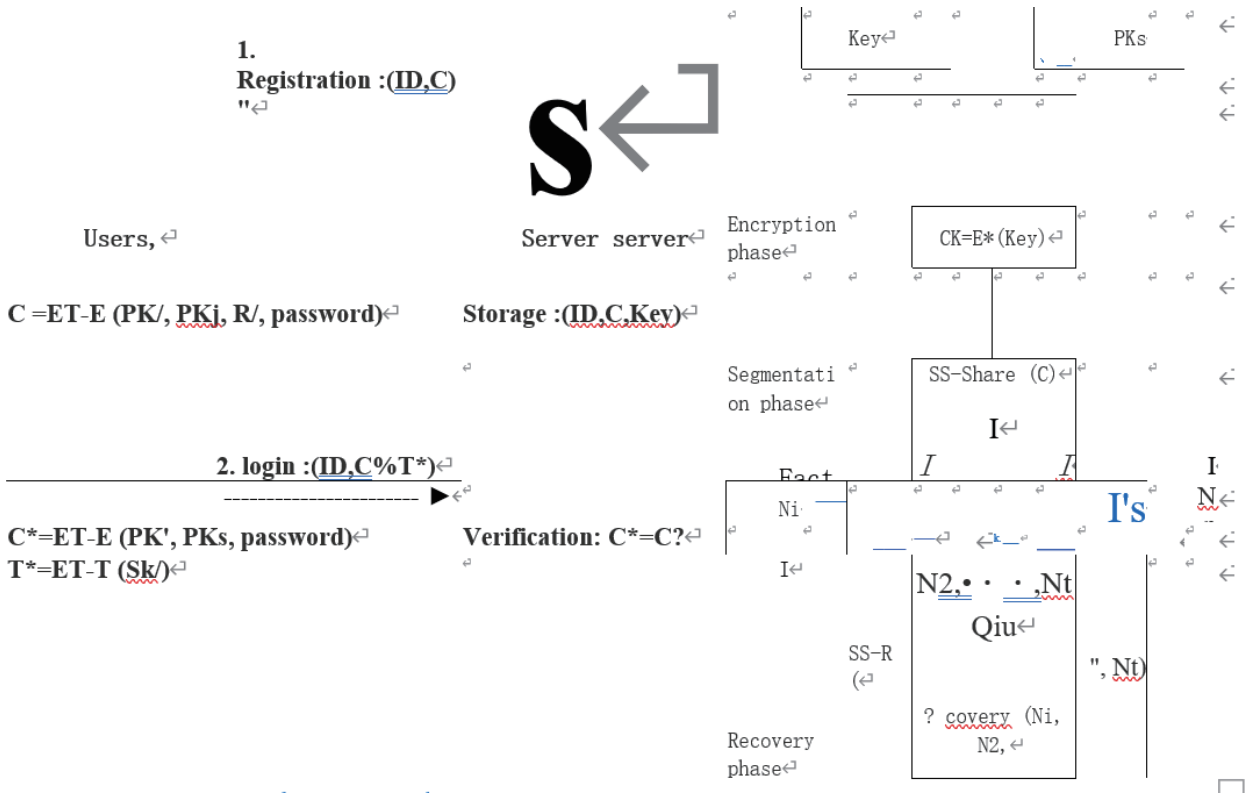
4.6.3 segmentation phase

The algorithm mainly uses the secret sharing scheme to segment the ciphertext of the signature key. A secret is divided into n secret
Article.E*.....The n "will be a forest), where the n represents the number of ciphertext to be divided, k represents the minimum number of recoverable secrets.

4.6.4 recovery phase

The main users of the algorithm recover the corresponding ciphertext KC. key the signature key of the legitimate usersAccording to the method, not less than k secret shares were collected

(»■ · ...' · >, of which/with, the secret KC, required for restoration are:
K ('j SS-" cwriE " V.
0
The programme flow chart is as follows:
Login or winding stage



4.7 Private end-to-end communications

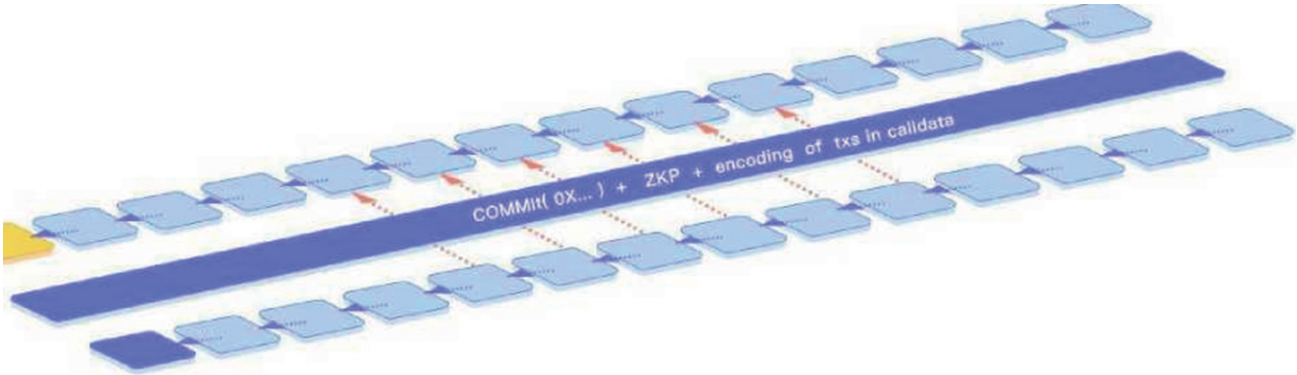
The end-to-end (EndtoEnd) private communication module combines traditional cryptography and blockchain wallet signature technology, using DH key exchange,
AES encryption, SECP256k1、MAC (auth) and so on guarantee the complete privacy of the message, no third party and circle server can obtain the message of the communicator, all the communication information of the user, including text, picture, voice, video and so on, is transmitted by encrypted link, even in the unsafe communication network can protect the user's message security and privacy.
Customer identity information in the circle is established by locally generated encryption key pairs, similar to Diffie-Hellman key exchange protocols, protected and hidden by passwords; communication messages have forward confidentiality. Each session sharing key is regenerated, and the previous communication message and key are leaked to ensure the correctness and security of subsequent messages.

4.8 Unified System of Accounts

Circle ID unified account system, using original protocol to manage personal data, local storage, can log on to multiple decentralized applications
(Application of all APP/DAPP 、OTC in the market, etc.), no repeated input of personal data, safe and fast.

4.9 Cross-chain interaction technology

The circle adopts cross-chain side chain technology to realize the interactive operation of digital asset transfer.
Circle will comprehensively use cross-chain atomic trading, multiple signatures, Roll-Up and other cross-chain and side chain technology to achieve the safe flow of digital assets between the main chain and the side chain. Through the centralized or decentralized matchmaking engine, the rapid exchange and single transaction between different digital assets can be realized, and the digital assets can be fully controlled in the hands of users and the security of digital assets can be ensured. This is essentially different from the centralized exchange.



Cross-chain digital asset transfer

4.10 Super consensus

4.10.1 Consensus layer

CIRCLE algorithm is byzantine fault-tolerant consensus algorithm based on bookkeeper voting mechanism. it has the characteristics of high performance and high consistency. it is extremely suitable for the weak center upper layer application with frequent generation of such data in commercial applications and high real-time accounting requirements. Because of the setting of accounting rules, the traditional block chain needs to reach a certain number of block confirmation in order to complete the confirmation of the chain in a certain probability, that is, not 100% guarantee that the future must be this chain when adding blocks to the block. The chain always has a small possibility of overturning. Basically need to 6 blocks to 99.999999% of the confirmation transaction. In this mode, the ultimate nature of transactions is weak, not suitable for the upper application of the social industry.
CIRCLE consensus algorithm is to select the bookkeeper according to the proportion of equity, and then the consensus is reached by Byzantine fault-tolerant algorithm. Because CIRCLE play a weak central role in the system and have a certain role of endorsement and trust, it will not occur that more than one third of the accounting nodes collude to do evil, even if this happens. Cryptographic evidence can also be used to ex post evidence. The advantages of this consensus algorithm are:

1）Professional bookkeepers;

2）Any type of error can be tolerated;

3）The bookkeeping is done by many people, each block has the finality, will not fork;

4）The reliability of the algorithm has strict mathematical proof.

"At the heart of the RTXP" agreement is to maximize the system's finality and not to split up, allowing every transaction per customer
Record, ensure the integrity and traceability of each customer's transaction record, very suitable for social industry.

4.10.2 Incentive layer

The accounting node gets the corresponding reward for each generated block. A regular account node can collect the reward points in its own account and apply for conversion through the CIRCLE.
The use of CCC in CIRCLE to participate in the ecological mine pool, can be awarded, convertible CIRCLE other types of ecological services or USDT.To encourage the evaluation of services in the CIRCLE system, and to use the ProofofComments, that is, effective evaluation certification mechanism to reward customers for objective evaluation, so as to promote the healthy development of the ecology.

4.10.3 Contract Layer

The intelligent contract technology based on block chain technology includes transaction processing and preservation mechanism. The intelligent contract system will set the trigger condition according to the description information of the event. When the trigger condition is satisfied, the intelligent contract will automatically execute the specified content of the contract. Intelligent contracts are irreversible, once completed, will not be modified or deleted, with strong security.

CIRCLE will build the module design of intelligent contract on this basis, according to the needs of different social, design the general module in advance. When customers need to engage in global social behavior, they only need to set minimal parameters and requirements to start participating, that is, to quickly develop smart contracts and take effect immediately to eliminate any default risk for social participants. Ensure that participants' funds are deducted, transferred, arrived and recorded safely and promptly.

4.7.1 application

To support CIRCLE developers, the development team will provide a wealth of developer tools, including independent intelligent contract development IDE, block browsers, plug-in support for various popular IDE, debuggers, simulators, and formal verification tools for intelligent contracts. Various advanced language background SDK, mobile end SDK and so on. In order to encourage more betting companies to understand the block chain, accept the block chain, join the block chain, join CIRCLE, so as to make the social industry more standardized, build a global incentive digital application ecosystem.

CIRCLE Application Scenario

5.1 Anonymous social networking

CIRCLE anonymous social ecology will be efficient, free, relaxed social environment, more attractive to consumer experience, eager for free users. The user's speech in the platform is not affected by other factors. The block chain is based on the point-to-point communication mode. The decentralized network structure has the characteristics of non-tampering, which can ensure the establishment of this trust, and can re-establish the credit system between people when applied to the social platform. Eliminate trust and reduce communication costs.
CIRCLE anonymous social interaction will record and evaluate all kinds of positive and external social behaviors of users on social platform by establishing a certain social contribution evaluation mechanism, and feedback them to users as transforming benefits to realize internalization. Avoid the existing phenomenon that this externality is plundered by the platform. At the same time, each operation of the user can be branded with time, and each operation is recorded on the distributed account book of each user, and the information can not be tampered with. For the dissemination of false information, we can trace it to the source of information according to the transmission record of information, so as to find out the disseminator of false information and solve the problem of network false information dissemination.
In modern society, the importance of personal privacy has become a huge demand. Through technological innovation, CIRCLE social use encryption algorithm to send friends and chat information between users to ensure point-to-point communication between users, information security and not tampering, and CIRCLE social development of the function of burning after reading. Ensure the privacy and security of instant communication.

5.2- Station application development

CIRCLE can realize the one-stop service of project development according to a variety of application scenarios, such as block chain exchange, equity, creditor's rights, futures, foreign exchange, commodity, product traceability, project management traceability and so on. It can continuously integrate and integrate the service required for project development, and can also provide solutions to problems in project development. By constantly developing and satisfying the users' experience of digital asset trading in the new era, we should develop the industries of finance, information, shopping, medical treatment, big health, education, tourism, payment, investment and so on, and establish the ecological circle of CIRCLE whole industry chain application.

Trade associations (review and publicize the right of enterprises to issue digital assets)

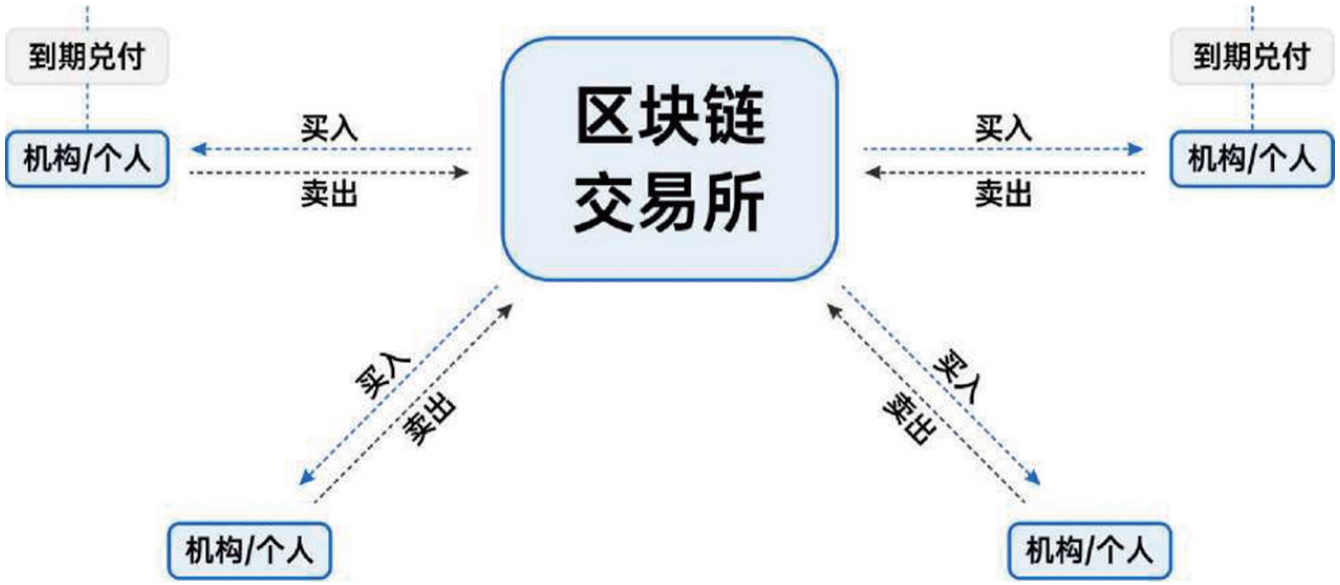
Record filing | Record filing | Record filing | Record filing | Record filing | Record filing | Record filing

enterprises) | [Enterprises] | (Enterprise) (Enterprise) | enterprises) | (Enterprise) (Enterprise) B

Bonds | Equity | Futures | Foreign exchange | Commodities | Trust funds | Financial management

Digital asset information packaging,

Corporate Signature



5.3 Industry-wide applied ecosphere

CIRCLE will plan to launch various functions and applications in the future, including: asset digitization, asset securitization, digital asset trading platform, digital banking and technology finance special area, to create a perfect social life application ecosystem for global users. To meet the user's basic product purchase and payment needs, landing business consumption, online shopping mall, the consumption of major game platforms, all kinds of block chain trading media and other application needs, and finally form a rich CIRCLE life application ecological circle,

relying on the ecological circle to create the whole industry application scene.
1:CIRCLE on the application scenario provided by the block chain, it can be used in circulation. Can pay CCC in the platform for consumption. Using block chain distributed accounting, all transaction information can be directly queried, data open and transparent.
2:CIRCLE work with global business scenarios to create a global business alliance, CIRCLE smart wallets can achieve global point-to-point payment.
3:CIRCLE build ecological circle on the basis of the original, apply to global exchanges, social, games, finance, technology, intelligent manufacturing ,5 G、trade, goods, life scene circulation.

Issuance of CIRCLE

6.1 CIRCLE Issuance Notes

From the value attribute of payment, digital assets have three dimensions: price, income and right. These three attributes are relatively independent and interdependent. A digital asset may have one or more attributes of value, and several attributes may be related to income and price. The digital asset exchange model between different attributes may be uncertain or change with the environment and can not form a convertibility relationship. The multidimensional value scale is actually a manifestation and dissemination of the issuer, not a simple economic activity. CIRCLE each block chain service needs senior block chain experts to build a complete logic and framework, the first conditions are strict.

6.2 CIRC LE Circulation

CIRCLE is the basis of platform transparency, adopting the most scientific and reasonable distribution method, encouraging users to produce mining behavior in the platform, and obtaining more value income through the calculation mechanism.

Distribution Name: CIRCLE

Token Name: CCC

Issue time: October 2020

Total issuance :1 billion (in: pieces)

Initial Issue :10 million

Public offering price: USDT 0.15

Machine operation plan: system public test and public offering in September 2020, open running Apple APP and Android APP client in October 2020, open running computer client in 2021.
Goal: to create the world's most valuable social ecosystem, so that each user to achieve CIRCLE global value sharing.CIRCLE the world's first mining pool distribution algorithm based on STAKING, each user can create a circle to become a circle owner, and invite friends to join the circle, through pledge to achieve mining pool.

6.3 CIRCLE Distribution Programme

10 million CCC： first

1）Of these ,4 million were pledged into the creation pool :1 million were pledged by the CIRCLE-LAB permanent lock, and daily pool output was used for platform maintenance, technological innovation and research and development ;1 million were pledged by the CIRCLE- Community Self-Government Commission for permanent lock, and daily pool output was used for community ecological construction, such as online circle awards, offline studio support, training activities ;1 million were pledged by the CIRCLE creation partner for permanent lock, and daily pool output was used to reward the creation partner; A million pieces were pledged by the CIRCLE- Foundation for a limited period of time and released 10 per cent per month after one year for the Foundation's operations, ecological construction and market value management.
2）Among them ,1 million community airdrop awards to early users involved in CIRCLE.
3）Of these ,5 million are used for public offering during the start-up period, all funds raised are fully funded, to prevent large investors from speculating and to protect the interests of investors.

6.4 Method of calculation

6.4.1 Initial Distribution Calculation

To better explore and adapt to the market, CIRCLE initial issue of 10 million tokens CCC a total of 10 million, with platform users pledge the amount of daily n%. issued
First six months :0.3 per cent of daily issuance (pledged amount is total S,S*0.3%= issuance)
(b) Second six months :0.25 per cent of daily issuance (pledged amount is total S,S*0.25%= issuance)
3rd 12 months :0.2% daily issuance (pledged amount is total S,S*0.2%= issuance)
Fourth 12 months :0.15 per cent per day (pledged as total S,S*0.15%= issued)
After the four stages, issued daily at 0.1%, until 1 billion total production.

6.4.2 reward algorithm (total issuance in Y)

Y*49%= miners award
Y*1%= Master Award
Y*45%= Network Promotion Award
Y*5%= node rewards

6.4.3 Circle Pool Calculation Award

Create circles 1: users, become circle owners, and invite friends to join the circle. Circle owner into the circle pool can pledge CCC upgrade to mine owner, the amount of pledge is greater than or equal to 100, less than or equal to 500(later adjustable). Circle mine pool must meet 1 mine master + at least 9 miners, the mine pool before starting mining, otherwise all participants do not enjoy mining power dividends;
2: ordinary users can enter the circle pool pledge CCC upgrade to miners, the pledge amount is less than or equal to 500, and can not be higher than the pledge amount of the mine owner. If the mine owner pledge amount is 200, the miner's pledge amount can not be higher than 200; when the pledge quantity is less than 100, does not calculate the calculation force, does not participate in the dividend;
3: in the process of pledge mining, the user can increase the amount of pledge, for example, a user's pledge amount is 100, and the number of pledges of the mine owner in this circle is 200, the user can increase the pledge in the process. The maximum amount of pledge can not exceed the mine owner. Users can reduce the pledge, for example, the user pledged 200, can reduce 20, can also reduce 120, can also reduce 200;
4: the user to reduce or withdraw from the pledge of the currency, determined by the owner, immediately back to the wallet. If the ring master is not confirmed, shellfish 024 hours automatically back to the wallet;
5: users can participate in multiple circles, in different circles of mining pool to participate in mining, the more involved in the calculation force, the more dividends;
6:49% of the daily CCC issued to all miners, Daily distribution of 1% of the CCC reward to the mine owner. Suppose: in the first six months of the day the total amount of pledge is 10 million, The amount issued =10 million ,0.3=30,000, Among them ,30,000,49=14700 reward pledge users.
When a user pledged 200 in a A group and 300 in a B group, the user received a dividend of 14700/100+14700/100 million /300=0.735 on the same day;
If the owner pledged 500 coins, the owner's dividend on the same day was :14700/100 million /500=0.735; if a mine pool pledged a total of
100000 coins, mine owners received additional mining incentives :30,000,1,000,10,000=3
7: if the ring owner moves the user out of the circle, if the user has a pledge in the mine pool, the user's pledge immediately returns to the wallet; if the user voluntarily exits the circle, if the user has a pledge in the mine pool, The pledged currency automatically returns to the wallet 24 hours later;
8: only from 00:00 on the same day to 00:00 24 hours on the pledge of the CCC is calculated as a complete mining, calculation force dividends. If a user pledges at noon on the same day CCC, the next day 00:00 to 00:00 24 hours that night are in the pledge state, then the third day at 1 am to pay a dividend; if a user one day
At some point in time,Immediately join the mine pool, then the day does not calculate the force.

$$Ai == \frac{Si}{S1+S2+S3+\ldots\ S1+S2+S3+Sn\ \ldots 2} \times W \times 49\%$$

$$Bi == \frac{Sc}{S1+S2+S3+\ldots\ S1+S2+S3+Sn\ \ldots 2} \times W \times 1\%$$

Ai: miners on the same day pledge power reward; Bi: mine owners on the same day power reward
Si: amount pledged; S1,S2,S3 amount pledged Sn: the amount pledged by other users;
The amount pledged Sc: a circle of mines; CCC circulation on W: day

6.4.4 network promotion

1: cubic root in maximum pledge;
2: the pledge is less than 10000 coins, the calculation force multiplied by 10;
3: pledge of more than 10000 coins ,10000*10+ more than 10000 parts;
4: according to the whole network promotion calculation power, weighted distribution of 45% of the daily distribution
5: computing network extension power, users must have at least 100 pledges in the mine pool to enjoy network extension power.

$$A \sim\sim \frac{Ai}{Ai+Bi+Ci+\ldots\ A \sim\sim Ai+Bi+Ci+Ni\ \ldots 2} \times W \times 45\%$$

Ai =' Smax Ai =S1Ai =S2Ai =S3Ai = Ai |
=Sn.....
.....
..... Ai
=.....
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A: user's computing power reward; Ai: user's computing power; W: the total amount issued on the same day; S: the amount of pledge in each district
Such as: A recommended five groups of market pledge amount of B:100 million; C:10,000; D:5000; E:3000; F:100,000; Among them F recommended 10 groups of markets for 10,000 pledge.
A power :1 million cubic root +10,000+5,000,10,000+(10,000,+),370100
F power :10,000 cubic roots +10,000*9=900022

6.4.5 node rewards

(1) Remove the maximum area of the pledge, There are 1 to 5 residential pledge of 100000 coins, A CCC 1-5 star node. Assuming a user recommends a total of six groups of A\B\C\D\E\F markets, Total pledged $300,000 CCC, A market B market pledge CCC,200,000 C market pledge CCC,200,000 D market pledge CCC,200,000 E market pledge CCC,200,000 F market pledge CCC ,200,000 Apart from A markets, Five groups of market pledges exceeded 100,000, The user reaches a 5-star node; Total pledged $300,000 CCC, A market B market pledged CCC,20,000 C market pledge CCC,50,000 D market pledge CCC,200,000 E market pledge CCC,200,000 F market pledge CCC ,200,000 Apart from A markets, There are three groups of market pledge over 100,000, The user reaches a 3-star node;
(2) Nodes enjoy the number of additional issues on the same day 5% dividends, each node can enjoy 1;
(3) High-level nodes participate in the enjoyment of low-level node dividends. For example ,5 star nodes can enjoy the weighted dividends of 1 star ,2 star ,3 star ,4 star and 5 star nodes at the same time ;2 star nodes can enjoy the weighted dividends of 1 star and 2 star at the same time.
(4)1 per cent of each level is distributed equally according to the number of meeting nodes. Such as reaching 1 star node 10 people ,2 star node 5 people ,3 star node 3 people ,4 stars
Red pool 5% total 5000 CCC, each level node dividends 5000/5=1000, shellfish U:

One star node pays dividends:1000/(10+5+3+2+1)=47.62;
Two star nodes can pay dividends:1000/(10+5+3+2+1)+1000/(5+3+2+1)=138.53;
Three star nodes can be paid dividends:1000/(10+5+3+2+1)+1000/(5+3+2+1)+1000/(3+2+1)=305.19;
Four star nodes can pay
dividends:1000/(10+5+3+2+1)+1000/(5+3+2+1)+1000/(3+2+1)+1000/(2+1)=638.52;
Star nodes can be divided into Star nodes can be divided into
:1000/(10+5+3+2+1)+1000/(5+3+2+1)+1000/(3)2+1)1000/(2+1)1000/(2)1000/1=1638.52

$$Yn = X1+X2+X3+ X1+X2+X3+X(6-n)X\ W\ X\ 5\%/5$$

$$Zn=Y1+Y2+Y3+ Zn=Y1+Y2+Y3+Yn$$

Y: the rewards received at each level of node; X: the number of persons who have reached that node;
Rewards received by Z: nodes; total issuance W: day; n=1/2/3/4/5

6.5 Development routes

CIRCLE development route

Phase	Time	Note
Preparatory phase	2018.03	Establishment of CIRCLE-LAB, initiation of public chain development
Preparatory phase	2019.09	CIRCLE Public Chain Architecture Completed
Initial phase	2020.03	Wallet System Development Completed
Initial Hope Section	2020.06	Completion of exchange development
Initial Hope Section	2020.07	Complete the Encrypted Social Architecture
Initial phase	2020.08	CIRCLE Mine Pool Development Completed
Development expectations	2020.10	CIRCLE online
Development expectations	2020.10	Opening STAKING mine pool
Development phase	2020.11	Commercial Ecological Planning Release
Development expectations	2021.01	Business Ecology Line
Stabilization phase	2021.09	Open API

Legal Affairs and Risk Tips

7.1 Legal affairs

· CIRCLE project will set up a foundation in Singapore. As an independent legal body, the Foundation will be fully responsible for organizing teams to develop, promote and operate CIRCLE projects and assume all relevant responsibilities.

· The CIRCLE Foundation will exchange and CCC. digital assets to specific groups in an appropriate manner in strict accordance with local laws and regulationsDue to the restriction of national citizens or groups with legal restrictions, CIRCLE will not carry out public raising or public raising in some countries.CIRCLE as a virtual commodity and use with real use is not a security or a speculative investment tool.

· The income of the CIRCLE Foundation in the investment of the consumer industry will be mainly used by the CIRCLES fund for technology development, marketing, community building, financial audit, business cooperation and so on.

· CIRCLE is still likely to be questioned and regulated by competent authorities in different countries around the world. For meeting and complying with local laws and regulations CIRCLE normal services may not be available in some areas.

7.2 Risk Tips

· Before and during sale, the project will not organize any public publicity and advertising activities in any media, and the platform team will not organize any Facebook、SNS、Twitter and other social media, email lists to promote, please be careful before participating.
· This document is only used to convey information and does not constitute an opinion or investment opinion on the future sale of native digital assets, nor is it a contract or commitment of any form.
· As soon as the investor participates, he expresses his understanding and acceptance of the risk of the project, and is willing to bear all the corresponding results or consequences for this purpose, CIRCLE clearly indicates that he does not bear the direct or indirect losses caused by any participation in the project.
· The native assets involved in this project are an encrypted digital code used on the platform and do not represent the equity, creditor's rights, income rights or control rights of the platform project.
· At the same time CIRCLE the Foundation expressly denies and rejects the following

Responsibilities:

(1)Anyone who, in exchange for CCC, violates any country's anti-money-laundering, anti-terrorist financing or other regulatory requirements;
(2)The person who purchased the asset CCC violated any statement, warranty, obligation, commitment or other requirement under this White Paper, and the resulting unserviceable or unsolvable CCC;. The
(3)For any reason, swap plans for asset CCC were abandoned;
(4) CCC development failure or abandonment and the resulting CIRCLE; of non-delivery or non-use of assets
(5) CCC delays or delays in the development of the public chain and the resulting inability to reach a prior disclosure schedule;
(6) CCC source code errors, defects, defects or other problems;
(7) CCC failure, collapse, paralysis, rollback or hard bifurcation;
(8)CCC failure to perform any particular function or suitability for any particular purpose;
(9)(a) The use of funds raised under the asset CCC plan;
(10)Failure to disclose timely and complete information on CCC public chain development;
(11)Any participant divulges, loses or destroys CCC wallet private key;
(12)Default, violation, infringement, collapse, paralysis, termination or suspension of service, fraud, misoperation, misconduct, error, negligence, bankruptcy, liquidation, dissolution or closure of a third-party distribution platform;
(13)There is a difference, conflict or contradiction between the agreed content between anyone and the third party distribution platform and the content of this white paper;
(14)Any person's dealings or speculation in CCC;
(15)CCC listing, suspension or delisting on any trading platform; CCC is classified or deemed to be

a currency, securities, commercial paper, negotiable instrument, investment or other thing by any government, quasi-government agency, competent authority or public institution to the extent that it is prohibited, regulated or legally restricted;
(16)any risk factors disclosed in this white paper, as well as damages, losses, claims, liabilities, penalties, costs or other negative effects associated with such risk factors, resulting in or accompanying them.

CIRCLE