# Russell Coin(RC)

# White Paper

Version: 1.20

# Catalog

## Technical vocabulary index:

CoinJoin: A bitcoin transaction compression method designed to improve privacy protection by discarding unwanted information.

Bithub: The Open Source Application Community

UTXO: is the basic unit of Bitcoin transactions UTXO (Unspent Transaction Outputs) is an unpaid transaction input
It is a core concept of Bitcoin transaction generation and verification.

AI: Artificial Intelligence


Blockchain technology has brought a great change to the era of digital economy.

This dramatic change has occurred twice in the history of the Internet in the past 50 years. The first major change was the global Internet, since 1969, the Advanced Research Projects Agency Network (ARPANET), a computer network established by the US Department of Defense Advanced Research Projects Agency, also known as ARPAnet. The Internet is now the basis of APRA. Since its inception, the mainstream countries of the world have gradually accessed the Internet and opened up the journey of the global Internet.
The second great change is a global application. Since the publication of the World Wide Web Paper in 1989, the Internet application has fully bloomed, and a global outbreak of application has been achieved.

The third great change is brewing. The birth of Bitcoin in 2009 was a landmark event. With the support of blockchain technology, Bitcoin broke the "dark" box of traditional banknotes. The circulation of banknotes as entities is invisible. No one knows where a bank note is coming from, but the blockchain can make every movement of digital currency clear and clear. It also protects the privacy of participants. People have found that the significance of the blockchain lies in building a more reliable Internet system and fundamentally solving the problems of fraud and rent-seeking that exist in value exchange and transfer. More and more people believe that with the popularization of blockchain technology, the digital economy will become more trustworthy and the economic society will become more just and transparent. Further research found that blockchain technology has a powerful ability to “reduce costs”, which can simplify the process and reduce some unnecessary transaction costs and institutional costs. This ability is applied in many social fields and is more practical for improving the current economic environment.

The blockchain has attracted worldwide attention and quickly became a global “arms competition” for competition. Many countries have realized the huge application prospects of blockchain technology and started to design the blockchain development path from the national level.

Blockchain and related industries have accelerated their development, and the world is now running into the “blockchain economic era”. Globally, there will be more mature applications. At this moment, the global technology giants and start-up companies are facing major opportunities at the same time.

Today, Google, Tencent, Ali, Baidu, IBM, Amazon, Microsoft, Apple, etc.Giants launch or are launching their own blockchain plan!

Russell Coin was born here, RC team has 18 years of high-tech R & D Calendar, in the field of Internet, has more than 600 research and development achievements and patents in the field of artificial intelligence AI, VR, big data, blockchain.

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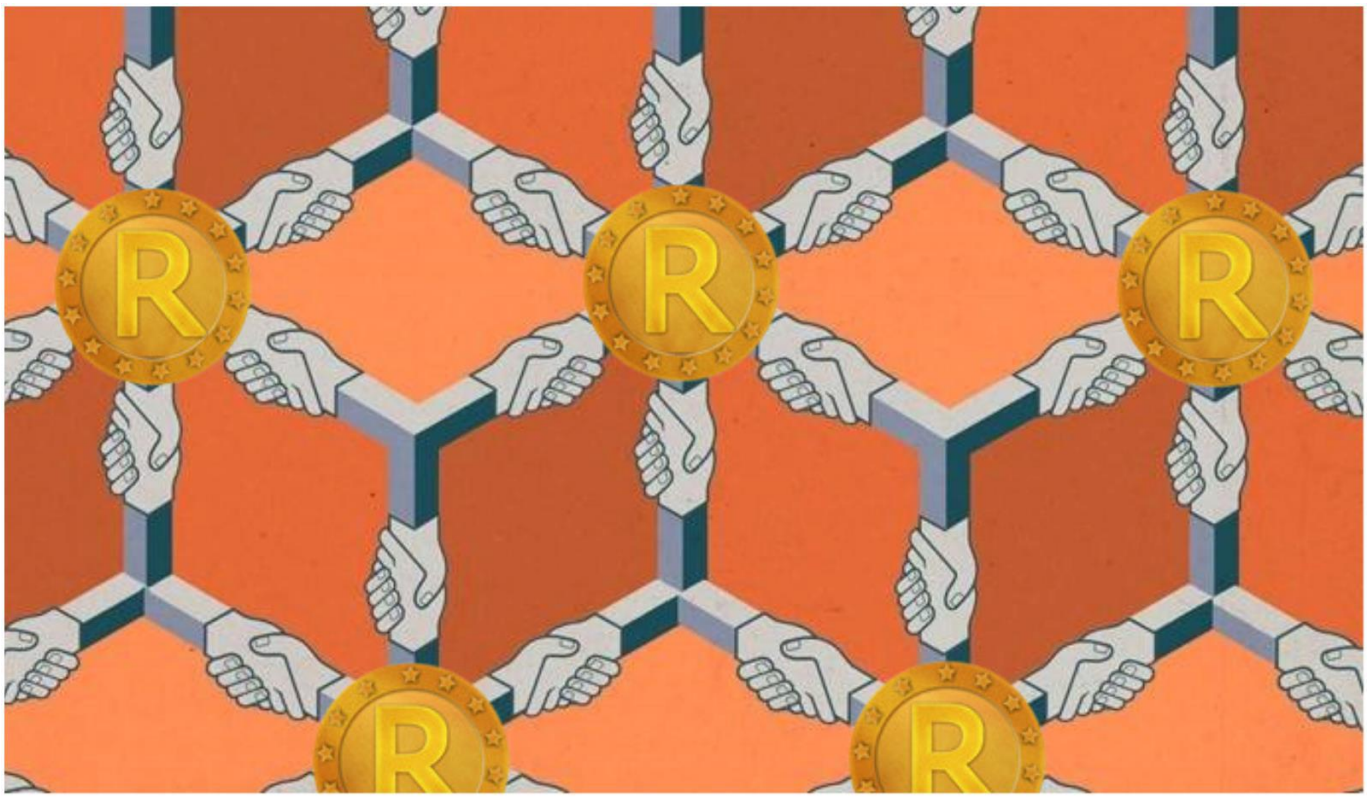
# Technical features

The birth of the blockchain marks the beginning of the construction of a truly trustworthy Internet. By combing the rise and development of the blockchain, we can see that the blockchain attracts people's attention to the fact that they can establish reliable trust from point to point in the network, making the value transfer process eliminate mediation interference, and both disclose information and protect privacy. Both the joint decision-making and the protection of individual rights and interests, this mechanism improves the efficiency of value interaction and reduces costs.
From the perspective of economics, this new paradigm of value interaction created by blockchains is based on “weakly centralized,” but this does not mean that the “centers” in the traditional society have completely disappeared and that there will be a large number of blockchains in the future. The "multi-center" system is dominated by alliance chain, private chain, or mixed chain. Blockchain will further improve the "central" operating efficiency and reduce a considerable part of its costs.

From a technical point of view, we believe that blockchain is a technology system that is maintained by multiple parties, stores data in a blockchain structure, uses cryptography to ensure transmission and access security, and can implement consistent data storage, irreversibility, and non-repudiation. . This kind of technology has brought infinite room for imagination to the world. The global attention to blockchain continues to heat up. The world's major economies have started to study blockchain technology and development trends from the perspective of national strategy.




## 1.1. Blockchain - starting from getting rid of third-party constraints

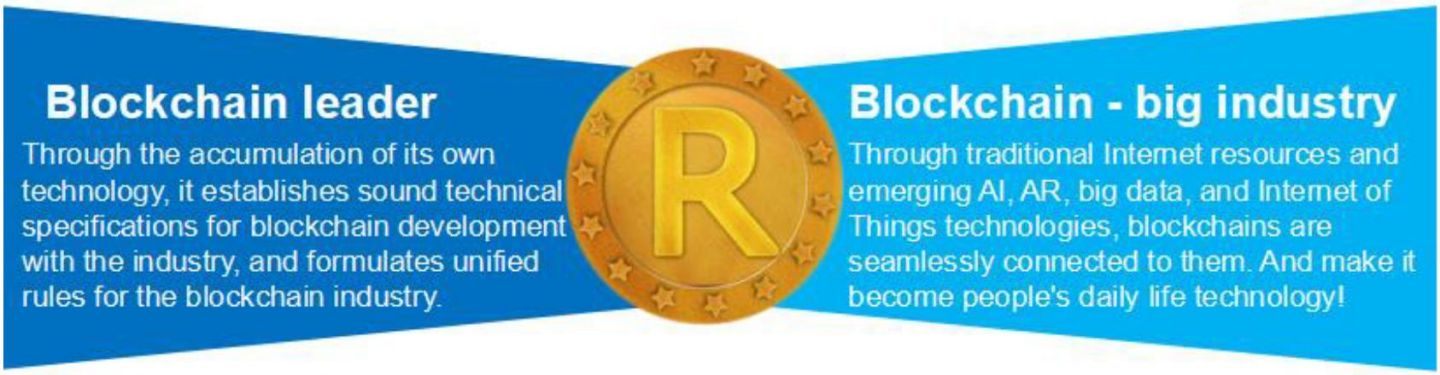
Earlier, people viewed the blockchain as a ledger on a peer-to-peer network. Since the beginning of each transaction, all transfers and transactions will be recorded on the “block”, and the block will be connected end to end. The chained structure is published to all nodes on the network, and consensus is formed between the nodes. Node members can consult related transaction records based on their privileges, but no single node can easily control and change data across the entire network.

This design was derived from the 2008 “Site Bitcoin: A Point-to-Point Electronic Cash System” published by Nakamoto. The article proposes that it is hoped that a new type of electronic payment system will be created. This system “is based on cryptographic principles rather than on credit, so that any agreed parties can make payments directly and thus do not require the participation of third-party intermediaries”.
The paper gave birth to Bitcoin, which marked a major step forward in the human society's monetary system. Bitcoin adopted the design idea of open distributed ledgers, and it really got rid of the constraints of third-party institutions. Bitcoin then entered a period of rapid development.
On January 3, 2009, the first block of the blockchain was born. This block is also called "Creation block".
On January 12, 2009, Satoshi sent 10 bitcoins to the cryptologist Harfenny.
In July 2010, the establishment of Bitcoin Exchange Mt.Gox, Bitcoin's value was recognized worldwide.
In the following years, due to the huge resource consumption caused by Bitcoin's mining mechanism, the anonymity of Bitcoin poses a challenge to traditional financial supervision, which has caused Bitcoin prices to rise and fall.

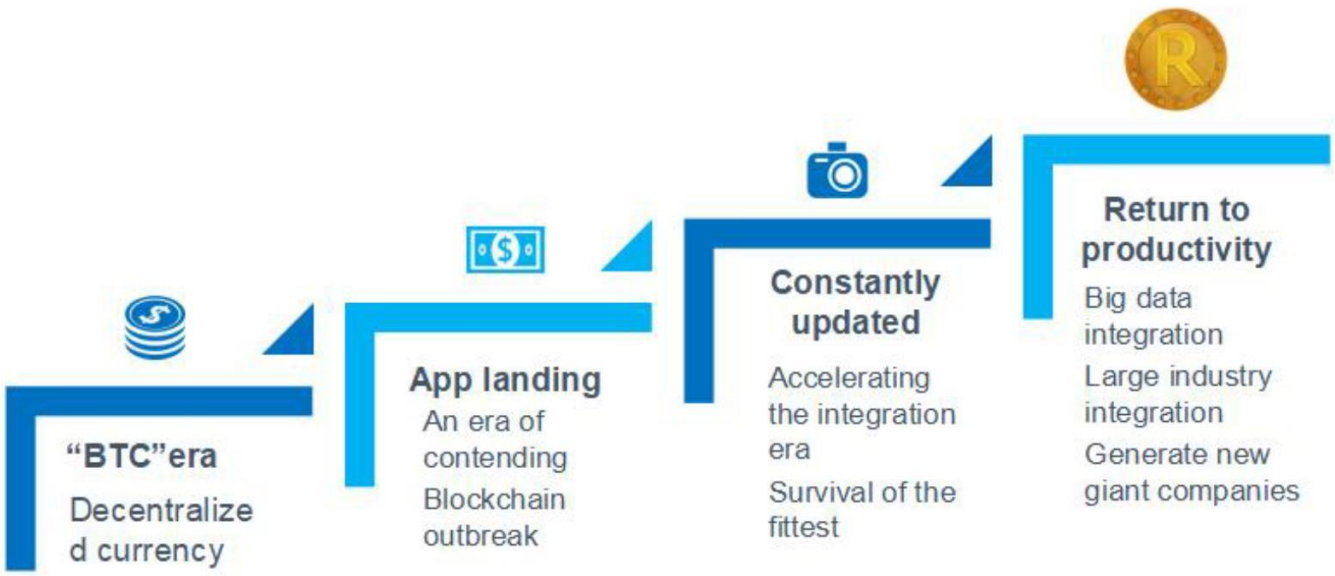
## 1.2 Jump from Bitcoin to Blockchain+

The birth of the blockchain signals that humans have begun to build a truly trusted internet.
There is a new point of view that blockchain technology can build an efficient and reliable value transmission system and promote the Internet into a
To build a socially trusted network infrastructure and realize effective delivery of value, this is called the Value Internet. We have noticed that the blockchain has provided a new type of social trust mechanism, which has laid a new cornerstone for the development of the digital economy. The application of “blockchain +” innovation indicates the new direction of industrial innovation and public service.
Blockchain technology has been deployed and applied throughout the world. Developed countries such as the United States, Britain, Japan, Germany, Canada, and Australia have realized that there is a huge application prospect for blockchain technology in the optimization of public services and social mechanisms. Blockchain development path.

## 1.3 Russell Coin Dream plan

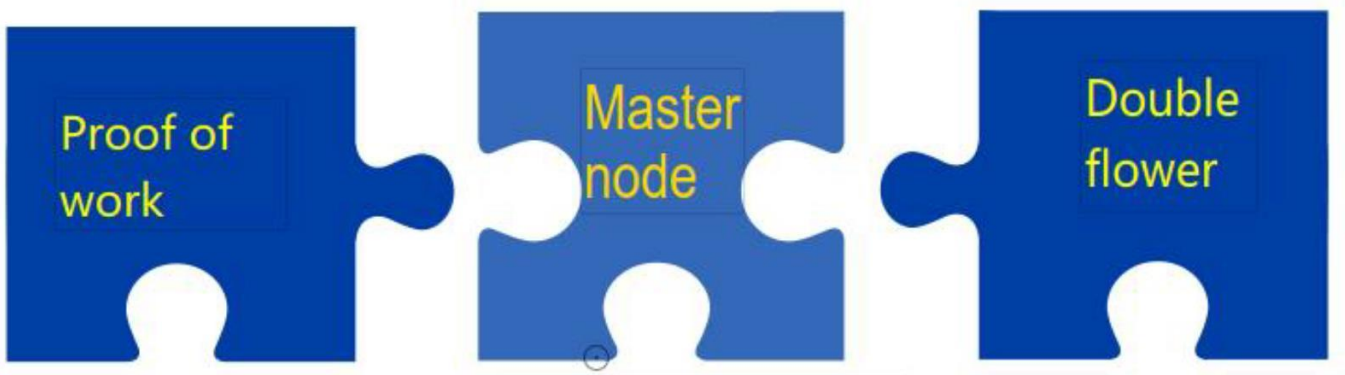



## 1.4 Twenty-year plan outlook



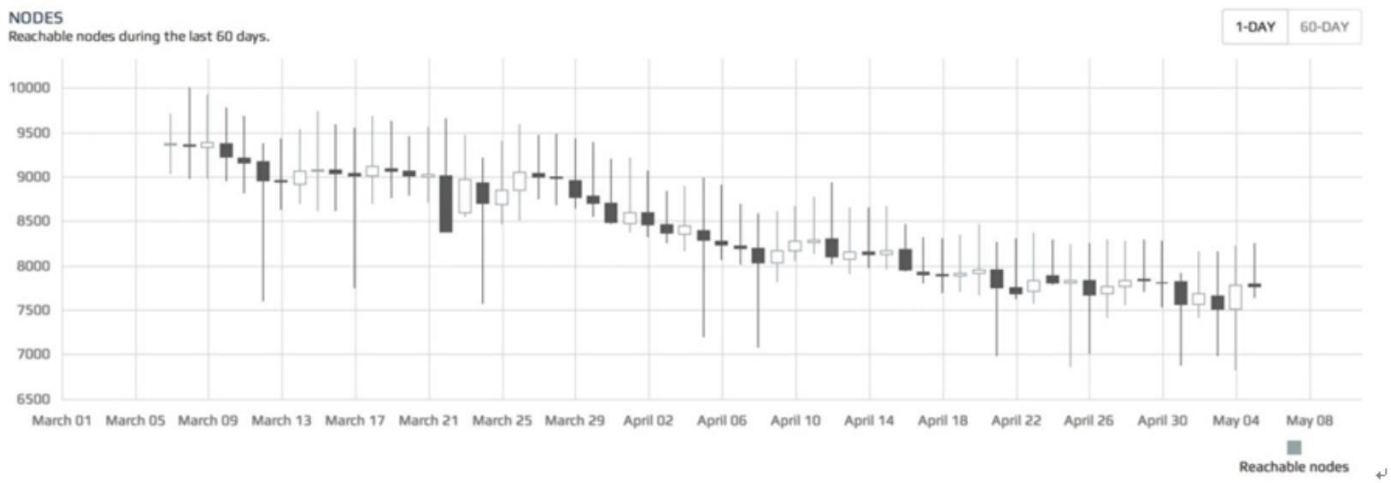

On the basis of independent innovation, Russell Coin RC has created a “Russell Dollar RC Blockchain” solution that provides enterprise-class services. Based on the concept of “open sharing”, Russell Coin RC will build a blockchain infrastructure, open internal capabilities, and share it with global companies to jointly promote the development of a trusted Internet and create a win-win ecosystem for blockchain.

Russell Co., Ltd. has accumulated rich industry and technical experience in the fields of payment, finance, social networking, and media, and has achieved industry-leading breakthroughs in the processing of high-concurrency transactions. In addition, Russell Co., Ltd. has massive data processing and analysis. The ability to build a financial security system has also accumulated rich experience in the exploration of cloud ecology and industry connections.



## 2.1Master Node Network Features and Rewards Program

The entire node is a server running on a p2p network, allowing small nodes to use them to accept dynamic changes from the entire network. These full nodes require significant traffic and other resources that consume large amounts of cost, and as a result, the number of these nodes on the bitcoin network will be observed to be steadily declining over time, requiring an additional 40 seconds of block broadcast time. . To solve this problem, many proposals have been put forward, such as the introduction of Google Research's new reward plan and the Bithub incentive plan.




The above picture shows the full node of the spring of 2018

These nodes are important for the health of the network. They enable clients to synchronize and broadcast information over the entire network. We propose to add a secondary network called the Russell Dollar master node network. These nodes will have high availability and will be rewarded with master node services after providing the network with services that meet certain requirements. .

### 2.1.1 Master Node Rewards Program - Costs and Rewards

The main reason for the sharp decline in the entire node of the Bitcoin network is the

lack of rewards for running nodes. With the passage of time, the number of users accessing the entire network will be more, the demand for bandwidth will be higher, and the capital requirements for the node operators will be more. As a result, the cost of running the full node will increase. Considering the rising costs, node operators must reduce their operating costs or run light clients, but this is completely detrimental to network health.

As with the bitcoin network, the master node is a full node, but the difference is that the master node must provide certain services to the entire network and require a certain amount of deposit to join. The deposit will not be lost and is safe when the master node is running. This allows investors to provide services for the entire network while earning a certain amount of investment income and reducing price volatility.
To run a master node, you need to store 1000RC. When the master node becomes effective, it can serve the clients of the entire network and receive rewards in the form of interest. This allows users to invest in this service, but at the same time get a certain return. The main node's revenue comes from the same mine pool, and about 505% of the block rewards are included in this plan. Considering the fact that the bonus rate of the master node reward program is a fixed percentage and the fact that the master node network node fluctuates, it is expected that the master node award will change based on the total number of master nodes currently in effect. The following calculation formula can be used to calculate the profit for running the master node for a whole day:
(n/t) * r * b * a
n: number of master nodes controlled by the operator
t: total number of master nodes
r: Current block bonus (current average bonus is 5RC)
b: average number of blocks per day, the current RC network is usually 576 blocks per day
a: Average bonus for the primary node (average 50% per block bonus)
The revenue formula for running the master node: ((n/t) * r * b * a * 365) / 1000 (variables in the formula are the same as above) The cost of running the master node, which creates a hard effective node on the network Limits and soft limits. Currently there are 5.3 million RC flows and only 5,300 nodes may be able to operate on the network. The soft limit is due to the cost of configuring the nodes and the amount of stagnation of the platform, because RC is the currency of circulation, not just for investment.

The following figure shows: The benign circulation effect of the master node reward program

## 2.1.2Determine the order

Use a specific determination algorithm to create a pseudo-random ordering of the master node. Using a hashing algorithm for the workload proofing mechanism designed for each block, the mining network can provide security that supports this ordering. Select the main node's code:

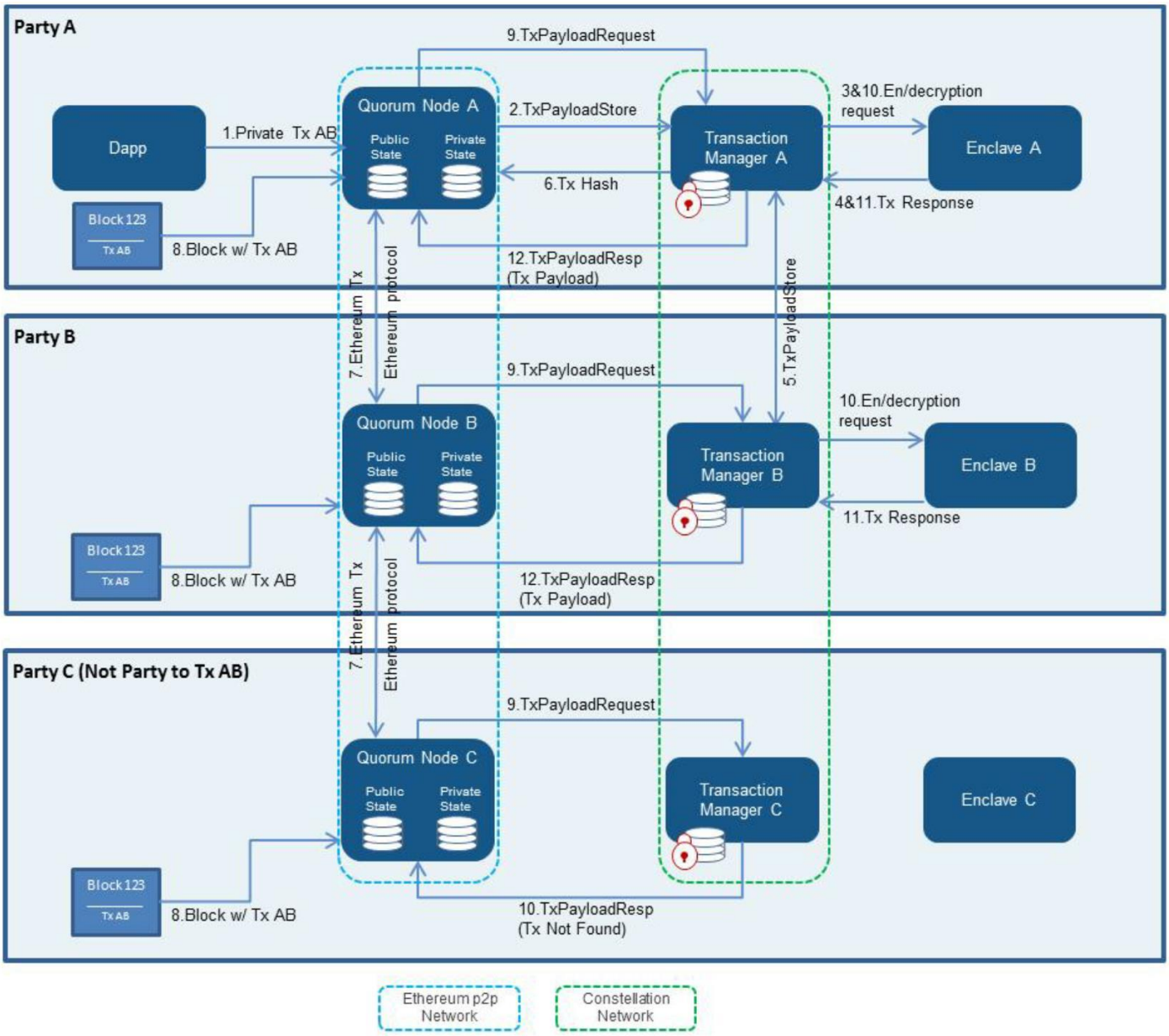
```
For(mastenode in masternodes){
   n = masternode.CalculateScore();

   if(n > best_score){
      best_score = n;
      winning_node = masternode;
   }
```

```
}

CMasterNode::CalculateScore(){
  n1 = GetProofOfWorkHash(nBlockHeight); // get the hash of this block
  n2 = Hash(n1); //hash the POW hash to increase the entropy
  n3 = abs(n2 - masternode_vin);

  return n3;
}
```

The sample code can also be further extended to sort the master node, and the calculations of the "second", "third", and "fourth" master nodes are analogized.

### 2.1.3 Untrusted

The current RC network has about 1000 active master nodes and a 1000 RC guarantee is required to become a valid master node. We have created a system where none of them can control the entire master node network. For example, if someone wants to control 50% of the master node network, they will have to buy 10 million  from the open market. This will greatly increase the currency price, so it is impossible to obtain so many RCs.
Under the premise of having a master node network and guarantee conditions, we use the secondary network in a non-trusted manner to perform highly sensitive tasks. No one can control the evolution of the network. N pseudo-random master nodes are selected from the pool to perform the same tasks. These nodes can serve as referees and the process does not require the participation of the entire network.
For example, an untrusted Quorum discovers InstantX, and InstantX uses Quorum to confirm transactions and lock inputs.
As another example, the non-trusted Quorum can use the master node network as a decentralized predictor for financial markets, which makes it possible to implement decentralized contracts. For example, if Apple's stock price exceeds 1,000 US dollars on December 31, 2019, it will be submitted to Convention A, otherwise it will be submitted to Convention B.




Above is an overview of Quorum's privacy architecture。

## 2.1.4 Role and service proof mechanism

The master node can provide any additional services to the network. As pointed out in the concept, our first successful applications are RC (Anonymous Sending) and InstantX (Instant Payment). Using what we call "service volume proof" mechanisms, these nodes can be required to be online and respond even at the correct block height.

A malicious person can also run the master node but does not provide any substantial service to the network. To reduce the probability that these people use the system to make things beneficial to their own nodes, the remaining networks must be pinged to ensure they remain active. This work is done by selecting 2 quorums per block in the master node network. Quorum A checks Quorum B's services for each block. Quorum A is the closest node to the current block hash, while Quorum B is the node farthest away from the hash of the block.

Master node A(1) checks master node B (2300)
Master node A(2) checks master node B (2299)
Master node A(3) checks master node B (2298)

Checking the network is to verify that the node is in effect. This is done by the master node itself. 1% of the entire network block will be checked. This causes the entire network to be checked approximately 6 times during the day. In order to keep this system untrusted, we use random selection of nodes in the Quorum system, but we also need at least six checks to troubleshoot a malicious point.

In order to defraud the system, the attacker needs to be selected six times in a round. Otherwise, the purpose of deception is discovered by the system so that it will not succeed, as is the case with other nodes.

| Attacker Controlled Masternodes / Total Masternodes | Required Picked Times In A Row | Probability of success $(n/t)^r$ | RC Required |
|---|---|---|---|
| 1/2300 | 6 | 6.75e-21 | 1000RC |
| 10/2300 | 6 | 6.75e-15 | 10,000RC |
| 100/2300 | 6 | 6.75e-09 | 100,000RC |
| 500/2300 | 6 | 0.01055% | 500,000RC |
| 1000/2300 | 6 | 0.6755% | 1,000,000RC |

Above: Probability of an independent master node to deceive the system in case of imbalance of the service proof mechanism

n: The number of master nodes controlled by the attacker

t: Total number of master nodes on the entire network

r: blockchain depth

Based on the Quorum system, the choice of master node is pseudo-random.

## 2.1.5Master node protocol

The master node broadcasts on the entire network using a series of extension protocols, including the announcement message mechanism of the master node and the message ping mechanism of the master node. These two types of mechanisms are used to confirm that all nodes in the network are in effect. In addition to them, the requirements of the proof-of-service mechanism include Russell's RC and InstantX.

Sending 1000RC to a specific address in the wallet, the activation code naturally generates a master node that can broadcast on the entire network, and then a secondary private key is generated. It is used to sign all other information, and also when running stand-alone mode Can be used to fully lock the wallet.

Using a secondary private key on two separate machines makes cold mode possible. The main "hot" client signs the 1000RC's input. This process involves signing the information using the secondary private key. After that, the "cold" client can discover the information containing the secondary private key and activate the master node. This disables the "hot" client (client shuts down), so that the attacker cannot gain access to the 1000RC when accessing the activated master node.

When the master node starts running, it will send "master node broadcast" information to the entire network.

Includes:

Information: (1000RC input, accessible IP address, signature, signature time, 1000RC public key, secondary public key, for

Donated public key, percentage of donations)
After that, every 15 minutes, a ping message will be sent out to prove that the node is in effect.

Information: (1000RC input, signature (use secondary private key, signature time))

Over time, the network will remove the dead node so that the node is no longer used or re-used by the client for payment. Node can also be

To ping the network constantly, but if their ports are not open, they will eventually be marked as invalid and no longer used for payment.

## 2.1.6Broadcast of master node list

New clients entering the RC network must discover the current active master nodes of the entire network so that they can use their services. Once they join the mesh network, their nodes receive an order to request a list of master nodes. The purpose of setting the cache is for the client to record the master node and

its current state, so when the client restarts, they simply load the file without having to re-request the full list of master nodes.

### 2.1.7Use mining to pay and enforce regulations

In order to ensure that each master node receives the appropriate block reward, the network must force each block payment reward to the correct master node. If miners do not want to, their blocks must be rejected by the network, otherwise cheating will occur.

We propose a strategy where a master node represents a Quorum, selects the winning master node and broadcasts their information. After the information is broadcasted N times, it will select the same target recipient, so that the selected block will be rewarded for the master node.

When mining online, the mine pool (the role of the mine pool is to integrate individual miners) uses the RPC API interface to obtain information on the relevant block. In order to pay a reward to the master node, a secondary

recipient must be added to the GetBlockTemplate to extend the interface. After the mine pool broadcasts its own successfully mined block, keeping itself and the master node in sync.

## 2.2 Real Anonymous Privacy Technology

### 2.2.1 Bitcoin - non-real anonymous (weak anonymity) features.

The Bitcoin network is not as anonymous as we might imagine. Strictly speaking, it is a pseudo-anonymous system.
Bitcoin network privacy protection or anonymity through the following three measures:

1, the address generation without real-name authentication
2, through the address can not correspond to the true identity
3. There is no direct association between different accounts of the same owner, and it is not possible to know the total number of Bitcoins for a particular user.

Bitcoin Anonymity Weakness

1, the transaction open. Just know an address and you can find a series of addresses of the connected person.

2, the user's operation of the exchange will expose the owner's other address.

3, Bitcoin communication protocol is not encrypted for easy tracking and positioning

### 2.2.2 Russell's RC Real Anonymous Privacy Technology

1. Three privacy protections
Zero-Knowledge Proof - zero-knowledge proof

ZKP is a cryptographic technique that is a zero-knowledge proof of certain data operations without revealing the data itself, allowing two parties (certifiers and verifiers) to prove that a proposal is true, and No need to reveal any information other than it is true. In cryptocurrency and blockchain, this usually refers to transaction information data.

Coin Shuffle - Principle of Blockchain Mixing Technology

The Russell coin mix feature is based on Coin Shuffle. Coin Shuffle can link two wallet users who initiate payment at the same time. Both of the information are unknown. You can then mix and encrypt transactions, making it difficult to tell when the trade is moving. For example: A transfers 5RC to B. Russell Coin uses Coin Shuffle, disrupts and joins C, D, E, F and other users' transfers. After multiple coins, there is no way to find the privacy of business users.

RingCT - Ring Encryption

For example, A transfers 5RC to B. In the RingCT transaction, A does not directly disclose to network 5RC, but provides a number RCXXX as the transaction amount output. RCXXX= random number + 5 (real transaction amount). The random number is used to mask the real amount and is automatically generated by the wallet. The network can use this RCXXX value to verify that the transaction input equals the amount of the transaction output to confirm that no additional RC has been forged. However, for an outside observer, there is no way to know the actual transaction amount.

The confidentiality of information is a major core advantage of Russell's RC. The bitcoin-like transaction process mentioned above cannot achieve true privacy protection. For business users who do not want to disclose even a small amount of information, this is an important advantage. not enough. Now, they have a more reliable choice.

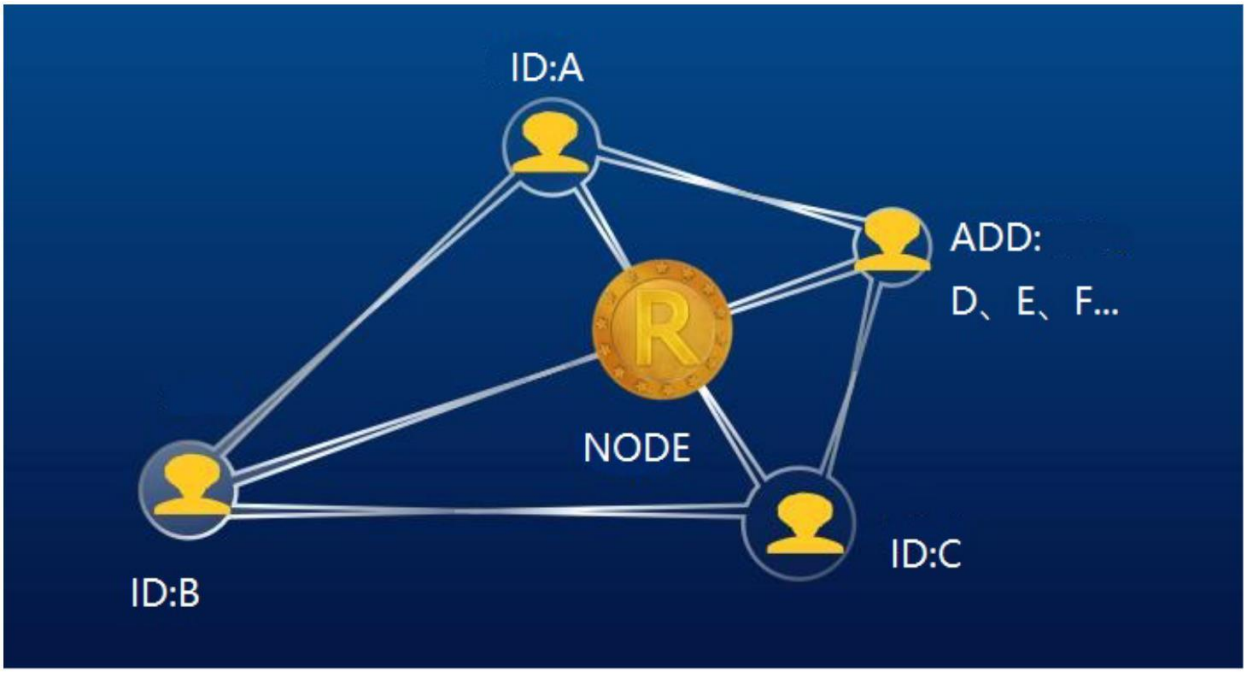
Based on the characteristics of the above anonymous privacy technology, Russell can theoretically completely secrecy the confidentiality of business users.

Warning: Please do not use Russell's high-anonymity feature to use Russell's currency as a tool for the circulation of funds for money-laundering, drug trafficking, and other criminal activities! ! !

### 2.2.3Enhanced privacy and DOS protection

Multiple transactions can be combined into one transaction. Russell Coin RC makes good use of this. It combines multiple funds and sends them out to the

outside world. Once integrated, it cannot be split again. Considering that Darksend transactions are specifically set up for users to pay, this system is highly secure against theft and the user's currency is very secure. At present, at least three parties are required to use the RC currency of the Russell Dollar RC.




In order to enhance the privacy of the system as a whole, we propose to use the same nominal value of 0.1RC, 1RC, 10RC and 100RC. In each round of coinage, all users should enter and export funds in the same denomination. In addition to using the same face value, transaction fees will be removed and all transactions will be broken down into discrete, independent, unrelated small transactions.

The next step is to deal with possible DOS attacks. We propose that all users submit the transaction to the mine pool in the form of a deposit when they join. The transaction is finally exported to the user, and at the same time, a high reward can be paid to the miner. In other words, when the user raises a request to the coin pool, the deposit will be provided at the beginning of the transaction. If the user does not cooperate at some time, such as refusal of signature, the deposit transaction will be automatically broadcast on the entire network. The cost to perform continuous attacks on the anonymous network is extremely high.

## 2.3 Security

Since the transactions are merged together, the master node may “snoop” when user funds flow through. Since each master node is required to hold 1000RC and the user selects a random master node to deploy their funds, “snooping” has little impact. The probability calculation for tracking transactions through the blockchain is as follows：

| Attacker's number of nodes | Blockchain depth | Probability of success (n/t)r | Required RC |
|---|---|---|---|
| 10/1010 | 2 | 9.80e-05 | 10,000 |
| 10/1010 | 4 | 9.60e-09 | 10,000 |
| 10/1010 | 8 | 9.51e-11 | 10,000 |
| 100/1100 | 2 | 8.26e-03 | 100,000 |
| 100/1100 | 4 | 6.83e-05 | 100,000 |
| 100/1100 | 8 | 4.66e-09 | 100,000 |
| 1000/2000 | 2 | 25% | 1,000,000 |
| 1000/2000 | 4 | 6.25% | 1,000,000 |
| 1000/2000 | 8 | 0.39% | 1,000,000 |
| 2000/3000 | 2 | 44.4% | 2,000,000 |
| 2000/3000 | 4 | 19.75% | 2,000,000 |
| 2000/3000 | 8 | 3.90% | 2,000,000 |

In the table above, consider the probability of tracking Russell's RC trades across the entire network, taking into account that the attacker controls N nodes.

n The attacker controls the total number of nodes

t: Total number of master nodes on the entire network

r: blockchain depth

Considering the limited supply of RC and the low liquidity in the market, it is impossible to control so many master nodes in one attack.

Expanding the system by cloaking transactions on the master node will also greatly increase the security of the system.

### 2.3.1Using a relay system to mask the master node

We describe the probability of tracking a single transaction using the Russell Coin RC multi-round currency blending technique. This can be further enhanced by obscuring the master node so that they cannot see the user input/output direction. To do this, we propose a simple relay system that allows users to protect their identities.

Instead of letting users submit input and output transactions directly to the mine pool, we let them randomly select the master node from the entire network and ask it to relay the input/output/signature relay to the target master node. This means that the master node will receive N times of input/output and N sets of signatures. Each round of coinage serves only one of the users, but the master node has no way of knowing which user it is.

## 2.4 Core X11 algorithm

X11 is a widely used hashing algorithm, which is different from other algorithms and is called a linking operation. X11 is composed of 11 rounds of SHA3 algorithm. The result of each round of hash calculation is submitted to the next round of blockchain calculations. Using multiple rounds of algorithms can reduce the probability of using ASICs specifically designed for digital currency mining.

In Bitcoin's life cycle, its fans used CPUs at the start of mining and soon afterwards used GPU software, which quickly replaced the CPU. A few years later the end of the cycle belonging to the GPU, ASIC is an application specific integrated circuit was developed, it also quickly replaced the GPU.

Taking into account the complexity of ASIC mining machines designed specifically for the X11 algorithm and the difficulty of machine building, we expect that this will require more time than Bitcoin for R&D, which will allow enthusiasts more time to participate in mining. . We are convinced that this plays an extremely important role in the distribution of equal shares and the growth of digital currencies.

Another benefit of cross-chain hashing is that the high-end CPU has an average return that is close to that of the same GPU. The power consumed by the GPU has dropped by 30-50%, which is much less than the power of the Scrypt algorithm used by most encrypted digital currencies.


## 3.1Thought level

### 3.1.1.Contribution

Blockchain is the technology of all humans, not the technology of a certain company. Blockchain technology has been developed for 9 years.

Exhibition, for such a high-tech, high-density, high-application technology, is still in its infancy, whether it is now or in the future, Russell will continue to uphold the spirit of continuous contribution, for the technology promotion of the blockchain, without reservation Contribution to this force.

### 3.1.2. Innovation

Blockchain is not new technology anymore. However, the blockchain can still be innovative, and based on the innovation spirit of blockchains to promote other industries, it is the effective way to make the blockchain develop. It is also the continuous driving force of Russell Co. RC enterprises.

### 3.1.3 Cooperation and Opening

Russell is focused on building blockchain technologies and platform service capabilities. It collaborates with various industry partners to jointly build a trusted industry blockchain solution and blockchain ecology based on RC blockchain services. Chain scene landing to help customers achieve business success.

## 3.2 Design and Technical Aspects

### 3.2.1 Easy to use

It is not easy to deploy an enterprise-level distributed blockchain system based on open source components. It not only requires in-depth knowledge of professional blockchains, but also requires various complicated designs and configurations and is prone to errors. RC can help companies automate configuration. Deploy blockchain applications and provide blockchain full lifecycle management, allowing customers to simply use blockchain systems and focus on the innovation and development of upper applications.

### 3.2.2 mature advanced

RC is built on the basis of open source components such as Hyperledger, Kubernetes, and Docker to provide users with a mature and advanced blockchain system. Russell's blockchain service inherits the principles of open source, superior to open source, and open source, and actively invests and leads. Work in multiple open source communities.

### 3.2.3 safe and reliable

Russell’s blockchain service focuses on independent innovation on the basis of open source. At present, it has patents with independent intellectual property rights in key areas such as consensus algorithms, homomorphic encryption, zero-knowledge proofs, telecommunication-level cloud security, high-speed network connections, and mass storage. And technology accumulation. RC provides blockchain services that are based on sophisticated users, secret keys, rights management, isolation processing, reliable network security infrastructure capabilities, and operational security.

### 3.2.4 Cloud Chain Integration

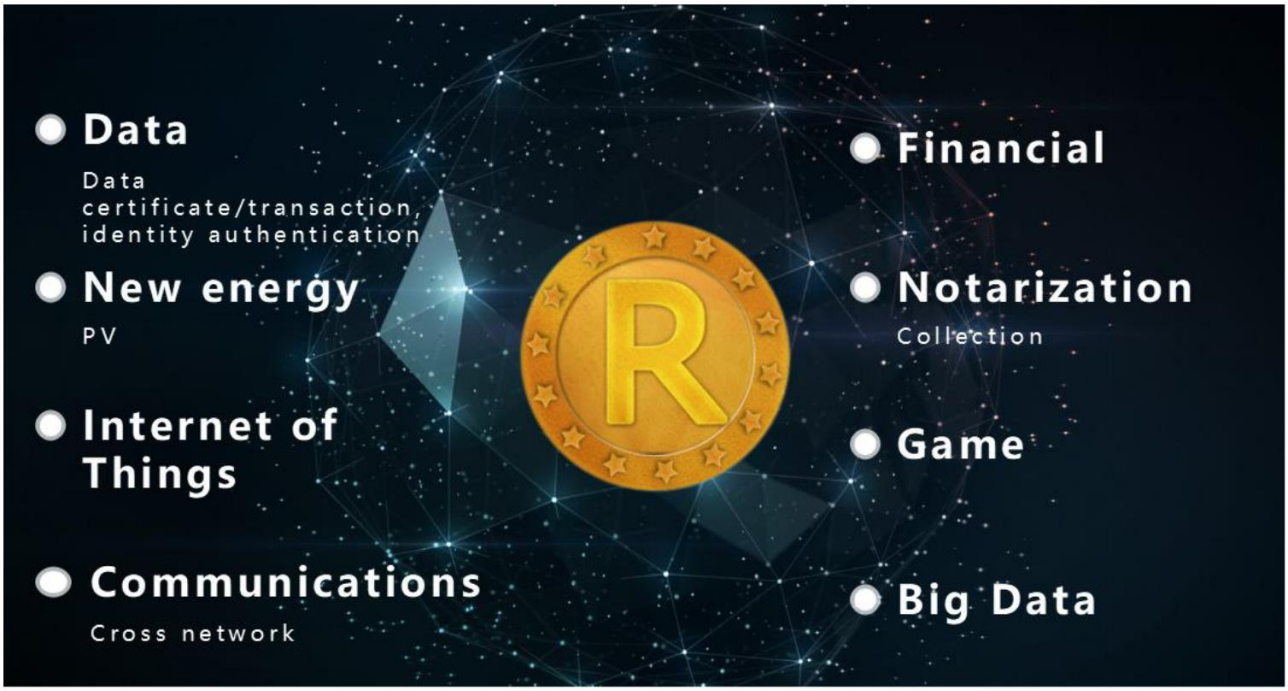
Blockchains can only truly generate value when combined with specific enterprise applications and industry scenarios. Russell offers infinitely scalable resources and a wide range of cloud computing products and customized solutions for various industries. It can bring more convenience, value and imagination to the enterprise.

### 3.2.5 Reduce costs

Reducing costs is an important design idea of blockchain technology. In the blockchain system, participants can conduct transactions without needing to understand the basic information of the other party, achieve "trust without trust", and change the trust model with the third party as the center in the traditional model.

Based on the "weakening" feature of blockchain technology, the existing economic system can be separated from the current system constraints or restrictions.
The tripartite institution endorses the two parties and realizes the value delivery directly. This "weakening" feature can effectively reduce transaction costs, improve transaction efficiency, and reduce the friction caused by transactional consistency.


The application scenarios of Blockchain currently focused on by Russell Coin are as follows (including but not limited to):




## 4.1 Data

### 4.1.1 Data Transaction:

The process of realizing data transaction is transparent and auditable, reshaping social credibility

Data is the most important component of the economy in the future that is dominated by interconnection and machine learning. Analysis of data by AI algorithms will generate many discoveries that change the world. For companies with limited data collection capabilities, data transactions will be a mutually beneficial task that can promote the company's innovation and create new sources of income. However, due to the existence of illegal data reselling in the current data exchange market, low transparency of information, and susceptibility to tampering, the scale of data transactions is limited.

The decentralization, security, and non-destructive traceability of blockchains can build trust between participating parties and promote sustainable and substantial growth in data transactions: data ownership, transaction, and authorization scope are recorded on the blockchain, and data Ownership can be confirmed, and refined authorization scope can regulate the use of data. At the same time, each step of data collection and distribution can be recorded on the blockchain, enabling the data source to be traced, thereby constraining the data source and enhancing data quality. Blockchain-based decentralized data exchange platform can form a larger scale of global data transaction scenarios.

### 4.1.2 Identity Authentication: Validity of Identity Verification and Acceleration of Digital Social Development

Identity and access management services are an important area of application of blockchain technology. Not only that, because blockchain technology can bring high reliability, traceability, and collaboration, it makes identity and access management services possible. The application field has the potential to become a basic technology.

With the acceleration of the digitization process, the application areas of identity and access management services will become more and more widespread, including the Internet, the Internet of things, and social and economic life. In these application areas, the typical role of identity and access management services is to ensure that legitimate users or devices can access and enjoy services safely and efficiently.

The position of identity and access management services in various application areas is very important, but at present, the service has also faced problems such as privacy leakage, identity fraud and fragmentation, bringing great challenges to users, devices and systems. challenge.

The introduction and development of blockchain technology provide new ideas for further solving the above problems. Applying blockchain technology to identity and access management services will likely result in a collaborative and transparent identity management solution that will help companies and organizations better perform identity management and access authentication.

The application of Russell's RC blockchain technology in identity and access management services will rely on supporting hardware, software and blockchain platforms to provide professional, secure, and efficient identity and management services for enterprises and organizations.

## 4.2 New Energy: Building a Trust Fund for Clean Energy Trading

In the field of new energy, the application of blockchain technology is changing the existing industry structure, reducing transaction costs, and retaining more effective records, to achieve the final intelligent development path from digital to informatization.
As the cost of distributed photovoltaics and energy storage is greatly reduced, the energy micro-grid community with regional autonomy as its core will gradually highlight
its economy. At the same time, new energy sources such as solar energy are often distributed. Power plants and households can use solar panels for energy storage. Energy claims can occur between producers and consumers, so they can use blockchain and intelligence. Electricity meters measure and register the power generated by different entities to form an irrevocable power generation book; at the same time, they use smart contracts to achieve point-to-point claims and transactions of
excess power. On the other hand, blockchain can also promote new energy sources to
bring huge public and environmental value to the society. Through blockchain and smart meters, the power generation of different entities is calculated and registered to form an irreproducible clean power generation account book. The relevant environmental protection and public interest organizations can fully verify that the transaction is valid in the blockchain. Issue clean energy production and use certificates
to users and power plants to encourage both parties to produce and use new energy.

In a new energy blockchain project, Russell’s use of blockchain technology allows users to clearly access each of their transaction records and to understand which photovoltaic power station is used for which specific photovoltaic power source. The power generation board can independently select its own power supply source based on the power price of the power station and the remaining available power generation amount. Smart contracts directly match claims between power plants and users. By claiming clean power, users have access to authoritative e-certificates that demonstrate their relative contribution to energy conservation and emissions reductions. For power generation companies, they can dynamically calculate the power supply and demand status of each power station according to the power supply application submitted by users, and adjust the power generation strategy and price in a timely manner.

## 4.3 Internet of Things

Blockchain and the Internet of Things are the perfect match for the Internet of Things and can provide many application scenarios and use cases for the Internet of Things.

These possibilities are no longer futuristic, and the realization of this application is in sight.

The blockchain and the Internet of Things are also hot topics in the current technology field. At the same time, the possibility of the combination of the two has always attracted attention. The analysis and conclusion can be seen that the blockchain can make up for the five key defects of the Internet of Things. The application of blockchain in the Internet of Things covers eight industries. The potential of blockchain in the area of Internet of Things is so huge. Therefore, the upgrading and improvement of blockchain technology should be the current focus of work.

IoT encounters blockchain

There is no doubt that blockchain and the Internet of Things are two hot words in the current technology field. The Internet of Things contains moving objects such as sensors and vehicles. It basically includes any device that uses embedded electronic components to communicate with the outside world. In particular, it uses the IP protocol.

Combining it with the blockchain is beneficial to the entire lifecycle of the Internet of Things devices and applications, and is an adjunct to developing business processes. Imagine a scenario where a networked driverless car can use private chains to ensure real-time, secure vehicle communication, including car launches, driver identification, intelligent contract exchange insurance and maintenance service information, real-time location information, and tracking vehicles.

Blockchain-based distributed ledger technology fills five key defects of the Internet of Things:

1. In the above typical scenario, blockchain-based distributed ledgers can provide trust, ownership records, transparency, and communication support for the Internet of Things.

2. It should be noted that the IoT community will develop a private chain a few years later to save transaction information in an extremely safe manner. The IoT architecture that uses centralized servers to collect and store data can write information into local books and synchronize with other localized books to ensure the security and uniqueness of the facts.

3. All Internet of Things transactions on the blockchain are time stamped to ensure that future generations are available.

4. The real innovation of blockchain is digital protocols or smart contracts that can be applied to blockchain data to implement commercial terms in IoT communications.

5. One of the biggest drawbacks of the Internet of Things is that security standards are not in place. Blockchains with high-end encryption technology can solve security problems.

IoT vertical application case under this background

1. Industrial Manufacturing: The manufacturing cycle begins to enter a completely virtual world, including product development, customer demand monitoring, production, and inventory management. As devices and systems become more intelligent and interactive, blockchains will become the plant, regional, and global supply chain-level books. As a result, costs are greatly reduced, JIT is enhanced, plant capacity is better used, and operational efficiency is improved.

2. Connected Driverless Cars: Connected Vehicles turn vehicles into huge smart applications. Automotive automation has been strengthened year by year, including navigation, roadside assistance and so on. The blockchain will use digital networks to track these devices, enabling inter-vehicle communication and automatic tracking of insurance terms, vehicle inspections, etc.

3. Transportation: Internet of things + blockchain = connected traffic. There are many application scenarios in the vehicle network, which can transfer all traffic information and avoid traffic jams. Extending it to global trade, this transportation network can include water, air and ground transportation networks to track cargo transportation.

4. Public technical facilities and smart cities: Smart devices have been used to track the status of bridges, roads, and power grids, and blockchains can link all of these together, sharing high efficiency, maintaining, predicting usage and pollution. Another important application is to help remote areas monitor natural disasters and prevent large-scale mountain fires, pests, and other major disasters.

5. Financial Services and Insurance: Banks can use blockchain to track IoT devices, such as ATMs, and maintain them. Insurers that have used UAVs to carry out property insurance claims damages in remote areas can use blockchain to verify and verify claims

6. Home and commercial real estate management: The use of sensors in homes and commercial buildings to achieve smart home and office monitoring; use cases in the two areas are not the same, but the scope of application is very large and can integrate the basic functions of the distributed ledger.

7. Smart contracts: Blockchain-based cryptocurrencies can implement two high-level business functions: one is cryptocurrency transfer, and the other is business rules that specify the timing of dividends, especially in accordance with terms.

These rules are called "smart contracts" and apply to all these business areas. They can track business rules and take actions based on preset thresholds. For example, the driverless car that passed the annual inspection must be turned off, and the owner does not pay the premium, and the owner's housing association will be notified

8. Retail: Retailers have used IoT devices and terminals in the business cycle. Including shop floor, tracking store delivery, understanding customer transportation methods, wearable devices, etc. Networked stores add shelves to the Internet of Things, which can reduce inventory time. The blockchain can enforce all use cases, achieve important connections between retailers and consumers, and use automation to remove middlemen, whether they are card issuers or central servers. For example, consumers can store product information and size in a blockchain, and retailers can obtain relevant data safely and directly.

## 4.4 Communication and Telecommunications

Operator Cloud Network Collaboration: Solving Carrier Network Fragmentation and Building a New Business Model

Traditional operators are based on a "chimney network-as-a-service" architecture. Services and networks are operators. The network is a support system and the internal settlement of costs between the services and the network. However, with the convergence of ICT, the communications industry is moving from closed to open. In addition to operators, service providers include a large number of OTT cloud service

providers and virtual service providers. In order to support the needs of the new business ecosystem, the operator network needs to be reconstructed from the cloud to achieve the same flexible, flexible, and automated network-as-a-service (NaaS) capabilities as IaaS/PaaS (Infrastructure as a Service/ Platform as a Service). These capabilities can be paid open to various cloud service providers and virtual service providers to realize the realization of network capabilities. The blockchain can establish trust between different nodes, and as the operator network transitions from a closed internal settlement method to a monetized external service, blockchain technology can be introduced to establish mutual trust between cloudy, multi-network, and multi-port. New trading model.

According to British Telecom (BT) research on enterprise customers, 90% of companies hope to obtain "cloud and network integration" services to guarantee end-to-end SLA (Service-Level Agreement), security, and obtain end-to-end performance reports. To achieve end-to-end management and troubleshooting capabilities. The cloud network system needs to support logging in from any cloud service or network service sales portal, and can purchase any cloud service or network service function without logging in to different portals multiple times.

Based on the appeal, a cloud network service solution based on the alliance chain can be designed to authorize the cloud-based + multi-network sales of the enterprises in the alliance, and record and trace the sales records and configuration of the cloud and network. Take the cloud service side purchase network as an example: the cloud service side submits a request for purchase/configuration

information to the blockchain, and the network service side verifies the request and confirms the request, and the cloud service and the network service side reach a consensus and write the blockchain, and the purchase is now completed. success. In the settlement, the settlement can be based on purchase information, configuration change information, and usage information on the blockchain, and at the same time, the consistency of the book is guaranteed, and real-time settlement is supported.

## 4.5 Finance

Supply Chain Finance: Effectively reduce financial risks and expand financial business development

RC cares about the application of blockchain in the financial industry, because it is for us to provide financial services through “cloud, management, and end”.
The core strategies that promote digital transformation and maturation are directly matched. In addition, the blockchain accelerates the secure distribution, presentation, transmission and processing of information. The most benefit from blockchain

technology is often the industry with low trust among participants and high transaction record security and integrity, and the financial industry is one of them. Relevant consulting report shows that blockchain or distributed ledger technology can save the financial industry an annual cost of US$0.5 billion to US$7 billion. The reduction of this cost mainly comes from the improvement of the existing business of the blockchain, such as cross-border payment value chain. Improvements,

optimization of the reconciliation process, user identity verification, and efficiency of the anti-money laundering process, supply chain finance, and information sharing in inclusive finance.

"Block chain + supply chain finance" is one of the best application scenarios of blockchain in the financial field, with a broad market space. Supply chain finance has a systematic and structural business philosophy, which determines that information flow is the key to the control of supply chain financial risks. How to obtain real, comprehensive, and effective data is not only the basis of risk control in supply chain finance, but also the difficulty in risk control.

Through distributed block books and other technologies, a trusted information network can be set up among numerous companies and financial institutions

participating in the supply chain, and information can be obtained from the source of business management information, and then reached through the blockchain. End-to-end information data is transparent and cannot be tampered with. All participants share, logistically, and fund-flow information through a decentralized accounting system. The bank conducts credit decision-making based on the real company's

trade background and operational data generated in real time, shortens the time for data collection, verification, and assessment, reduces risk costs, and improves the accuracy and efficiency of decision-making. Companies can obtain lower loan costs through supply chain finance, faster and faster financial services, and help the smooth development and broadening of the business.

Specifically, blockchain technology can provide strong support for supply chain finance in the following areas:

· Through the indispensable modification of blockchain, record the capital flow, logistics, and business flow processes of upstream and downstream enterprises and surrounding enterprises in supply chain finance, and reduce the difficulty of collecting and transmitting credible data in the supply chain finance process; for financial

institutions Get first hand supply chain information to facilitate. If enterprises extensively deploy IoT terminals, combined with the invoicing information of the enterprise information system, they can truly outline the company's operating

conditions and assets; companies can generate capital through upstream channels such as corporate online banking and direct connection between banks and enterprises. To provide real financial fund information; this information will help

financial institutions greatly simplify the credit assessment process and costs in the process of trade financing, warehouse receipt loans, accounts receivable loans, so as to reduce the cost of corporate financing, provide financing s efficiency

· Through "smart contracts" and other technical means, new safeguards will be added to the "contract trust" relationship between companies, simplifying the process of business operations such as mutual guarantees, risk sharing, repurchase, and performance, and reducing the handling of non-compliance disputes. The time cost and capital cost.

Taking contract financing as an example, the buyer and seller of the contract establish a medium-to-long-term supply relationship. The sales data of the purchaser derives the evaluation data of the purchase requirements of raw materials. The

actual supply and demand relationship of the market is the first guarantee of financing recovery; The party's company provides risk mitigation measures. After the risk condition is triggered, whether the purchaser performs the risk compensation performance measures such as repurchase or refund according to the directive directly affects whether the financing loan generates bad assets. In the current operations, the above-mentioned compliance constraints mainly stem from “contractual trust,” but there may be legal disputes in the process of compliance, and the processing time and costs of legal disputes will increase in the later period.

The introduction of blockchain “smart contracts” will link the above contractual contractual matters into automatic triggers and operations, and will compensate for unexpected processes and subjective defaults in performance from the technical point of view and ensure the security of financing.

## 4.6 Notarization

A notarization is a notarial office's application according to a natural person, legal person, or other organization, in accordance with legal procedures for civil law firms. To prove the authenticity and legality of legal facts and documents. Traditional notarization has complicated procedures and inefficient treatment.

For the pain points in the field of notarization, the use of blockchain for third-party recording will help maintain a safe depository and blockchain book based on timestamp records, and will increase the transparency of the data certification process, while clearly defining the tenure Save costs and increase efficiency.

RC believes that the most important value that can be realized in the application of blockchain in the field of notarization is to prove the existence of any documents. Integrity, completeness, and ownership, ie proof of existence, proof of completeness, and proof of ownership. Based on this value, RC has the following application scenarios in the field of notarization

### Certificate block chain notary

Taking the qualification certificate as an example, in the case of application, evaluation, etc., it is necessary to prove the authenticity and legitimacy of the academic qualification or the certificate (degree certificate) held, especially the foreign-related qualification certificate, the demand for certificate notarization is more frequent. In addition, there is a need for notarization for various certificates such as real estate licenses, marriage licenses and driver's licenses. However, at present, there are problems such as inefficiency and cumbersome procedures for certificate notarization, which brings a lot of inconveniences.

## Legal evidence block chain notary

For the economy, each contract may become important evidence in the future. Notarizing the contract will greatly benefit its legal rights. For individuals, notarization to obtain key legal evidence becomes the key to protecting their legitimate rights and interests. For example, testamentary notarization and various types of legal evidence such as voice, email, WeChat, and Weibo are all powerful evidences of legal complaints. As a professional legal consulting service provider, lawyers' efficiency in unit time is very important, but it takes a lot of valuable time due to the difficulty in obtaining evidence. If there is a convenient and simple forensic tool, it will greatly benefit the protection of individual legal rights and enhance the efficiency of lawyers.

## Medical Case Information Blockchain Notary

The electronic medical record, as the core work of hospital informatization construction, has now been adopted by most hospitals. However, it is accompanied by the issue that the legal validity of electronic medical record information is the issue of authenticity of electronic medical records in litigation, which deserves special attention. In most cases of medical disputes, the legal validity of medical records is an unavoidable task for the judiciary. According to the relevant provisions of the rules of evidence of the Civil Procedure Law, medical records should be evidenced as “three properties”, namely, authenticity, legitimacy, and relevance. The authenticity of medical records is the most frequently challenged.

## E-government data blockchain notarization

Because of its seriousness, e-government data requires high accuracy and completeness of data. Because it is related to the credibility of government agencies, the traceability of the activity process is particularly important. Relying solely on the e-government platform itself to solve trust issues is likely to affect government authority and credibility.

## Digital Works Blockchain Notary

Inadequate network media supervision leads to frequent occurrence of network infringement, and copyright infringement is particularly serious. The issue of infringement is difficult to solve, and it also makes intellectual property rights a "hard-hit area" for the Internet. Because copyright holders' works and publication time are difficult to identify, the self-initiated rights protection is difficult to obtain because of the difficulty of obtaining legal evidence.

## Contract Document Block Chain Notary

The scope of use of the contract is quite extensive, and the content is very complicated and professional. In order to ensure that both parties signing the contract perform the terms of the contract and avoid disputes and lawsuits, it is necessary to do notarization if the content of the contract complies with the relevant laws and regulations and whether the representatives of the parties signing the contract have legal qualifications, such as the export of labor services in China. All need to have strict contract provisions. The notary office shall conduct a careful review of whether the terms of the contract violate the law. Therefore, contractual notarization is also an indispensable link in China's foreign cooperation.

## Artwork, painting and blockchain notary

In the context of the era of knowledge-based economy, artworks show great commercial value, but in the face of infringement of artistic works, artists' rights are also faced with many difficulties. Some experts pointed out that the difficulty in making proofs of works of art, the high cost of rights protection, and the weak awareness of the artists themselves are important causes of frequent infringement of works.

## Notary works such as internet

The Utilizing Russell's RC notarization technology can be used for the notarization of any document, including documents, web pages, Weixin, Weibo, and mail.
The documents, certificates, and certificates are related to various fields in all walks of life and can be notarized for documents of any format including Word, PPT, TXT, PDF, JPG, PNG.

Compared with the documents kept by existing national notary centers, the way to keep them is to stamp the dated materials and photograph them into the system. These paper documents or picture records are likely to be lost due to attacks on the IT system itself. In response to this, Russell can provide a complete solution.

Record the unique hash value of the file to the blockchain and stamp the log file with the timestamp of the notary system. Once the block is generated, the recorded file information will never be tampered with, for when, who, or registered files Content is completely unique and traceable. And because of the widely distributed nature of the blockchain, in any disaster scenario, as long as there are more than 1 nodes still working, the certified data information can be completely preserved.

The existence proof and authenticity proof of the document can be guaranteed in the repeated self-certification of a large number of widely decentralized nodes.

# 4.7 Games

Russell's RC Forecast: Blockchain will overturn the game industry.

Combining blockchain technology with the development of the gaming industry may solve many of the pains that
Point, blockchain based on the decentralized, distributed billing and other characteristics may have a disruptive change in the game industry.

With the rapid development of the game industry today, the market size in 2017 will reach 106.5 billion U.S. dollars, with an average annual compound growth rate of 12.3%. The world has 2.2 billion players and more than 1 billion paying users. However, there are many problems behind the amazing data.

In the traditional game industry, CP, as the creator of game content, has always been at the bottom of the value chain and cannot obtain the most direct benefits. CP suffered the most pressure, but was distributed by publishers and distributors for most of the profits;

On the other hand, looking at the game market, basically four giant companies took 80% of the market share, SMEs game developers are basically in dire straits; In addition, the data is monopolized by operators, plug-in Problems such as flooding, gradual shortening of the life cycle, and illegal operations have also been regarded as a chronic problem in the game industry.

Combining blockchain technology with the development of the gaming industry may solve many of the pain points mentioned above in the gaming industry. Blockchain based decentralization, distributed bookkeeping and other features may create disruptive changes in the game industry.

How does blockchain disrupt the value chain of the game industry?

The emergence of blockchain has brought new possibilities to the game industry's value distribution rules. The decentralization of the blockchain can return data-information rights and economic control rights from centralized organizers to players.

Blockchain technology is a distributed way of billing. Everyone can participate in billing, and everyone will get an identical booklet. This means that all data is open and transparent, and everyone You can see exactly what data changes in each account, all of which can hardly be modified, which means that it is very safe, any players want to do little tricks will be permanently recorded; In addition, the blockchain Everyone has exactly the same power. It won't cause the system to crash because there is more or less people. There is no such thing as a central server.

Correspond to the game industry, first of all, precisely because of the high blockchain safety factor, hacking, fraud, plug-ins and other ills will nowhere in the blockchain game.

Second, the advantage of not having a central server is that game operators and the majority of players have the same right to know about game data. This prevents game operators from unfairness due to monopolizing data.

The decentralized nature of blockchain technology can also return the in-game economy's dominance from the centralized organizer to the majority of players.

The fact that the digital cryptocurrency cannot be controlled or modified based on blockchain technology makes it impossible for a trading center hub represented by a game mall to exist because players can establish online economics themselves.

In the traditional game industry, players pay in games but they cannot obtain direct benefits. The growth of game value is not directly related to the interests of players.

The carrier that the game company manages the digital virtual property is its own server. The presence of the server imposes constraints on the player: the player has only the right to use the virtual property, not the ownership.

In addition, players' virtual assets cannot be "exchanged." This is also a problem that has been plaguing players for a long time. Players spend a lot of money or energy on a certain game. When they decide to leave, they cannot use the virtual property that they should own to be used for another game.

Blockchain games can change this.

Blockchain can put traditional game currency and props on the chain to achieve assetization. In the blockchain system, players are the real owners of these game assets. The non-destructive nature of the blockchain protocol makes the property rights on the chain clear, and will not disappear out of thin air because the game server has stopped operating.

The problem of "exchange" can also be solved in theory, but the degree of freedom of "exchange" depends on the size of the blockchain's applicable games, that is, whether there are enough games to follow a certain blockchain at the same time.

The blockchain project is based on a trust relationship of decentralized distributed ledgers. Its value lies in the construction of communities. The more community users agree on the value, the higher the project value. Just like Bitcoin, everyone is increasingly agreeing with it. When it is held more and more, its value is higher. Similarly, the more game users approve of your game and are willing to hold your game, the more valuable your game is.

The combination of blockchain and games allows game users to behave as if they had shares in a blockchain project. The value growth of the game has a direct relationship with players. Users are both investors and benefit-sharing people.

Theoretically, if the blockchain builds a completely decentralized game economy, there is no need for middlemen. Developers can directly contact the players (or conversely, everyone can become a middleman in the game. Promote within the community and obtain the corresponding benefits)....

In the current game industry chain, game developers live very hard. They need to transfer a large part of their revenue to distributors and channel distributors. The original competitiveness of a game should be based on the quality of the game itself, but now it is in the promotion and marketing. These intermediate links do not produce value, but only convey value, but also consume a lot of traffic costs.

Judging from the environment of the game, the existence of middlemen is actually a loss of the overall value. The return of game value lies in placing developers and players at the core position, reducing costs and improving efficiency, so as to truly promote the sound development of the game industry. .

Some large game companies almost monopolize the channels of game division. They are vested interests. Therefore, if the blockchain can be successful, it will be the gospel of small and medium-sized game companies. The development of blockchain games will not only greatly weaken the advantages of Apple, Google and other channel providers, but also will break the hegemony of Tencent and NetEase, two giants of the game.

## The difficulties faced in the development of blockchain games

Although blockchain games are a very good blue ocean market, they are still just starting stages. The development of blockchain games requires three stages.

The first stage, data mapping. That is, to establish a one-to-one mapping relationship between the digital assets in the game and the chain of Tokens.

This phase of the game is still centered, is nothing more than that part of the game assets allowed to establish a mapping relationship with Token can be freely between the players, players and trading platforms, players and investors. Nowadays, blockchains are very mature for games and can be realized quickly.

In the second phase, data is chained. At this stage, the game data is decentralized, and game assets are stored directly on the chain. All the user information in the game is also read from the chain. The implementation of this step requires the support of the underlying technology of the blockchain.

The third stage is logically linked. This stage is the core logic of the game, such as: battle calculations are written as smart contracts on the chain, the player's game behavior in the game is to trigger smart contracts. This stage also needs the support of blockchain underlying technology, but it can be implemented in the next 1 to 2 years.

All in all, now is the early stage of the blockchain game. Big companies have not yet fully entered, big companies have slow decisions, they are slow to act, and they consider many policy factors. Blockchain games may be an opportunity left for small and medium-sized R&D companies to overtake large companies.

## 4.8 Big Data

With the continuous development of the sharing economy, the symbiotic development of blockchain technology and big data technology can be said to be the trend of the times. On the one hand, blockchain technology can solve the bottleneck of the current big data technology and can better serve the shared economy; on the other hand, the mature big data technology also needs an application entity to reflect its own value. Big data technology and blockchain technology as two independent Internet technologies, in order to achieve full integration, not only need to overcome technical problems, but also need the government and companies to integrate the two through market forces.

1. The technology integration of blockchain and big data Since big data technology has been developed for some time, it can be said to be a more mature Internet technology. Therefore, using big data technology as a carrier, the blockchain technology is incorporated into the big data technology as a new technology, which is relatively easy to implement in actual operations.

First, the blockchain technology is used as a data collection technology for the big data technology platform to break the data island phenomenon. The essence of blockchain technology is a distributed storage technology, which belongs to the computer's underlying technology. Under the existing computer technology capabilities, as long as a set of procedures and interfaces that comply with the blockchain technology are developed based on the big data platform, the blockchain technology and the big data platform can be directly integrated and provide services. Realize the integration of blockchain technology and big data technology. Moreover, the open-sharing, non-destructive, and traceability features of blockchain technology in data can ensure that the data collected by the big data platform using blockchain technology will be real and reliable.

Second, using blockchain technology for data inspection, blockchain data is used as a data source for big data platforms to protect data security. As one of the important factors restricting the sustainable development of the sharing economy, data privacy protection relies on the private key signature verification form of blockchain technology

to effectively protect data security. It is suggested that all industries establish their own blockchain alliance platform, and the enterprises in the industry will be added to the blockchain system in the form of nodes. Only the authorized economies are qualified to view the data.

Thirdly, the stored data in the blockchain system can be freely traded on the big data platform as assets, so as to achieve the purpose of integration of the two technologies.

For example, establish a data integration system. When an enterprise uploads data to the blockchain system, it can give it some credit according to the data value system. When companies need to make data inquiries, they need to deduct certain points. By using data as a form of assets, blockchain technology and big data technology are merged in a transactional manner.

2. The government promotes the integration of blockchain technology and big data technology to promote data-based reforms in various sectors of society.
The development of data has risen to the national strategic height.

First, formulate unified standards for the development of industry data, and provide the basis for the development of blockchain technology and big data technology. At the same time, we must pay attention to the combination of industry-based data development, production, education and research, and encourage institutions of higher education or scientific research institutions to cooperate with industries that are undergoing data transformation, and form a benign development cycle that encounters difficulties—solves difficulties—discovers difficulties.

Second, laws and regulations concerning big data and blockchains have been issued to strengthen the supervision of data information. Although the government should encourage all industries and companies to actively develop blockchain technology and big data technology, as soon as possible to achieve the industry's data development. However, in the age of digital information, only in the environment where data supervision is in place to ensure the security of data information, "blockchain + big data" can be better integrated and healthy development.

For example, the government can set up a data protection department agency to supervise the behavior of various industries in the process of data transformation to see whether there are violations. And to supervise the classification of data, the government can be open to the data collected by big data, and the private data contained in blockchain technology should be strictly supervised.

3. The company promotes the integration of big data technology in blockchain technology first, implements internal data-based operations and management, and accelerates the construction of blockchain technologies and big data technologies. It is suggested that in the implementation of data-based operations and management

within the enterprise, trial rectification can be conducted first in non-key businesses or departments. After the non-key business or department has certain experience, it will gradually transform and upgrade key businesses or key departments.

Second, to strengthen the training of Internet technical personnel, enterprises set up specialized data business departments. If an enterprise wants to realize the development of blockchain technology and big data technology and gradually realizes integration, talents must be the basis. Enterprises can cooperate with universities in cultivating specialized internet block talents with blockchain technology or big data technology. They can also directly recruit talents with Internet technology through social education and training institutions as a talent pool for enterprises. In addition, companies should also set up an independent department that specializes in R&D, management, and operation of Internet technologies to accelerate the transformation of enterprise data.


## Founder: JD Russell

2005 Graduated from the Department of Information Engineering, Massachusetts Institute of Technology

Intel to attract companies to join the company and give away large stocks

Participate in core engineering research and development after entry

Intel's experience has brought him the first barrel of life wealth

2009 Join Google in Google Car, Google UAV R&D

In 2011, Google formed AI Division as R&D Supervisor

Resigned from the same year and joined BitFury as Director of San Francisco Division

The experience of Google and Microsoft brought BitFury a breakthrough in R&D

Russell Coin’s headquarters and servers are still established in 2017 in San Francisco

## Research Director: Leon

profession:

C Language Development GO Language Development Block Application Development

## Technical Director: Deirdre.

profession:

AI and SCM Python Application Development

## Security Engineer: Green

profession:

Data Security Network Security Server Security

## Technical Consultant: Lester

profession

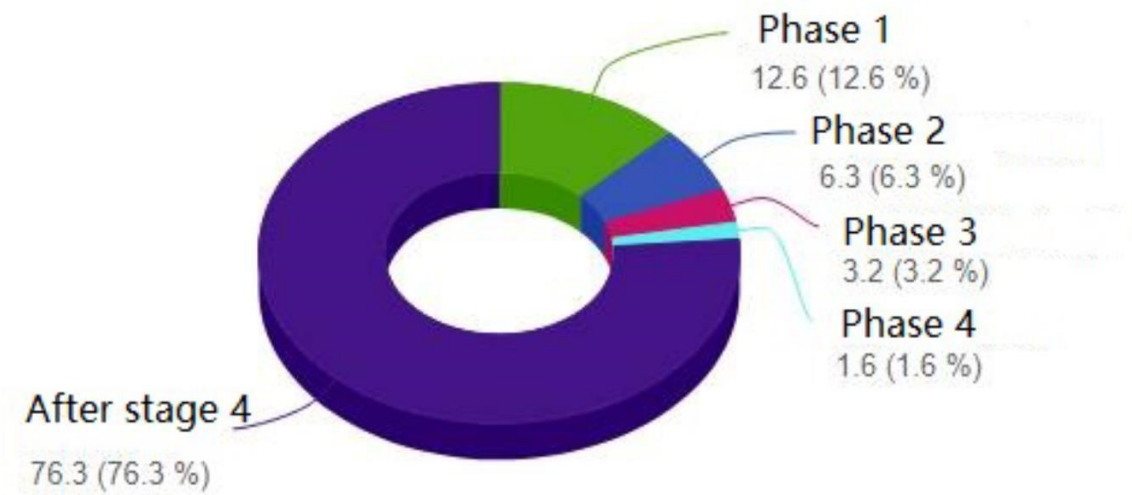
Application Development API

## Graphics: Alexis

## Project Investor: LI jun Zheng

Angel investors have invested in multiple blockchain concept projects


## 6.1 Total Description




Total 21 million

POS+POW mixed mining

Using X11 algorithm reward mechanism

1000RC can establish master node

Master node rewards 50% of coins

Block time 2 minutes

Stage 1 rewards 20 coins per block

Stage 2 rewards 10 coins per block

Stage 3 rewards 5 coins per block

Rewards 2.5 coins per block after stage 4

After the fourth stage, the output of 3.2% of the total amount of coins will be dubbed

Every 132,000 blocks increase in height (half a year), enter the next phase

## 6.2 Promotion and Rewards The Russell Coin Official Foundation carries out promotion plans through these methods



Russell Currency is promoted by Asia-Pacific Foundation

Already have many platforms to take the initiative to contact

Rating Russell for Quality Projects

And take the initiative to become involved in Russell's currency transaction

After careful screening, we currently choose the following two:

GUI.CEO

Your network

https://gui.ceo

97otc

97otc Hong Kong

https://97otc.com/

Russell Coin RC sent candy rewards through major communities, major portals, and continuing interests and champions for Russell Coin!

Russellcoin RC will always stand with its customers, adhering to the concept of mutual benefit and win-win, and will not be happy to contribute to the blockchain business!

In the following, one after another will log in to the following exchanges and platforms: (names not listed in order)











# The Globalization Track of Blockchain Policy

The application value of blockchain has attracted worldwide attention. Various countries have realized the huge application prospect of blockchain technology and began to think about the development path of blockchain from the national level.

## 7.1. United States

On January 26, 2015, the NYSE's Coinbase was approved to establish the Bitcoin exchange, the United States to New York
The state's representative bitcoin supervision legislative process was initially completed.

In June 2015, the Financial Services Department of New York issued the final version of BitLicense, a regulatory framework for digital currency companies. The United States Department of Justice, the United States Securities Exchange, the United States Commodity Futures Trading Commission, and the United States Department of Homeland Security and other regulatory agencies from their respective regulatory areas. Shows support for the development of blockchain technology.

In June 2016, the U.S. Department of Homeland Security subsidized 6 companies that are committed to government blockchain application development to allow companies to study government data analysis, connectivity equipment, and blockchains. The Department of Defense is working to develop a decentralized ledger to ensure ground forces communications and logistics are protected from foreign intrusions.

In addition to the government, the industry has begun to deploy blockchain technology. At the end of 2015, all major financial institutions increased their efforts in blockchain technology research. Silicon Valley technology giants have launched blockchain projects.

## 7.2 EU

In February 2016, the European Commission placed the encrypted digital currency at the top of the fast-growing target area. This move promoted the research of various institutions on digital currency policies.

In April 18-21 of the same year, the European Digital Currency and Blockchain Technology Forum (EDCAB) organized an “expo” focused on the blockchain for the EU Parliament’s policy makers. At the same time, the European Central Bank stated that the European Central Bank plans to evaluate the relevance of blockchain and classified book technology and banking services such as payments, securities custody and mortgages.

## 7.3 Canada

Recognize Bitcoin's "currency status." In December 2013, the world's first Bitcoin ATM was put into use in Vancouver and the bill was amended to regulate the Bitcoin business.

In June 2016, the Bank of Canada demonstrated development using blockchain technology

CAD-Coin - electronic Canadian dollar.

## 7.4 United Kingdom

In January 2016, the British government released a blockchain research report "blockchain: distributed ledger technology", which for the first time comprehensively analyzed the future development and application of blockchain technology from the national level and proposed research proposals. . The white paper proposes that the blockchain be included in the UK's national strategy and promote its application in areas such as finance and energy.

In June, the British government conducted a blockchain pilot to track the distribution and use of welfare funds. According to the UK Department of Work and Pensions, the government hopes this plan will provide in-depth information on financial participation and provide support for the budget.

## 7.5 Russia

The Internet Development Institute of Russia has prepared a roadmap called “Economy and Finance”, including proposals for managing blockchains.

In January 2017, the roadmap for the development of the “legitimate” blockchain technology was submitted to President Putin and the future legal framework for technology development was planned.

The Moscow municipal government implements the "active citizen" program and hopes to record citizens' legal and government projects through blockchain technology.
vote. In addition, the municipal government is also developing other uses of blockchain technology and plans to expand the coverage of this service.

## 7.6 Germany

The world’s first country to recognize the legal status of Bitcoin.

In August 2013, Germany announced its recognition of the legal status of Bitcoin and has been included in the national regulatory system. Bankenverband (BdB), the German banking association, believes that blockchain technology may have a major impact on financial markets.

In 2016, the German Federal Financial Supervision Agency (BaFin) explored the potential application of distributed ledgers, including the use of cross-border payments, bank transfers, and the storage of transaction data.

## 7.7 Japan

At the beginning of 2016, the Japan Financial Services Agency (FSA) submitted a bill on the changes brought about by the domestic economic regulations to the Japanese national legislature. This definition can make Bitcoin an asset, thereby introducing the AML and KYC rules to the exchange.

In May 2016, Japan first approved the Digital Currency Regulation Act and defined it as property.

Japan established its first blockchain industry organization called the Blockchain Alliance (BCCC). The organization is made up of more than 30 Japanese companies interested in R&D blockchain technology. The Ministry of Economy, Trade and Industry of Japan (METI) has released a new survey on blockchain technology and recommends that the government “validate the use cases”.

## 7.8. Australia

In March 2016, Australia Post began exploring the application of blockchain technology in identity recognition.

Australia Post plans to use blockchain technology for election voting. Tim Adamson, director of physical property at the Victorian and Tasmanian government, said the system will be tamper-resistant, traceable, anonymous and safe. Blockchain technology has also been applied to politics in Australia. A new party, Flux, is trying to use blockchain technology to rewrite the political currency system.

## 7.9 China

Zhou Xiaochuan, Governor of the Central Bank of China, stated in February 2016 that “digital currencies must be issued by the central bank and blockchain is an optional technology”.

Prior to this, the central bank also held a digital currency seminar and the central bank’s digital currency prototype pilot test was successful.

In the fourth part of the major tasks and key projects of the “13th Five-Year Plan” National Informatization Plan issued by the State Council, the plan points out that it is necessary to strengthen strategic frontier technologies such as blockchains and advance layout. The Ministry of Industry and Information Technology collaborated with several well-known enterprises to compile blockchain technical white papers.

"White Paper" points out the core technology path of blockchain and the future direction and process of standardization of blockchain technology

From an industry perspective, a number of industry alliances are being established to promote the research and project implementation of domestic blockchain technologies by creating a technology, policy, and application exchange platform for blockchains.

In December 2015, the Blockchain Research Alliance and Blockchain Application Research Center were established.

In January 2016, the Global Shared Finance 100 Forum announced the establishment of "China Blockchain Research Alliance" in Beijing;

In February, the Zhongguancun Blockchain Industry Alliance was established; in April, the China Distributed General Ledger Foundation Agreement (ChinaLedger) was announced.

From a business perspective, starting in 2015, a number of startup companies related to blockchain technology have emerged one after another. According to incomplete statistics of Blockchain Angeles, a total of 1,175 blockchain startup companies have been established in the world, mainly in a few countries such as the United States, Europe and China.

According to RC Institute statistics, there are currently nearly 100 blockchain startup companies and research institutions in China, among which are mainly located in developed regions such as Beijing, Shanghai, Hangzhou and Shenzhen.

## 7.10 Market Tips

There are risks in the development, maintenance and operation of RC, many of which will exceed the control of the development team. In addition to the other content described in this white paper, participants are fully aware of and agree to accept the stated market risk.

The price of RC is inextricably linked with the entire digital currency market. If the overall market conditions are depressed or there are other uncontrollable factors, the RC itself may have good prospects, but the price is still undervalued for a long time....

## 7.11 Policy Tips

As the development of the blockchain is still early, there are no relevant regulations and documents in the world, such as pre-requisitions, transaction requirements, information disclosure requirements, and locking requirements in the recruitment process.

And it is not clear how the current policy will be implemented. These factors may have an uncertain impact on the investment and liquidity of the project. The blockchain technology has become the main subject of supervision in all major countries in the world. Russell's currency may be affected if the regulatory entity intervenes or exerts influence. For example, restrictions on the use of or sales of digital coins may be limited, hindered or even directly interfered with. The development of Russell coin application.

## 7.12 Disclaimer

This document is for information purposes only. This document does not constitute any investment advice, investment intentions, or teaching investment in the form of securities. This document does not constitute nor does it mean to provide any buying or selling behavior, or any invitation to buy or sell, any form of securities, nor any form of contract or commitment.

Russell Currency clearly stated that the intended users have a clear understanding of the risks of the blockchain platform. Once the project participants participate in the investment, they understand and accept the risk of the project, and are willing to personally bear all corresponding results or consequences.