# Golden Agricultural chain

White paper version V4

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# Overview

China has been a big agricultural country since ancient times, and the share of agricultural industry in China is very large. According to the National Bureau of Statistics, in 2016, the total sown area of crops in China reached 166,650 thousand hectares, and the agricultural product circulation market was around 10 trillion. Today, the circulation market for agricultural products is growing.

China's large agricultural market has not completely released its original energy, which is limited by shortcomings. Although agriculture is large, its efficiency is low. There are many problems in the agricultural market. Here are a few key issues:

1. Information asymmetry, imbalance between supply and demand, and difficulty in interconnecting agricultural businesses. Many good agricultural products are not well sold, and there are products without market. The imbalance between supply and demand is in the three major links of agricultural production, circulation and consumption. Producers and consumers are too scattered and weak. The two sides cannot achieve information symmetry and cannot transparent prices.

2, food fraud, untrusted supply chain. Public sector corruption takes 1.5 trillion to 2 trillion dollars a year from the global economy. In the case of stagnant economic growth, tax losses and stagnant economic growth, bribery

and costs are greater, leading to persistent poverty;

3. Food health and safety issues. One in ten people suffer from food safety problems every year, and the lack of food safety procedures has killed 400,000 people. In 2018, a deadly E. coli outbreak was associated with lettuce grown in Arizona. The outbreak broke out in 35 states in the United States, killing 5 people and reporting a total of nearly 200 cases. Unsatisfactory business is super-filled, consumers do not necessarily know where the food in their mouth comes from, whether it is safe and healthy.

But with the combination of blockchain and agriculture, blockchain plays an important role in combating food fraud, as every component in the finished product will become easier to identify, speed up recalls, and allow consumers to take it from the shelf. Find something they can trust in seconds.

In terms of the traceability of agricultural product quality and safety, the "blockchain" can also play a powerful role. In the process of agricultural industrialization, the distance between the place of production and the place of consumption is far away. Consumers have no way of understanding the information on pesticides, fertilizers, and additives used in transportation and processing, and consumers' trust in production is reduced. Based on the blockchain technology of the agricultural product traceability system, all the data will not be changed once recorded in the blockchain book. The advanced technology relying on asymmetric encryption and mathematical algorithms fundamentally eliminates human factors and makes

the information more transparent. .

Some experts believe that at present, farmer loans are more difficult overall, mainly because of the lack of effective collateral. In the final analysis, there is a lack of credit collateral. Blockchain technology is open and non-tamperable, providing a decentralized trust mechanism.

In addition, agricultural insurance products are small in variety and low in coverage, and fraudulent insurance incidents often occur. After combining the blockchain with agricultural insurance, agricultural insurance will have a lot of room for improvement in agricultural intellectual property protection and agricultural property rights trading, and will greatly simplify the agricultural insurance process. In addition, because smart contracts are an important concept in blockchain, the use of smart contract concepts in the field of agricultural insurance will make agricultural insurance claims more intelligent. In the past, if a large agricultural natural disaster occurred, the corresponding claims cycle would be longer. After the smart contract is applied to the blockchain, once the agricultural disaster is detected, the payout process is automatically initiated, which makes the payout more efficient.

However, for farmers, blockchain technology may not be popularized and fully accepted. In fact, farmers are more concerned about the immediate interests, so the future chain must be innovative, based on traceability, build a new retail distribution platform. Help farmers sell agricultural

products. In other words, the system of "blockchain+agriculture" needs to be responsible for the authenticity of the data and the sales of the products, both as a source of traceability and as an e-commerce, so that the technology can be realized.

The field of agriculture has always been known, because its own industry is thin, so it has been slow to respond to new technologies and products. The Jinnong chain team actively embraces new technologies, has the courage to explore and innovate, and the team relies on the advantages of its own physical industry to The combination of agriculture and blockchain technology has enabled blockchain technology to take the lead in the agricultural industry.

# 1. The vision of the Golden Farmers Chain

## 1.1 The core vision of the Jinnong Chain

With the rapid development of the Information Revolution 4.0, the technological revolution has further promoted the business to expand its boundaries and optimize its processes. It is bringing us quickly into a new business social form that is aware of everything, interconnected everything, and trades everything. We call it Programming the business community. In this business society, the trillions of commercial transactions executed every day, the trading business logic, will be converted from the traditional commercial contract, that is, the form of contract to the form of smart

contract, controlled by the blockchain and dispatched the Internet of Things of 100 billion. The equipment is automatically executed and implemented, and in the intelligent decision-making process of automatic execution, more and more will run on the blockchain, and decentralized cooperation will take over most of the information processing and decision-making work to achieve efficient and reliable. Automated processing.

This business form will be widely used in various fields such as public utilities, transportation, manufacturing, medical care, agriculture, and finance to promote the digital transformation of the commercial society and realize the substantial decline in the cost of the commercial society. The biggest feature of this society is zero cost of trust, automation and intelligence.

In this business ecosystem, the company's organizational form will be more flexible, looser, more autonomous and self-disciplined. A group of people will be organized together according to a common goal, organizational goals, incentives are open, transparent, consensus and automatic implementation. Therefore, the company's participants can contribute resources and capabilities spontaneously and self-disciplined to promote the realization of goals, thereby reducing corporate governance and operating costs. Secondly, in this business ecosystem, the business rules and logic of inter-company transactions can realize the fair and rational distribution of commercial interests through blockchain technology, which can greatly

reduce the trust cost in commercial transactions and achieve no need. A business transaction that trusts costs.

The vision of Jinnong Chain is the underlying technology of blockchain designed for the agricultural industry, and is committed to building a platform for the anti-counterfeiting traceability of the global blockchain agricultural industry.

## 1.2 Infrastructure characteristics of the Jinnong Chain

### 1.2.1 Support large-scale commercial applications

The blockchain infrastructure should support large-scale commercial applications with high performance, high service quality, and low cost, while the existing blockchain public chain cannot support large-scale commercial applications.

There are two main problems here:

A. System trading performance is low: Take Bitcoin as an example, the trading frequency that the whole network can support is about 7 strokes/second. It takes 1 hour to confirm a transaction. We can compare the mainstream payment transaction system, 2017 double 11 Alipay The peak payment is 265,000 pens/second, which is nearly 40,000 times different. This system performance obviously cannot support large-scale commercial applications.

B. Inferior performance of smart contracts: Existing smart contracts have the following problems

a. Limitation of the number of smart contract code lines

b. The limitation of the execution time of smart contracts, the execution time of the current smart contracts is basically limited to be completed within one consensus, which greatly limits the complexity of smart contracts;

c. The execution order of smart contracts: Existing smart contracts can only be executed in a serial manner, and in complex business logic, parallel execution of smart contracts is a basic requirement;

The new blockchain public chain is in urgent need of solving performance problems, making the blockchain a true IT infrastructure that supports large-scale commercial applications.

### 1.2.2 Valuable calculations, empowering the real economy

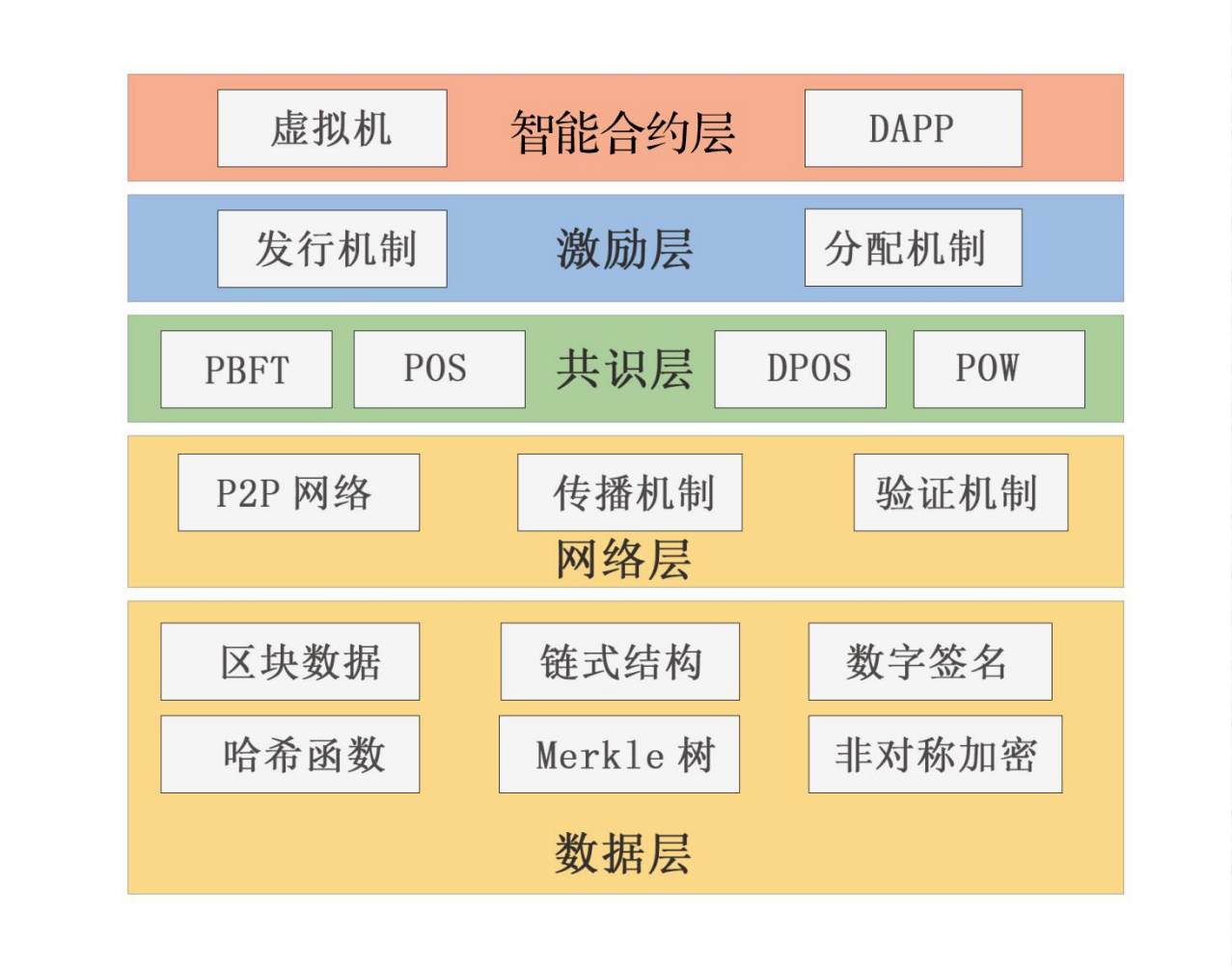
In order to maintain the security of the system, the existing POW-based blockchain public chain system uses a large amount of computing power and power for the hash value calculation operation, consumes a large amount of resources, and the cost performance is too low. This method is not sustainable. of. In the new blockchain public chain infrastructure, the operation of the blockchain public chain system should be supported with a very low amount of computation, and the remaining large amount of computing power can be liberated and reorganized for scheduling purposes. The calculations,

empowering the real economy, creating social value, as an IT infrastructure, support the realization of the core decentralized business logic of the programmable business community.

# Introduction to the core functions of Jinnong Chain

Jinnong Chain is born for anti-counterfeiting. The original intention

is to use blockchain technology to combat counterfeit products, provide the most credible technical support for brand merchants, and use this as an entry point to quickly acquire merchants and users in the trillion-dollar market of anti-counterfeiting. Take a place.




Based on the Golden Farmers Chain, we are committed to providing a computing service called Trust Computing. This is a new computing service model that is different from traditional cloud computing. Compared with traditional cloud computing, this is a new computing model based on blockchain architecture, and all of these calculations have the

characteristics of blockchain computing. This feature is that all data based on trust calculations and operations on such data are non-tamperable, non-destructible, transparent to all, and traceable.

This service is a brand new blue ocean for companies that need to build a business model with low trust costs. In order to realize this service capability called trust computing, Jinnong Chain has the following characteristics:

## 2.1 High performance computing

Due to the actual demand of the agricultural industry, the blockchain technology is required to be highly efficient, and massive data can be stored. The existing technology can not meet our needs. Therefore, the Jinnong Chain was born, and the Jinnong Chain adopts the self-developed improved DDDOC consensus algorithm. With high concurrent processing capacity, and the block really has time in seconds, the book storage can be expanded enough to support the huge data of the agricultural industry;

Jinnong Chain has passed the breakthrough innovation of cryptography. A new consensus mechanism has been established, which we call a random and credible consensus framework. This new consensus mechanism can achieve 1000 times performance improvement in a fully decentralized network with a 1% computing power of a traditional POW network under the condition of achieving the same level of security performance as POW. .

The consensus has several characteristics:

• Feature 1: Complete decentralized architecture: For the public chain system, in order to ensure the security of its network, the premise must be a completely decentralized architecture, which needs to be a complete peer-to-peer network. Road, there is no special node, this is the first guarantee of the public chain system.

• Feature 2: Very large-scale network cluster: It can support more than 1 million nodes to network, and the entire network supports level expansion, which can maintain linear growth of performance on the basis of level expansion.

• Feature 3: Multi-terminal support: Not only nodes with large computing power, but also mobile phones and various smart devices can be connected to our network to provide the corresponding computing power for the entire network.

• Feature 4: High Performance Computing: For the performance of a blockchain system, two values need to be considered, one for the performance of the transaction and one for the confirmation time. The Jinnong chain is composed of the main side chain, wherein the main chain is positioned to ensure the safety of the whole system, and is positioned on the secondary confirmation of the side chain operation result. Therefore, the performance of the main chain requires TPS to be high, but the confirmation time can be appropriately lengthened; The side chain is the operating environment of the specific DApp. Each DApp can choose to form its own side chain. Because the

side chain is the actual service system, the TPS requirement is not high, but the confirmation time needs to be short, so it can be confirmed quickly; This requirement has two consensuses under the framework of random trusted consensus. One consensus is applied to the main chain, and one consensus is applied to the side chain. The performance of the main chain can reach 20,000 TPS, and the confirmation time is 15 seconds. The TPS is between 3000 and 5000, and the confirmation time is 1 second.

• Feature 5: Decentralized design. The problem of concentration is actually a very serious problem faced by Bitcoin and Ethereum. Due to the concentrated deployment of Bitcoin mining machines, it can generate excessive returns, resulting in more than 8,000 export IP addresses of the entire Bitcoin. (November 2017), and the original intention of completely decentralized network design has completely contradicted. In order to avoid the phenomenon that such machines are concentrated in the mining pool, we have fully considered the whole architecture design. Concentration on this issue. What we hope more is that our mining machine can be placed in a family of thousands of households just like a normal computer. It can be used as a computer when it is used, but if you don't use a computer, it is a mining machine. When you open the machine there, it can provide the external power and earn a corresponding income for you. This is the design goal that the Jinnong chain hopes to achieve.

## 2.2 Mutual Confirmation Consensus Construction Mechanism

Any blockchain project requires a consensus mechanism to enable peers across the globe to agree on the state of the data. The Jinnong Chain aims to develop an efficient and self-maintaining consensus system to adapt to the commercial positioning of the Jinnong Chain. The DPOC Consensus was born.

The full name of DPOC is Delegated Proof of Credit, the Chinese name credit consensus mechanism, referred to as DPOC.

The DPOC consensus mechanism of Jinnong Chain solves the performance problem of POW, solves the problem of POS's equity inequality, and solves the problem of DPOS's violation handling efficiency.

So what exactly is DPOC like?

Based on the Golden Agricultural Chain Credit System, DPOC is a system that uses credit admission, uses the uniqueness and certainty of existing blockchain books, and coordinates each node for unicast permission determination and verifiable.

The core of blockchain thinking is the decentralization idea. Decentralized thinking means that in a group with complete equality, no center and authority, a group of people reach a consensus through negotiation to accomplish a goal that everyone recognizes. In the blockchain, there is technical consensus and business consensus.

### 2.2.1 Consensus access

As a public chain, the consensus node covers the user side, and the user

behavior must be standardized in order to make the entire network run stably and securely according to the protocol. POW uses the power to compete for the specification node, POS uses the number of tokens and the age of the standard node, DPOS uses the vote to elect the trustee; these popular consensus, in principle, in addition to the POW (in fact, the difficulty adjustment of the pow is also utilized In addition to the existing books, the determinism of the books is used to select nodes with unicast permission. Therefore, as long as the determinism is based on the data of the book on the chain, the consensus set is sequentially released.

The consensus threshold of the Jinnong Chain is that credit can reach a certain value and can participate. This kind of access method has a certain difficulty and requires time to accumulate credit. As an open source public chain, an attacker is likely to take a long time to prepare and launch an attack on the network consensus.

Therefore, the Jinnong Chain introduces an economic sanctions mechanism to prevent this from happening, because the proceeds from the attack by the attacker will not be greater than the loss. This is to increase the margin mechanism on the basis of credit access as an aid. Some people say that it is not enough to directly submit the deposit. Credit access is superfluous! The reason is that the situation of the consensus is extremely complicated, and some situations are not suitable for economic sanctions. For example, the computer of the consensus node is dead, the network is dropped, if there

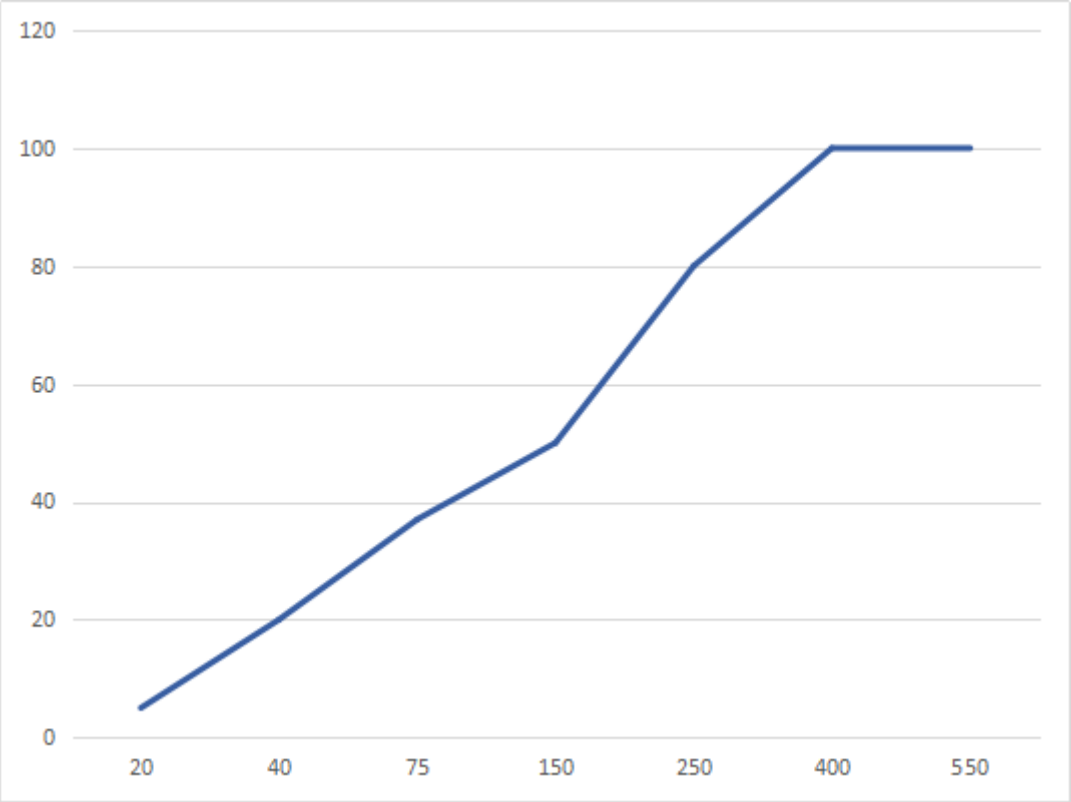
is no credit Into the system, then the system can not identify and exclude such nodes, if the unified use of economic sanctions, it is bound to shut out a large number of users. In addition, the power of the credit guarantee system is not monopolized by a large number of holders. As one of the underlying value agents, credit will have a broader and more important use in the future.

### 2.2.2 Floating Margin Mechanism

Because the consensus of the Jinnong chain can reach a consensus without frequent communication between the nodes (described below), the performance of the Jinnong chain is not affected by the consensus nodes, and the performance of 100 nodes and 1000 nodes is almost the same. Therefore, Jinnong Chain uses an innovative floating margin mechanism to balance the benefits of consensus nodes.

The Jinnong Chain Network dynamically calculates the required margin for participation in the consensus through the current consensus node number and a linear growth algorithm.

recognizance = maxRecognizance * ((Math.log(size/Math.log(2)) * size) / Math.log(maxSize/Math.log(2))




From the above calculation formula of margin, it can be seen that the margin required to participate in the consensus increases linearly with the increase of the number of consensus nodes. When the number of consensus nodes reaches the maximum number, the margin also reaches the maximum.

### 2.2.3 Network verification

Any node's consensus application and withdrawal will be strictly tested by the entire network.

The test of credit:

When any node applies to become a consensus node, the other nodes will first verify the credit value of the node. If the credit value is found to be lower than the threshold, the request of the node will be discarded.

Margin test:

Any request for a consensus must be submitted with a corresponding deposit. The difference from the transfer is that the submitted margin recipient is a smart contract script that enforces the mandatory redemption of the margin. The whole network will not only validate the credits and deposits for applying for consensus requests, but also validate the redemption of smart contract scripts and define the highest level of security for margins.

Margin redemption test:

The consensus agreement of the Jinnong Chain has an economic sanctions system. Therefore, the deposit submitted by the node does not adopt the traditional freezing method; in the process of system operation, once a node with serious violations is found, any integrity node can punish the margin of the illegal node. The node's margin is actually submitted to a smart contract script, which is in an unowned state. In order to ensure the safety of this part of the funds, any withdrawal of the consensus or punishment request will be strictly verified. The validation rules contain a strict verification agreement. Anyone wants It is impossible to take away the deposits of others. It is impossible for anyone to punish freely without the margin of others.

Sanctions:

Every block in the Jinnong chain has a signature of a person, so when

someone tries to do evil, it will inevitably leave cryptographic evidence to be held accountable.

When the consensus node times out, or the non-human factor such as the crash is not available, the whole network can monitor the perception and downgrade the node to a normal node at the first time. Although there is no cryptographic evidence in this case, it still needs to provide evidence that other nodes on the whole network can verify it.

Any node that imposes sanctions on other nodes must provide reasonable or cryptographic evidence so that it can be validated and accepted by other nodes throughout the network.

### 2.2.4 Determining Unicast Broadcast Permissions

Combined with the theoretical knowledge mentioned in the previous sections, this section will provide a more comprehensive DPOC operating principle and details.

First make a few noun explanations:

Consensus node: A node that meets the credit threshold and successfully applies for consensus

Consensus round: The complete time period for all consensus nodes to flow out of the block is called a consensus round. Each consensus round has a start timestamp and an end timestamp. The end time of the previous round is the start time of the current round, so the node must proceed according to this time rule, otherwise any changes will be rejected by the whole network.

In each consensus round, all consensus nodes have the power to broadcast blocks once and only once.

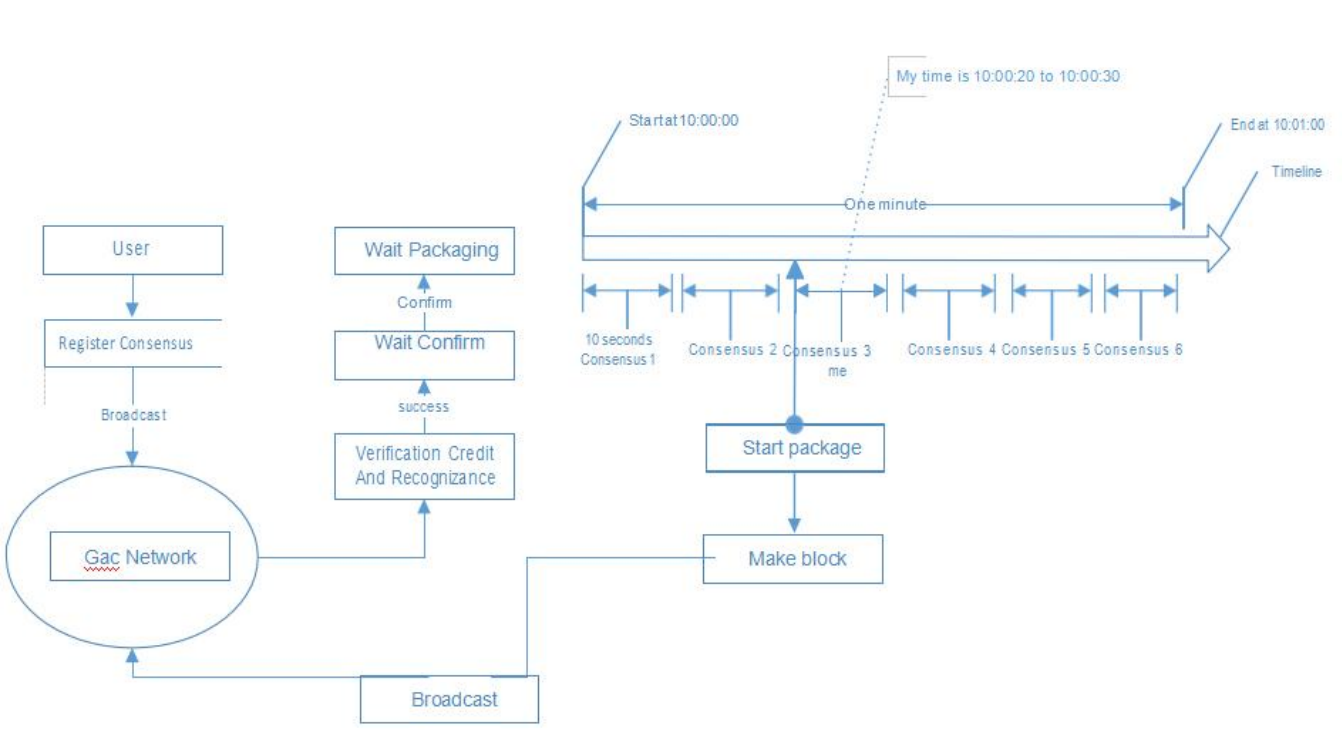
Consensus order: In a consensus round, the order in which each consensus node is out of the block is called the consensus order.

In the consensus of the Jinnong Chain, the order of each round is randomly changed, according to the start timestamp of the current round (that is, the end timestamp of the previous round) and the consensus node account, and the order is determined by the algorithm. All nodes (including non-consensus nodes) must abide by this rule in order to function properly. Any even minor changes will cause the changed nodes to be excluded from the entire network.

Consensus period: After determining the consensus order, each node is mapped to a time period, which naturally determines the unicast permission. This time period also has a start time and an end time, and the interval is the block time. , called the consensus period.

Block permission verification: Each block header has the start time of the current round, the time period information of the consensus node, and the signature of the consensus node. The validity of the block is verified by these information.

DPOC complete running process:




a. Apply for consensus

b. Validation credit and margin

c. The application contains the block and is confirmed

d. Waiting for the current consensus round to end

e. The current consensus round is over, the next round of consensus begins, and the next round changes to the current round.

f. Determine the current round of consensus

g. Initialize the current round of consensus order, and each node calculates its own consensus period

h. Receive new blocks and perform block permission verification and fault-tolerant monitoring, waiting for the arrival of their own consensus period

i. Go to the start time of your own consensus period and start packing blocks.

j. The packager gets a new transaction from the memory pool and verifies it

k. Estimated the end of your own consensus period, stop packaging

l. Ask the fault-tolerant monitor if there is a violation that needs to be processed and issue credit

m. Verify block transaction data

n. Broadcast block to the whole network

o. Continue to receive new blocks and perform block permission verification and fault tolerance monitoring, waiting for the next round to start

### 2.2.5 Fault Tolerance Monitoring and Punishment Mechanism

The blockchain system is a very complex system, not only because of the complexity of the underlying technology, but also because of the extremely complex environment in which it operates, especially the public chain. Usage habits, network environment, man-made damage, etc. may affect the normal operation of the system. The consensus mechanism of the blockchain can effectively solve the impact of these factors.

For the DPOC consensus mechanism of the Jinnong Chain, any action of the node will be supervised by other nodes of the whole network. The consensus of Jinnong Chain Innovation will impose corresponding penalties on the following situations, and the whole system will adjust and maintain its own stability.

① No block, deduct a certain credit value, and downgrade to a normal

node.

② Non-human factors such as out of time block or network synchronization delay will be determined according to the choice of other nodes in the whole network. If the next block refers to this block, then normal phase is fine; if the next block discards the block That block will become a lone block, and the result is credit penalty and downgraded to a normal node.

③ Non-consensus nodes randomly broadcast blocks, and the verification fails, and is directly discarded.

④ Broadcasting multiple blocks in the same time period is a serious violation type, and the deposit will be forfeited and the credit will be blacked out.

⑤ Packing a double flower transaction, which is a serious violation type, will be forfeited and the credit will be blackened.

⑥ Trying the fork system from the old block on the chain, the so-called double-flower attack, is a serious violation type, will be forfeited the margin and credit black.

456 These three types of serious violations, the whole network can be monitored, and there is cryptographic evidence, any integrity node only need to submit one or more block header information containing its signature to drive the penalty power, confiscate the node's margin to the community fund Account and deduct the node 999999 points

The credit value, the node being punished, can never be evil again.

### 2.2.6 Technical consensus

In the traditional network technology, the development of technology is controlled by the team with technology; but due to the decentralization of the blockchain, the blockchain network is built by all parties, and the typical is to provide The miners of computer mainframes, and the developer team that provides blockchain software, if the parties are inconsistent in the direction of blockchain development, it will often cause the blockchain network to split, split from a large network into multiples. A small network, this incident has happened in both Bitcoin and Ethereum.

In the early stages of the development of the blockchain, many people in the community did not have the idea of tampering with the blockchain. However, many vicious incidents in recent years, including the hard fork event of Bitcoin and the DAO hacking theft in Ethereum, have caused some changes in the community's thinking. These events have made the community realize that if it can't be modified at all, it may not be a good solution. Modification is not the key. The key is whether this modification is made by a central decision or by the online community. Therefore, an important feature of our gold farming chain is the network governance that supports democratic voting.

### 2.2.7 Business consensus

In a decentralized community, it is a complex and difficult task for a

group of people to set a goal together and accomplish it. In a real-world community, a variety of frictions occur during the goal-to-finish process. Because no one can independently propose a perfect solution to all problems. At the same time, waiting for everyone to vote on decision-making will be a relatively long process. We call this problem a non-deterministic consensus problem. In order to solve the problem of non-deterministic consensus, we try to develop a "mutual confirmation" participatory joint construction mechanism. The most representative case of "mutual confirmation" is a negative case: the "mutually confirmed destruction mechanism" between the United States and the Soviet Union during the Cold War period, that is, if the two sides voluntarily initiate and attack themselves, they or they will definitely fight back. Caused the complete destruction of both sides. This "mutual confirmation" mechanism guarantees the balance and peace of the United States and the Soviet Union. Jinnong hopes to build an effective participatory and systematic mechanism to efficiently build together a better future for all parties without the need for consensus among the participants. We call this "mutual confirmation". Consensus building mechanism."

Specifically, a participatory co-construction mechanism needs to guide participants to think and make choices based on three core principles under the guidance of a coordinator: basic principles, appropriate processes, the right approach or tools. When making decisions based on these three

principles, the relevant design or decision made by all participants independently is open and can embrace more possibilities than the traditional decision-making process to limit the possibility of other people's decision-making - everyone's Decisions can be revised and reused by others. Under such a mechanism, even if a complete consensus has not been reached, joint construction and work can be achieved.

Jinnong hopes that under the guarantee of blockchain technology, it can popularize such values and mechanisms in our community, so that the community can work and make decisions efficiently.

# The economic ecology of Jinnong Chain

The system token code built into the Gold Agricultural Chain system is GACT. The system built-in token is the driving force of the whole system

ecology. It will be used to support application development, payment of application cost, support for sub-chain digital asset smart exchange, participation in consensus rewards, Payment transaction fees, etc.

## 3.1 Jinnong Economic Ecology Token System Introduction

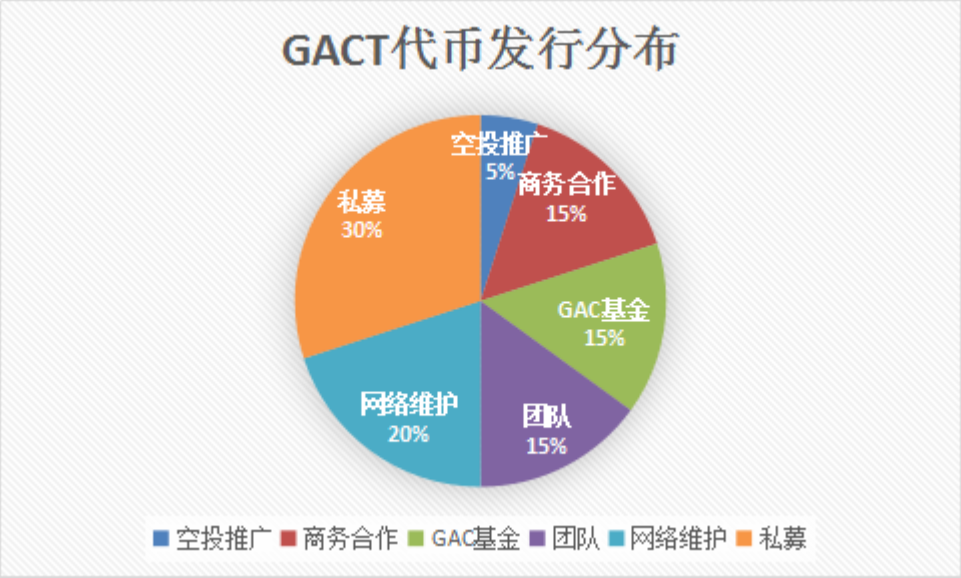
GACT is a tool used by the Golden Farmers Chain for service billing, with a ceiling of 4 billion.

The program is a preliminary plan, the details of the program, as well as the specific economic parameters, may be further adjusted and modified according to the operation of the test network on the public online line.

### 3.1.1 Generation of GACT

- Mining: All GACTs generated by the nodes participating in this round of consensus
- Selling power generation: 1GACT is calculated when 1 unit of calculation power is used. In the first year, each used power calculation node (mine machine) is 1GACT when 1 unit of power is used; 0.3GACT is obtained when using 1 unit of calculation power; the amount of GACT obtained by using 1 unit of calculation power per year is reduced to 80% of the previous year.
- The same amount of GACT is constant as for BTC, and there is no inflation. 20% of the total amount of tokens will be produced by mining and will be halved every two years. Prospecting output rules will be announced in front of the main online line
- 15% of GACT generated is allocated to the development and operation

team (partial locks of the team, linear unlocking after 20 months on-line, unlocked 5% per month) for the maintenance and construction of Jinnong Ecology; GACT Foundation allocates 15 %; through smart contracts to ensure that 15% of them are allocated to business cooperation, for exchanges, business cooperation, etc.; 30% are allocated to private equity crowdfunding; 5% are allocated to airdrops and promotion activities, for community members who are airdropped to mainstream tokens The address is rewarded as a community activity; 20% is allocated to the network maintenance, used by the miners to mine the main online line, and the main online line is in the lock position.




### 3.1.2 GACT value reflects

- GACT tokens are used as fuel for chain trading.
- Smart contract deployment and execution will consume a certain amount of GACT.
- In the future, any GACT sub-chain asset will have a certain percentage of airdrops on GACT token holders.

• Enjoy 30% of all GACT Foundation blockchain application benefits. Dividends are distributed on a pro rata basis based on GACT holdings.

• GACT will be used as a payment method in the Jinnong Chain Mall to purchase any products that are sold in the app.

### 3.1.3 Use and destruction of GACT

• Buying power through GACT: DApps running on the Golden Farmers chain, when their smart contracts are running, they need to buy the power of their code at runtime through GACT; cost = amount * price; amount is consumed for this run. GACTThe number of price is UGas price; McKinnon by Oracle Oracle GACT market price monitoring mechanism, dynamic regulation of GACT price, ensure DApp running costs over a period of time

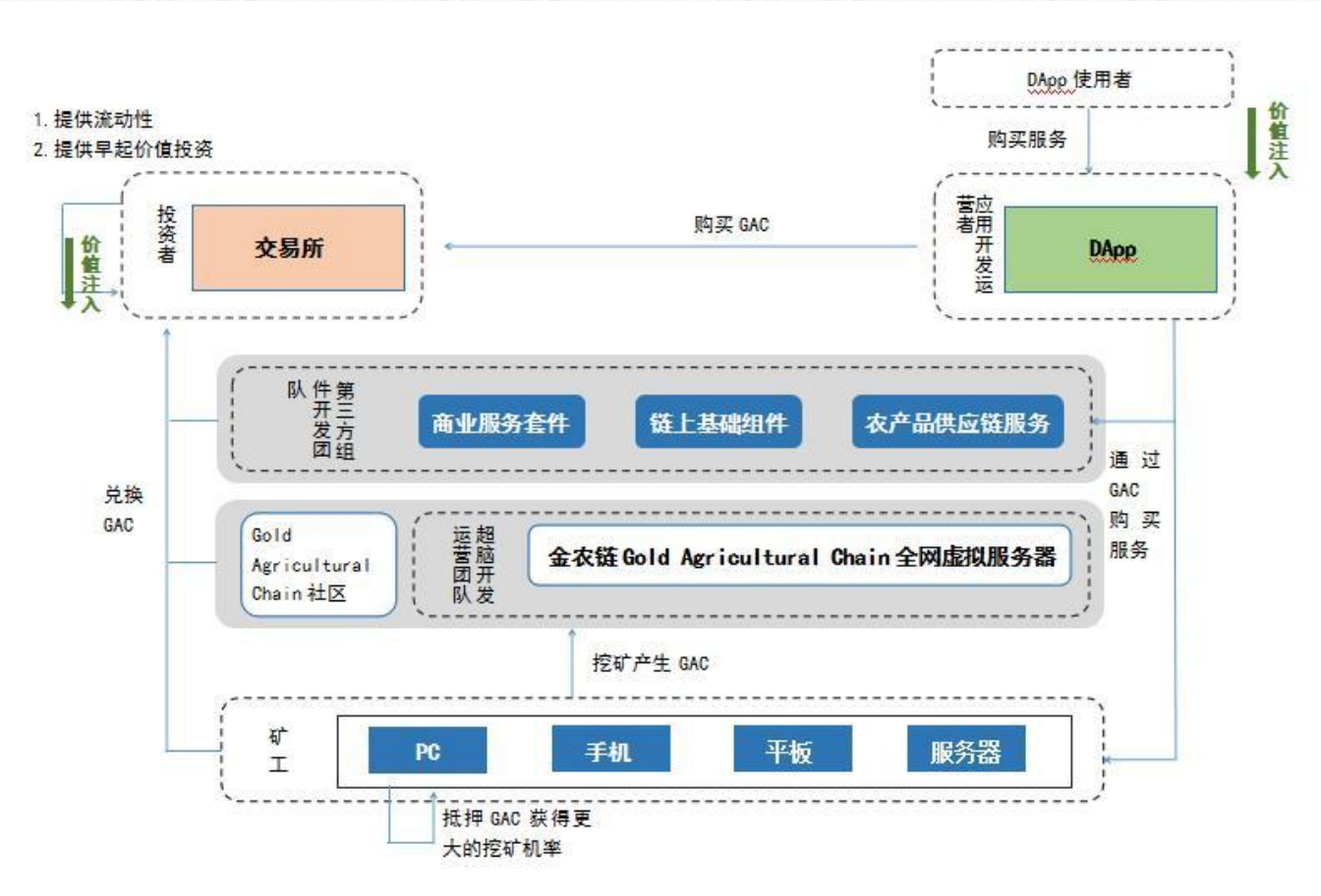
Maintain at a relatively stable level; all is for the purchase of GACT will be permanently destroyed

• The purchase of third party products and services through the GACT: run in McKinnon chain of DApp, can buy third party service deployment in McKinnon chain by GACT, such as agricultural products / services / credit certification service / zero knowledge proof service; the 80% GACT will be paid to third party service providers, 20% GACT will be permanently destroyed

• Token: the chance of participating nodes is involved in providing coins and force (machine need mortgage), a certain number of GACT can participate in the gold of agricultural economic system

## 3.2McKinnon economic ecological description

We believe that the memory block chain economy value growth from the real economy value creation process, so that the economic system is a solid support, can be positive and healthy long-term development, at the same time the ecological economic system of party can benefit in ecology, economy that is sustainable;




In the whole agricultural ecological economy in gold, including gold miners in agricultural development, chain operations team, DApp application developers, DApp users, the role of several exchange investors,

- Miner: gain by providing machine is miners resources, agricultural chain. Gold mining is divided into two forms, one is to provide computing

power coins in main chain, is its nodes randomly selected, will produce GACT as economic returns; one is his machine operator as trusted computing is the external force to the sale, each round were randomly selected for sale is the machine will get GACT as economic returns; probability of random selection is according to the number of nodes of the GACT machine credit mortgage, comprehensive selection and performance of the machine, the probability of high scores machine is selected larger, at the same time to ensure the comprehensive high scores on the machine will not always be selected, to ensure fairness;

- McKinnon development operations team: GACT annual output of 5%, will be allocated to farmers as a reward fund, the fund will be allocated to the funds to further McKinnon development operations team, in this way, both to ensure the development and operation of McKinnon chain will have a stable and sustained investment in the economy and income the level of McKinnon is directly related to the Internet, to motivate the team to create a better and stronger economic and ecological efforts;
- The third party service component developer: third party team can be based on the gold chain on agricultural development services to third party service components for different purposes, for DApp to call at runtime. DApp runtime need to pay GACT as fees for the use of third party payment service. GACT 80% will be allocated to the third party developer, 20% destroy;
- DAppUser: DApp users pay for DApp in the process of use, and the cost

of the part will do for the use of fees paid to the intelligent agricultural chain contract McKinnon chain network, as the network into the real economic value; with the increase of DApp and DApp increase in the number of users, DApp paid to farmers the chain of GACT will increase, the economy will experience rapid growth and development.

# Four.Token distribution scheme

## 4.1 GACTConvertibility Plan

| name | GACT |
|---|---|
| Code | GACT |
| Tokentotal | 40Billion, and never more |
| Private exchange price | 1GACT=¥0.3 |
| Private exchange facility | 30% |
| Use | Five see |

Support: bitcoin currency exchange (BTC), Ethernet square(ETH),USDT

The settlement price to the day coinmarketcap.com prices prevail.

## 4.2 GACTDistribution scheme

| name | Distribution scheme | Details |
| --- | --- | --- |
| private placement | 30% | Private investors is a great influence in the industry and outside institutions and experts, have rich industry resources, whether from the technical or commercial development will be of great help and guidance, the Gold Agricultural Chain business ecosystem has a key role in landing |
| mining | 20% | GACT20% of the share is generated by mining, Gold Agricultural Chain team promised not to pre |

| | | |
|---|---|---|
| | | dug, main line before in lock state |
| Foundation / ecological | 15% | Gold Agricultural ChainThe foundation will screen memory block chain landing applications and have the ability of the team to make strategic deployment of these industries, technology investment and capital investment to the ability of the team, to help the memory block chain commercial application in the McKinnon chain early landing |
| The core team | 15% | The initial core team to make manpower, resources, and material resources in the development process of Gold Agricultural Chain and the contribution of technology, so the issuance of GACT in return. The founding team holds a part from the GACT issue, 20 months of linear unlock, each month the total holdings of unlock5% |
| Business Cooperation | 15% | It is mainly used for exchange and other business cooperation |
| Airdrop promotion | 5% | For airdropped to mainstream token community members to address community activities or as a reward |

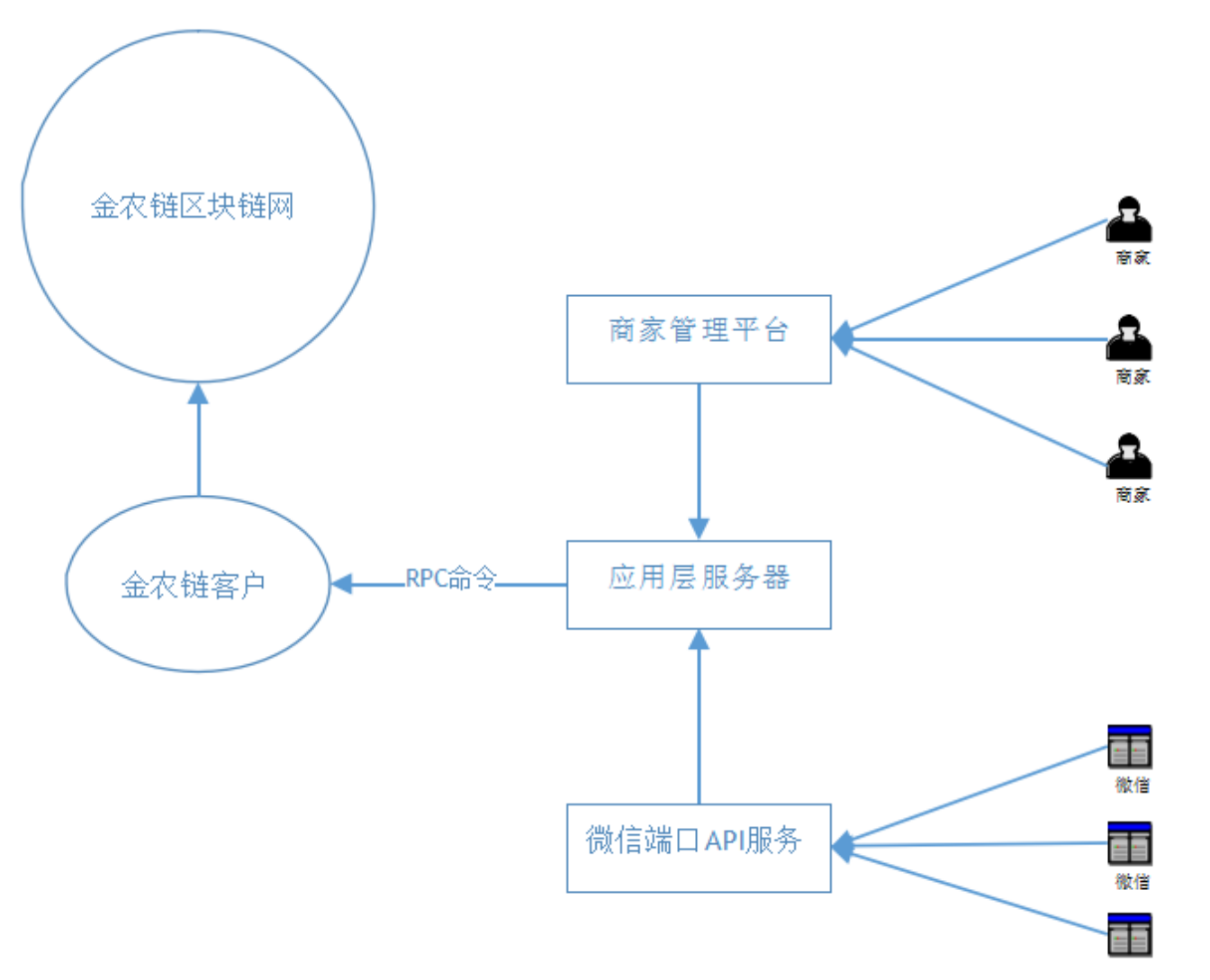
## 4.3 GACTThe allocation of funds raised

| The use of classification | proportion | Details |
|---|---|---|
| 12Million piecesGACT | 30% | In the pre release payment period |
| 8Million piecesGACT | 20% | Issue payment period |
| 8Million piecesGACT | 20% | Will be reserved for community operators |
| 4Million piecesGACT | 10% | Will remain in the GACT team |
| 2Million piecesGACT | 5% | Give the project consultant |
| 6Million piecesGACT | 15% | To the foundation |

**During the pre release, issued a total of 1 billion 200 million medals**

# Five application scenarios.

## 5.1The first application of McKinnon chain: Security traceability platform




### 5.1.1Security analysis

Fake harm

Counterfeit: blind;

Fake oil: a car accident;

Fake condoms: life accident;

False: the health hazards of edible oil;

Fake milk powder: influence the future of the motherland;

●●●●●●●●●●●●●● The loss of >2000 million / year output value of >8000 million / year

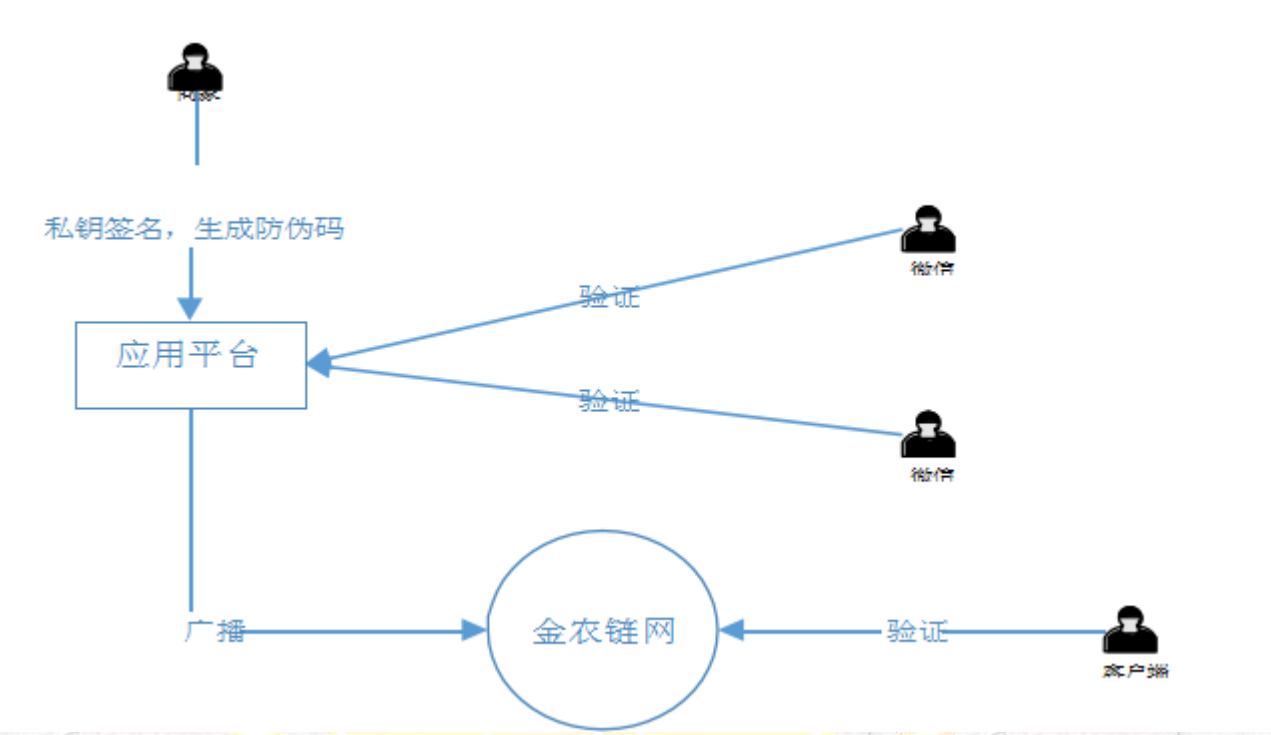
### 5.1.2The industry pain points

- The market turmoil: anti-counterfeiting technology level is uneven, the lack of unified and effective solutions, price and value is positively related to the low-end anti-counterfeiting effect is poor, the high cost of high-end security
- Many security companies coexist, anti-counterfeiting means different companies have been imitated, and verify the existence of fraud center, security companies to provide convenience for cheating risk, but fake
- Anti counterfeiting technology easy to copy, the high cost of counterfeiting, some famous enterprises for counterfeiting, set up a special team to invest billions, with little success
- No unified security verification center: at present China no unified security verification center, the number of security company will have as many or more security verification center, security verification center set up by the state is to buy these data scattered in the security center, so the methods of fraud often succeed in false heart.

### 5.1.3McKinnon chain solutions

McKinnon chain using memory block chain technology to the center, not

to be tampered with, do not give false consensus trust property, for any crop to generate a unique code in the chain, as a number of the crops, do a code, and all the information that the crop will be recorded into the memory block chain, the user can scan the code through the APP lifetime number it to query all the information it.




### 5.1.4McKinnon chain security advantages

| | price | Security company cheating | Replication technology | Multiplexing, Chuanhuo | The verification center | Accountable |
|---|---|---|---|---|---|---|
| Traditional | High | Have | Difficult to prevent | Difficult to prevent | Easy to counterfeit | difficulty |

| | | | | | | |
|---|---|---|---|---|---|---|
| Agricultural chain | low | cannot | Non-existent | The loss outweighs the gain | Unified, not fake | easy |

McKinnon chain from the cost function, practical aspects have to subvert the traditional anti-counterfeiting ability. McKinnon chain will continue to provide the corresponding commodity CRM management, traceability and other functions. To further increase the memory block chain security actual advantage.

### 5.1.5Trace analysis

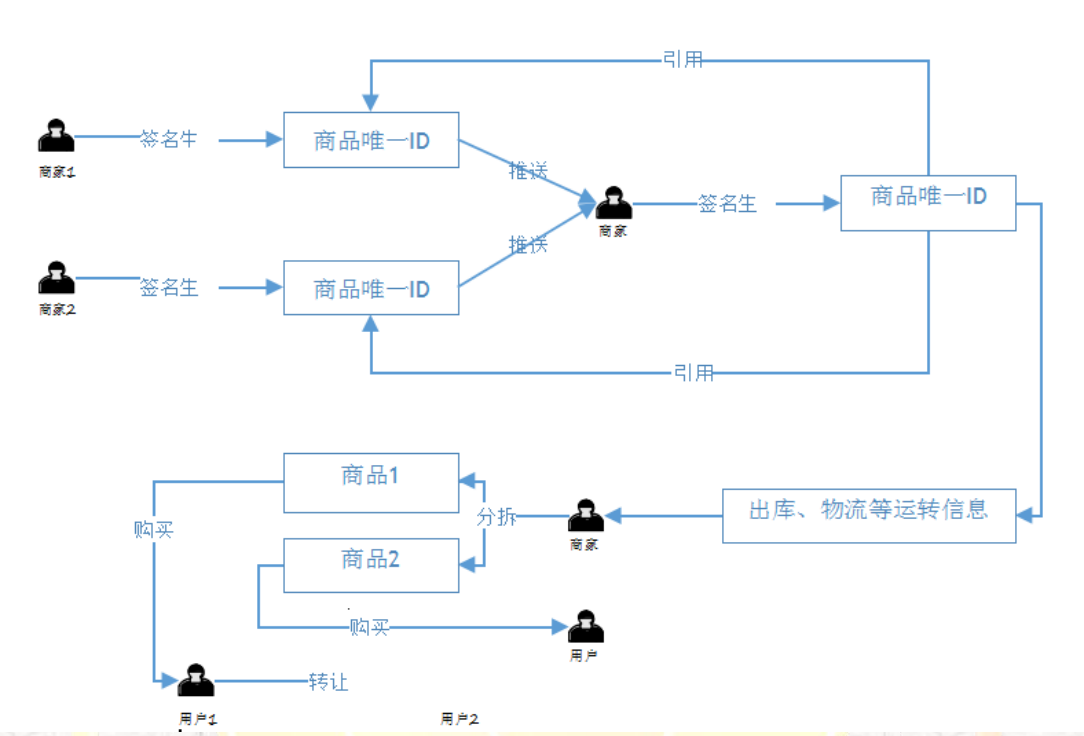
- market analysis

In recent years, the government is tracing the main push of the industry, but also the consumer concern about the market, at least hundreds of billions of scale. At present the market is basically blank, mainly some traditional security company doing the corresponding exploration, McKinnon chain traceability chain technology based on a block of memory more easily than the traditional anti-counterfeiting industry, on the basis of can the formation of industry supply chain, there are many companies on the Jin Nong chain traceability consulting.

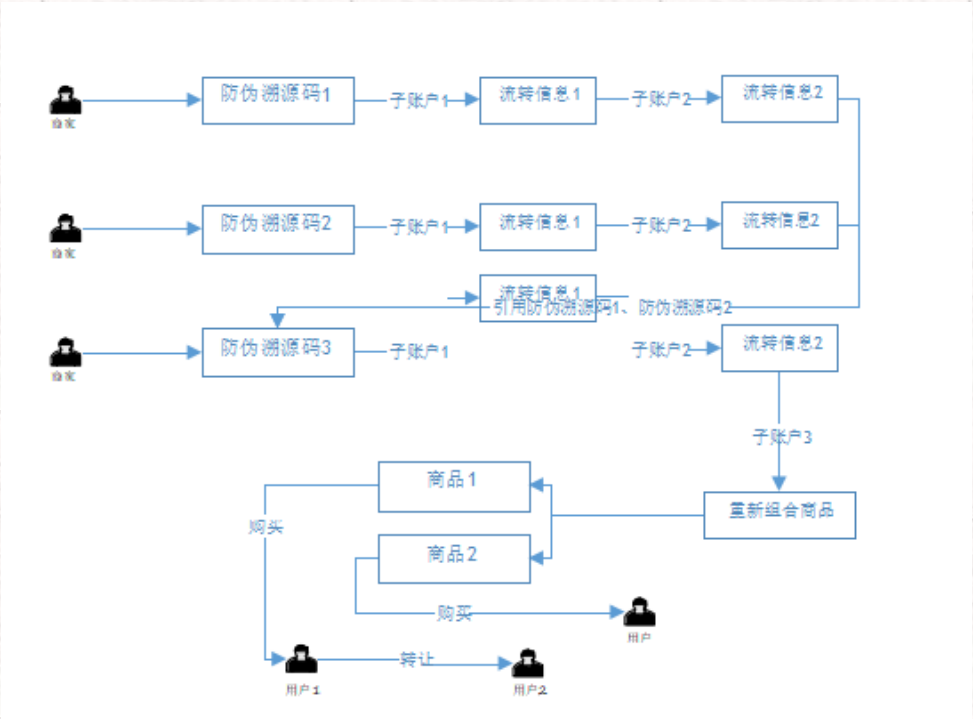
- McKinnon chain traceability interpretation

McKinnon chain team actively with industry experts to develop perfect

traceability traceability process. Divided into linear source, convergent divergent source, in the platform of traceability traceability; application of gold chain agricultural have perfect realization.




McKinnon chain traceability to application platform as the carrier, through the chain chain of information channels, the formation of traceability information maintenance sub account businesses the traceability information open and credible. Below is the source of Security Overview:




## 5.1.6Traceability applications

- Agricultural origin

Egg is a large daily demand for agricultural products, whether it is used only a few manufacturers tracing chicken farmers or raising tens of thousands of hens can use McKinnon chain. Some manufacturers in the agricultural chain gold certification, and produce traceability code, a code of each egg egg, record the date of production, and seal packing, shipping to dealers, distributors have nested traceability code, record the receipt and the date of receipt of the business generated egg. So every link has been recorded, using McKinnon chain WeChat small program until the user purchase code that is sweeping the query to the whole process. If there is a problem, can be accountability in these aspects. From then on, traceability this high-end technology can also be widely used in rural areas, city people are very easy

to know where their food comes from, and then have a preference, have positive effect on the entire industry.

The agricultural problem is related to the problem of food safety, the market is always beneficial to the people's livelihood event for food safety concerns, McKinnon chain how to achieve traceability in agriculture to the egg as an example.

Egg will be false? Many people used to think that now is unbelievable, a common phenomenon, and the egg demand is big, fake, expired egg egg seriously harm people's health, the market for the egg of desire is very strong. The gold chain can help small farmers to agricultural product traceability requirements to achieve large manufacturers can be convenient feeding, do one egg a consumer code. When buying simply scan the code, you can complete reproduction of egg's date of birth, place of birth, travel experience, even if consumers are willing to, can add the egg when eaten, an unknown to the public of the egg, can obtain the complete record of his life in a block of memory in the chain.

- Baby Food

Baby food safety is a top priority for parents worried, in the process of agricultural products traceability gold chain, infant food manufacturers in the gold chain of agricultural registered certification, from food raw materials, processing, logistics information and so the whole process of data record card, all the information that each pot of milk powder are clearly

all products, information security manufacturers data are in their own hands, fake manufacturers can not start, parents can rest assured to buy.

- automobile

An auto parts manufacturers want to know their parts sales, he first certified gold in the agricultural chain, then through the two-dimensional code traceability unique McKinnon chain for each part, and requests for cooperation or tokens to encourage each downstream link records of traceability information so that the automobile manufacturers can know their parts where are at any time, what problems, have a profound impact on the development strategy of the manufacturers.

- tobacco

A tobacco product manufacturers are serious counterfeiting, resulting in large economic losses, the factory every year for the security pay a large fee but with little success, one foot in mind, the traditional anti-counterfeiting measures were always easily copied, non professionals do not see the difference. After the gold chain manufacturers and agricultural cooperation, in each cigarette package printed on the unique security code, internal verification code, node chain security token alloy Agricultural Incentives, and this big promotion, by McKinnon chain client, consumers can easily query the authenticity of the information products, but also to get some reward, become loyal consumers of the brand, and even help the brand manufacturers not only greatly. Reduce the production cost, but

also improve the sales profit greatly enhance.

- Artwork

An artist Alice carefully completed a beautiful painting, and painting on the security code in cooperation with the agricultural chain of gold at the end of the volume. She put the painting sold to Bob, Bob to verify the security code, and enter the password provided by Alice, by Bob successfully verify and modify the password. A profiteer Carter asked people to secretly copy a copy, is originally want to be sold to Michel, Michel need to verify the authenticity, Carter Bob is unable to provide the password, so verification is not successful, Michel avoided a great loss.

### 5.1.7How to get the gold chain of agricultural businesses

McKinnon chain is a securitytraceability self-service integrated service platform for access to more businesses and users through the Jin Nong chain and government, pipeline cooperation, offline marketing team, to provide depth customized services for large businesses, combination, through a variety of online pipeline operators to promote special fast way to get a large number of businesses use McKinnon chain traceability of normal service. Combined with existing businesses with online and offline operations to push of marketing propaganda, training C end user security verification after C end user habits, the business of buying products, users become the gold chain of agricultural intangible binding.

### 5.1.8Concrete floor plan

Platform: has the prototype security traceability platform McKinnon chain, then senior function gradually improved security label management, batch export security labels, Cuanhuo analysis, such as the sale of goods, for the business end of convenient use of sustainable development.

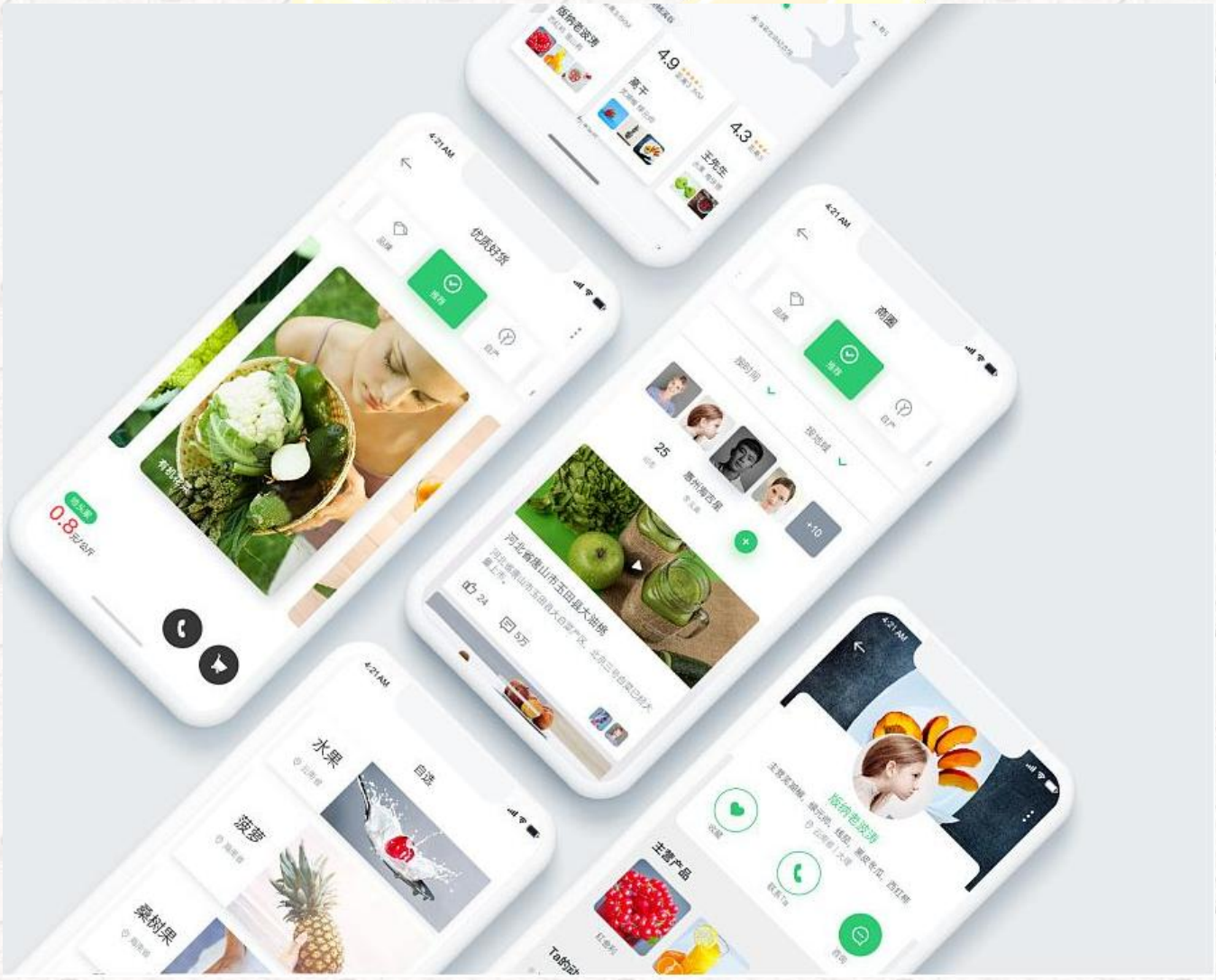
Process: the ground level, McKinnon chain has reached a cooperation and professional anti-counterfeit label printing factory, for businesses to provide a complete set of solutions. For the production line of their businesses, agricultural businesses through the gold chain docking hardware, so that the automation of production of large quantities of goods.

## 5.2McKinnon chain second applications: global memory block chain agricultural mobile mall

### 5.2.1Mall model

eccentrics chain of agricultural mobile shopping mall will be to the Beijing east of Beijing East Home and Beijing East Fresh, different from the Beijing-East docking merchants, eccentrics chain Mall will directly butt producers, farms, pastures, farms and so on; from the production of sowing, livestock cubs are born to start, through the golden farming chain access traceability technology, for any one thing to generate a unique code, and require the cooperation of producers will follow the eccentrics chain of memory block chain data chain standards, throughout the entire life cycle of the crop to monitor and input the chain, from the crop to germination,

fertilization, harvesting, packaging, transport, until the Mobile mall warehouse, the whole track record, so that consumers really buy the rest assured food, Any cooperative producer will sign the behavior standard contract with the operators of the Jin Nong Chain Mall and have legal effect, guarantee the authenticity of the data on the chain, at the same time the user can also monitor and complain, if the platform received a complaint information, can be traced back to the technology which is a link out of the question, to find the responsible person, Solve problems and protect the interests of consumers.



### 5.2.2McKinnon chain mall location

Jinnong Chain Mall will be the first P2C mobile mall. Producer To Customer means selling from the producer directly to the consumer through the mall app; for example, the products on Jingdong Fresh have already passed through many middlemen, and the profit of the producer is meager, most of them. Profits are stripped by middlemen, and the existence of middlemen has not improved the experience of consumers. Jinnong Chain Mall adheres to the decentralization and deintermediation of blockchains, removes all middlemen, and returns profits. Producers, the so-called civilians for the people, the producers have gained more profits, in order to better manage production, reduce hormones, induce hormones and other means, from the source to the consumer a safe food environment, Some producers now use some hormonal drugs with conscience. On the one hand, they are interested in smoldering and morality; on the other hand, they are forced to survive; we must face this problem and alleviate the root cause through P2C+ blockchain technology. Or to cure these problems, even if there are still black-hearted producers, we still have the first application of anti-counterfeiting traceability. His traceability is that problems can be traced back and the responsible person can't deny it;

### 5.2.3 Jinnong Chain Mall will be the first digital currency mall

The app can be paid not only by traditional payment methods such as Alipay WeChat, but also by digital currency, such as btc, eth, etc., of course, it

also supports the GACT of the Golden Farmer Chain. Since the GACT blockchain is confirmed to be a second-level, it is suitable for payment. Token.

In the future, Jinnong Chain Mall will gradually replace the existing business supply model.

# Completion time roadmap

| stage | time | content |
| --- | --- | --- |
| Private placement | Q3 2018 | GACT for private placement; GACT anti-counterfeiting traceability platform design and development; GACT |

| | | |
|---|---|---|
| | | Mall synchronous design and development; Gold Agriculture Chain main chain development |
| R&D internal test | Q4 2018 | Main chain beta release; app app beta |
| Online operation | Q1 2019 | The main chain test version is released; the anti-forgery traceability platform and GACT Mall are online. |
| Iteration | Q2 2019 | Continuous iterative product |

# team

## / Craig

Founder and CEO of Jinnong Chain. Experienced CEO and systems engineer. Responsible for product management, financial management, marketing and strategic technology projects, and other day-to-day business functions.

## / Benki Oak

Blockchain architects, Bitcoin and blockchain experts, focusing on mining and blockchain financial applications. Jinnong chain blockchain architecture and development.

## / Anthony

Demand analysts, focus on enterprise customer success and technology adoption. Work closely with product management to provide guidance on feature requirements.

## / Gavin Green

Back-end software engineers, mainly developing the bottom layer of the gold farm chain blockchain.

## / Jacob Decker

Full stack engineer, focusing on integration services, event management and exception management for the Golden Farmer chain

/ Jeremiah

Full-stack engineer, leader of the anti-counterfeiting traceability platform R&D department, responsible for the design and development of the Jinnong Chain anti-counterfeiting traceability platform architecture.

/ James Duxiang

Experienced mobile e-commerce APP product manager responsible for product design of Jinnong Chain mobile e-commerce platform.

/ Laura Pratt

Experienced Android R&D engineer responsible for the development of the Golden Farmers app.

/ Quincy Klein

Experienced IOS R&D engineer responsible for the development of the Golden Farmers App Apple.

## / Guo Hongcai (Bao Erye)

- Special Advisor to Jinnong Chain

Block angels and famous angel investors in the field of digital currency

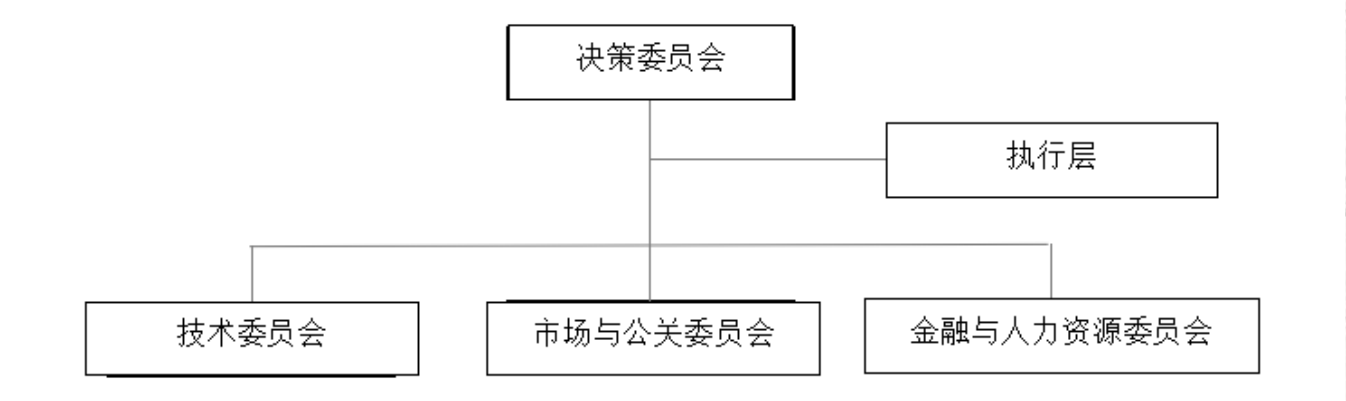
# Eight. Management structure

## 8.1 Foundation Structure

Within the Golden Farmers, we highly value the value of decentralization. We believe that this new architecture will create a transparent, shared, and coordinated environment in which participants can be encouraged or accept reasonable rewards and penalties. Therefore, Jinnong established the GoldAgriculturalChain Foundation in Hong Kong.

The Foundation is a non-profit organization that aims to coordinate the continued development and transparency of the Golden Farmers project. The Foundation manages the funds while supporting the development and operations teams at GoldAgriculturalChain. The foundation's "profit" will be retained by the institution and used for other activities. Foundation members will not be able to participate in the sharing of profits. The Foundation was established under the supervision of the Hong Kong Regional Corporate Law and the approval of Hong Kong (Accounting Law). The Foundation operates independently from government agencies.

In order to ensure the use of funds in open, fair and transparent use, and to increase the user base of Jinnong, attract more institutions, developers, players to join the ecosystem of Jinnong, while maximizing the development interests of Jinnong, the Foundation The organizational structure of a three-tier system has been set up as shown below:




## 8.2 Introduction to the internal organization of the Foundation

### 8.2.1 Decision Committee

The decision-making committee is the highest-level decision-making body of the Jinnong Foundation and makes the final decision. The committee is responsible for the preparation of strategic and annual plans, managing the budget, and voting on behalf of the Foundation for important issues related to the Golden Farmers Ecosphere.

### 8.2.2 Executive layer

The executive level is selected by the decision-making committee to manage and report on the day-to-day operations of the foundation, and is responsible for coordination between the subordinate committees and organizes decision-making meetings.

### 8.2.3 Technical Committee

The Technical Committee is responsible for the overall R&D work of the Foundation, as well as the design and development of basic technologies and related intellectual property. In addition, the technical committee will be responsible for actively communicating with community members and players

within the ecosystem and organizing research seminars.

### 8.2.4 Market and Public Relations Commission

The Market and Public Relations Committee is responsible for community building and public relations management. The committee is committed to introducing more collaborators for the Golden Farmer ecosystem through marketing activities and BD.

### 8.2.5 Finance and Human Resources Committee

The Finance and Human Resources Committee is responsible for auditing the financial operations of the Foundation, as well as recruitment and employee benefit management.

# IX. Risk statement

This document is for informational purposes only. The contents of this document are for informational purposes only and are a description of Gold Agricultural Chain's business and development plans and do not suggest any invitations or invitations to allow others to purchase stocks or securities.

The content of this document is not intended to be mandatory for participation in the ICO. Any behavior related to this white paper, including any copying of the white paper or sharing the white paper with others, will not be considered an participation in the ICO.

All supporters and foundations of the Gold Agricultural Chain project should read this white paper and the official website to understand the risks of blockchain technology in the Gold Agricultural Chain project. Any participant should be at the age required by law, have sufficient mental and ability to make a decision, and understand that the purchase of GAC coins from the Foundation is essentially not refundable, cancelled or compensated.

Regulators are scrutinizing the world's businesses and operations related to cryptocurrencies. In this regard, regulatory measures, investigations or actions may affect the business of Gold Agricultural Chain and even limit or prevent it from developing its business in the future. Anyone accepting the GAC must understand the business model of the Gold Agricultural Chain, and the white papers or terms and conditions may change or need to be modified as there are new regulatory and compliance requirements in any applicable law in any jurisdiction.

The Gold Agricultural Chain team will continue to ensure the authenticity and accuracy of the information in this white paper. Updates include, but are not limited to, ecosystem mechanisms, tokens and their mechanisms, and distribution of tokens. Some content can be adjusted in the new white paper. The team will post an updated white paper on the official website. Participants must get the latest white papers and adjust their expectations accordingly. The Gold Agricultural Chain or Foundation will not be liable for any loss because: i) the participants rely on the content of the old white

paper; ii) the information in the white paper is inaccurate; or iii) any behavior caused by the white paper.

As the official token of the Gold Agricultural Chain, GACT is an important tool for the efficient operation of the Gold Agricultural Chain ecosystem. GACT has no direct or indirect relationship with Gold Agricultural Chain's capital or income, nor does it grant any governance rights within the Gold Agricultural Chain; GACT is not a proof of ownership and does not represent control of the Gold Agricultural Chain, nor does it mean Control any assets or shares in the Gold Agricultural Chain or Gold Agricultural Chain ecosystem. GACT does not represent control of the management or decision making of the Gold Agricultural Chain.

Nor does it grant control over the purchaser's Gold Agricultural Chain network and governance.

As an encryption token used in the Gold Agricultural Chain ecosystem, GACT does not fall into any of the following categories: (a) any type of currency; (b) securities; (c) equity in legal entities; (d) stocks, bonds, notes, warrants , certificates, investment contracts or other things with similar rights.