



ProducePay Chain



Whitepaper

Summary

The ProducePay Chain is block-to-point network technology based on blockchain. It is jointly launched by the well-known agricultural payment application ProducePay and the mobile game company MachineZone. Currently, ProducePay has set off a storm of agricultural financial change in the United States and completed hundreds of millions of dollars in financing. MZ takes more than 1% of the global game market (including all platforms such as mainframes and PCs), and accounts for 4% of global mobile games. It ranks in the top 15 among all game companies. The good development prospects of the two have laid a good foundation for the smart farm to explore the global agricultural market. ProducePay and MachineZone complement each other, providing both resources and technologies in their respective fields, providing a guarantee for VPaly's diversified applications in the agricultural market. Since its establishment, the project has adhered to the principle of concept innovation, model innovation and technological innovation, and has taken root in China to serve the world. The ProducePay Chain will create an ecosystem + eco-chain platform system based on fruit farming.

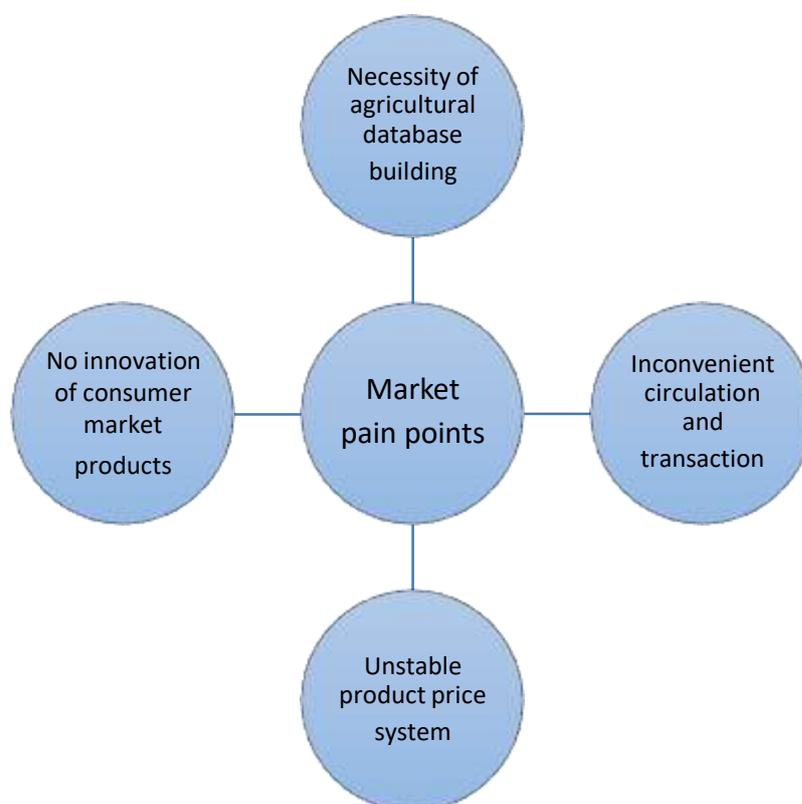
The ProducePay Chain is dominated by the real economy, supplemented by the sharing economy, and adopts a modern enterprise management system as a means to develop a diversified project mechanism for the purpose of sustaining a service-oriented economy. Adopt "line enterprise entity agriculture concept + online Internet O2O mode" in parallel, "real economy + share economy" and "field operation management + virtual entertainment management" to achieve the goal of sustainable and steady development of corporate health.

The future of blockchain + big data + eco-agriculture has brought a good opportunity for global agricultural development, bringing the traditional ecological agriculture field to life.

industry analysis

Market pain point analysis

China's agricultural economic growth has been in a steady improvement stage. The agricultural market has great potential. The value of the entire agricultural market is about 10 trillion yuan, equivalent to one-sixth of the annual GDP of 2014. It is a blue ocean market waiting to be developed. In addition, between 2013 and 2017, agricultural income growth has been maintained at more than 10%. This good development trend is stimulating the development of the agricultural economy. However, in the face of a huge market, there are still some pain points in the agricultural industry, mainly in the following aspects:



Agricultural market pain point

1) The necessity of building an agricultural industry database

At present, the agricultural industry is mostly extensive in production, and most farmers still use the most primitive farming methods. The output is small, the product is secondary, and the natural environment is greatly affected, which leads to the fatigue of the farmers. The extensive production mode directly hinders the development of agriculture. Although the B2B model has become a new direction for agricultural development, the introduction of the B2B model is still very slow due to financial problems and limited knowledge of farmers. The establishment of an international agricultural big data collection library is the primary method to solve this problem.

2) Globalization of agricultural transactions, but inconvenient circulation transactions, resulting in unnecessary procedures such as waste of resources and repeated execution

Due to the globalization of the agricultural market, frequent agricultural-based transactions have promoted the development of the industry. At the same time, due to the specificity of the agricultural industry, especially the seasons, freshness and preservation issues, the labeling of products has become difficult, as if they were in the goods. In the initial period of the transaction, the process of material exchange and the price fluctuations were extremely fluctuating. The system of repeated taxation and repeated inspection was not only cumbersome, but also caused waste of agricultural resources. The unification of general equivalence exchange system standards has become a reliable solution to such problems.

3) The product price system cannot be stabilized

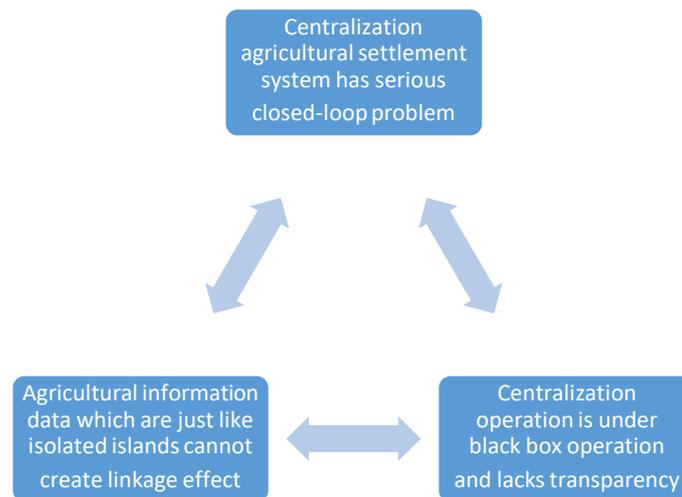
In the traditional agricultural industry operation mode, the information between the supply and demand sides is not smooth. In the period of large demand, the upstream crop growers are unable to keep up with the supply due to the restrictions of the conditions, resulting in the low-level sale of crops in the upstream market and the downstream market consumption. Crop prices have soared. In addition, in the sales process of agricultural products, the product layer flows, from the cultivation of agricultural products to the purchase of the final consumer, through the intermediate market, the secondary market, the physical retail store and other intermediate links, which not only increases the quality damage during the transshipment process. The risk also means that the multi-level markup in the middle will be paid by the consumers.

4) Consumer market products are single and no innovation all the year round

For the consumer market, there is a single market ill. With the development of social economy, the needs of residents are not only satisfied with the satisfaction of material conditions, but also for the solution of food and clothing. Instead, they are pursuing more health, ecology, spiritual pleasure and convenience. Although some enterprises are already seeking ecological agriculture, Due to technical issues, it is still unable to meet the diverse needs of a large consumer group.

Centralized settlement system has obvious drawbacks

As far as the current development is concerned, the agricultural industry is still in a huge centralization platform. This centralized settlement system has the following obvious drawbacks:



Centralized settlement system drawbacks

1) The closed-end system of centralized agricultural settlement system is serious

The agricultural industry has experienced 5,000 years of development. Due to the application of new technologies and the rigid demand of consumers, it is still in a high-speed development. However, it is undeniable that the current agricultural settlement system is a centralized trading platform. Disadvantages. For example, the impact of agricultural products affected by the seasons and the price fluctuations, and the asymmetry of upstream and downstream information in the agricultural industry will affect the trading experience of industrial stakeholders, thus hindering the vigorous development of the agricultural industry.

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In addition, the traditional agricultural communication platform, the social circle formed is closed and depends on a large centralized platform. Once the users in the communication platform leave the platform for some reason, they will face the risk of loss of communication circle and investment loss. . The centralized platform operates and all contents are closed. For all stakeholders, although they have the right to know, the transparency of information is extremely low, and it is prone to a situation of one word, which is not conducive to the further development of the industry.

2) Centralized operation into a black box, lack of publicity

The centralized operation of the agricultural settlement system, all content is closed, for the industry stakeholders, although they have the right to know, but the information transparency is extremely low, easy to appear a story. The biggest feature of the agricultural industry is that the level of middlemen's circulation has pushed up the price of the final product flowing to consumers. In the agricultural settlement trading platform, although there is relevant product information, it is limited to the basic introduction of agricultural products and the price tag, and the basic information about agricultural products cannot be verified. Since consumers can't achieve product traceability, this becomes a black box, and outsiders can't explore the operation, so it's unfair.

3) Agricultural information data presents an isolated island and cannot form a linkage effect

With the development of the Internet, the problem of information asymmetry can be gradually solved, but the problem of credit asymmetry cannot be solved. The centralization of the agricultural settlement system has led to the dispersal of data in isolated islands. These data cannot be combined and cannot be characterized by more comprehensive patterns of trading behavior. The decentralization of data also does not lead to a broad and comprehensive consumer behavior trajectory, and it is impossible to conduct precise marketing.

Solution

It can be seen from the above analysis that the prospects of the agricultural industry are broad, but the problems are also very prominent.

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In this context, the ProducePay Chain creates a global agro-ecological platform that can solve problems. The ProducePay Chain project is committed to creating a decentralized ecological platform by introducing blockchain technology, avoiding various drawbacks brought about by centralization, enhancing transaction security, protecting user privacy, enhancing data credibility, and eliminating the phenomenon of privately tampering or destroying relevant data. This establishes a secure and credible platform mechanism for users. By allowing users within the ecosystem to hold tokens based on blockchains and smart contracts, and to enjoy the property rights of the products and services provided in the platform, these tokens can be used not only to purchase agricultural products and fruits sold in the platform, but also to enjoy eco-tourism, pension, and other services. You can also use it like real money or even convert it into a legal currency. Through the continuous efforts of the ProducePay Chain, it can bring an unprecedented consumer experience to the end consumer.

When more consumers access the ProducePay Chain ecosystem platform, tokens will increase their value because of the increase in scarcity. In this way, an agricultural industry ecosystem with openness, fairness, democracy, the most user engagement and the most user-friendliness has emerged.

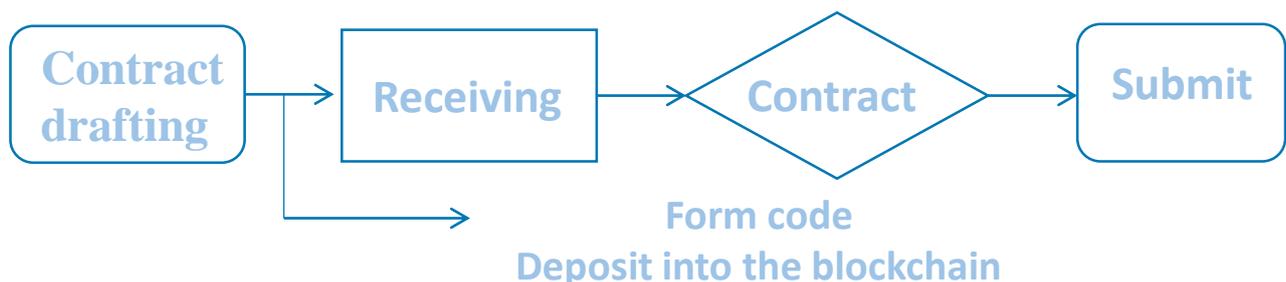
ProducePay Chain Introduction

Definition of contractual settlement

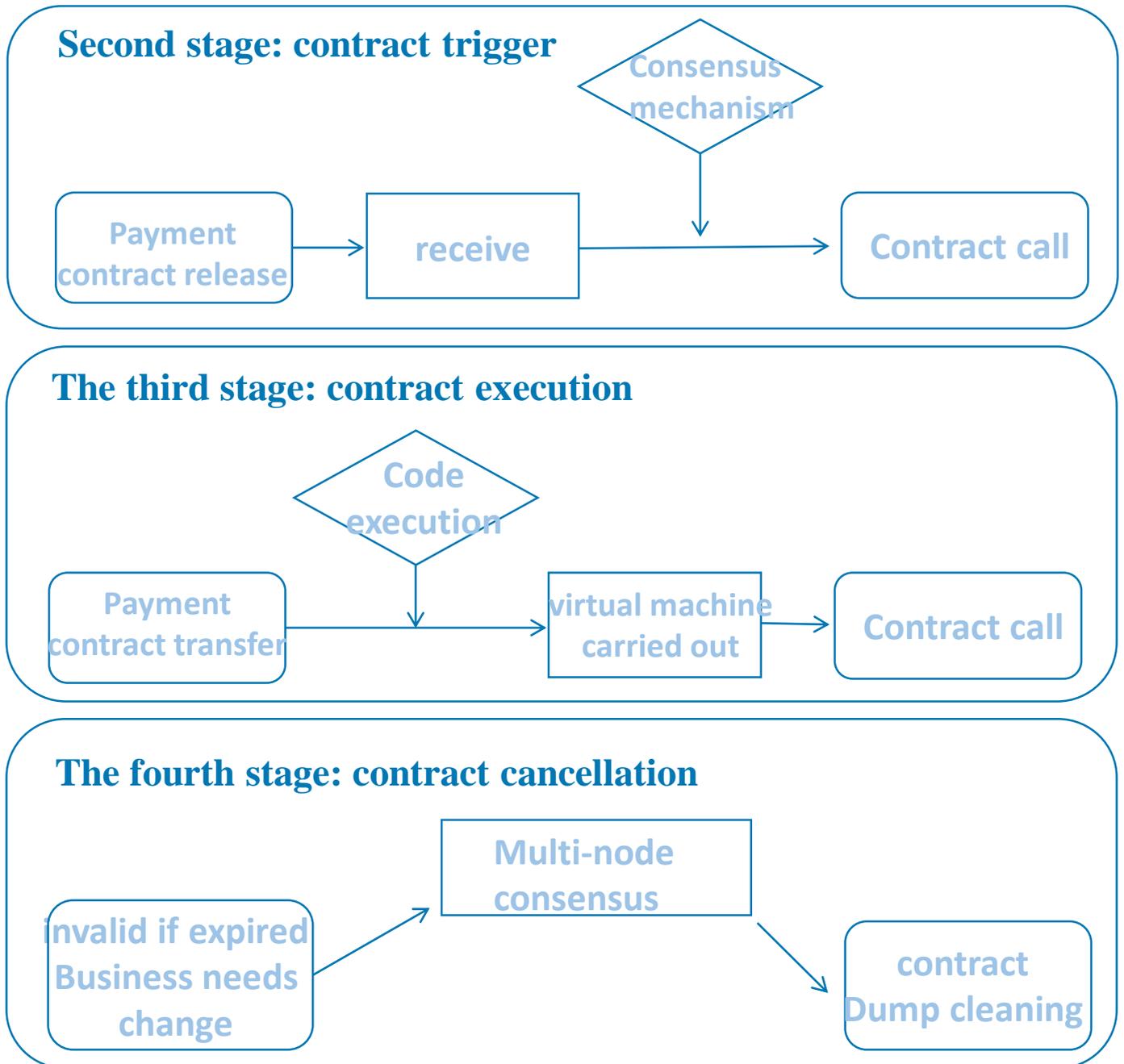
Contractual settlement is also called contractual payment. Contractual settlement is a set of settlement commitments based on smart contract technology and defined by digital form. All responsible parties involved in settlement must reach an agreement on the agreement and reach a consensus. The protocol is automatically executed under conditions. Smart contracts must have digital currency participation, whether it be digital currency or a digital key corresponding to legal tender, and assets must be networked.

The ProducePay Chain is not only the same as the blockchain-based settlement system such as Bitcoin, but also a blockchain-based e-commerce settlement contract system. The user and the user sign the contract by the private key to complete the transaction of the token. In fact, the ProducePay Chain can be used to sign any ProducePay Chain token contract. If the subject matter of the contract is a digital asset registered on the ProducePay Chain blockchain, then the ProducePay Chain can automatically perform programmatic delivery on the chain; if the contract object is an out-of-chain asset, the contract participant performs its own execution. Just fine. Even in the latter case, the ProducePay Chain eliminates the cumbersomeness of signing and keeping a large number of paper contracts, and digital signatures guarantee the non-repudiation of contracts. Through the contractual settlement mode, a sound and credible mechanism has been established to promote the revolutionary development of the agricultural industry.

The first stage: contract drafting



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Four stages of contractual settlement

The combination of ProducePay Chain and blockchain

There is ample “cooperative space” for ProducePay Chain and blockchain technology. When the ProducePay Chain encounters a blockchain, it will produce a complete, distributed, non-tamperable agricultural community that is maintained using a new encryption authentication technology and a decentralized consensus mechanism. The digital currency issued through the ProducePay Chain will All users are linked together for a long time.

1) From centralization to decentralization, point and point settlement

The real value of the blockchain is to promote consensus among the settlement center institutions in all walks of life, build alliances, and form a settlement ecosystem composed of multiple centers. Such an ecosystem highlights the functions of the center and greatly simplifies the operation of the centralized organization. cost.

2) From no trust to trust, the settlement trust crisis becomes a past tense

The de-trusting nature of the blockchain is based on the principle of mutual distrust. The operation of the whole system is open and transparent. Through the "signature" mechanism and the simple way of using the "minority to obey the majority", it can guarantee credit from the mechanism.

3) From insecurity to security, dispel user information concerns

First, user data is stored in a blockchain structure, which has self-checking properties and can be quickly discovered after tampering. Secondly, the data has the same backup on multiple nodes. Even if the data on a certain node is modified, it can be automatically recovered from other nodes, and the hacker's data tampering attack is eliminated from the mechanism. With blockchain technology, users can view their real pool of funds anytime, anywhere.

In summary, the use of blockchains for agricultural management is an innovative application of blockchain technology. The ProducePay Chain is a new blockchain distributed agro-ecosystem generated under this belief. The ProducePay Chain faces the whole world and tries to bring about qualitative changes to the agricultural industry, enabling residents and consumers to enjoy the convenient, comfortable and safe services brought by the ProducePay Chain, thus escorting human development.

ProducePay Chain innovation

1) Further decentralization

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In the blockchain based on the PoW consensus mechanism, third parties need to provide corresponding computing power to package all transactions, and third parties have the right to charge fees and choose to package, resulting in a large number of mines with centralized computing power. And the mining pool. In the blockchain industry, many types of attacks are directed at mines, the main reason being that the blockchain's computing power has been concentrated to some extent. However, there is no centralized mining in the DAG's network system, and mutual verification between users also enables a further decentralized system.

The PoC mechanism used in the ProducePay Chain verification process can also effectively balance the entire network. The simpler computing power is not enough to enable a user node to have absolute power in the entire network. Only by contributing to the network will it be The node user has more rewards, and his contribution is reflected in the network is the service and convenience to other users.

In the ProducePay Chain platform, blockchain technology enables the platform to present a sustainable, open and transparent, non-centralized, safe and reliable, open consensus collaborative ecosystem platform.

2) Smart contract interaction

"Chain-chain" has always been an important issue of blockchain development. The significance of "cross-chain" is to achieve interconnection and interoperability, so that various chain structures may be intertwined, so as to better realize their own network value. The DAG architecture of the ProducePay Chain is itself a mesh structure. The so-called "cross-chain" implementation is just a simple interaction between smart contracts. Moreover, our proposed timestamp and immediate parent are new interactive smart contracts. Important technical and logical guarantees.

The ProducePay Chain platform will provide users with a rich set of smart contract templates to facilitate the automatic distribution of incentiPP and incentiPP in the ProducePay Chain, as well as open ports, allowing everyone in the ecosystem to participate in the design and distribution of smart contract templates. And define the price or incentive conditions, and like the founding team, through the user's usage rate to obtain the corresponding token incentiPP, that is, the unmanned smart contract template will not be able to gain, or even the founding team itself.

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3) Increase transaction speed

On the ProducePay Chain settlement platform, digital assets issued by the ProducePay Chain can be directly used for transactions, enabling access across transactions, settlements, and different currencies and assets. All settlements are carried out in the ProducePay Chain system channel, while 24/7 settlement, real-time arrival, easy cash withdrawal and no hidden costs.

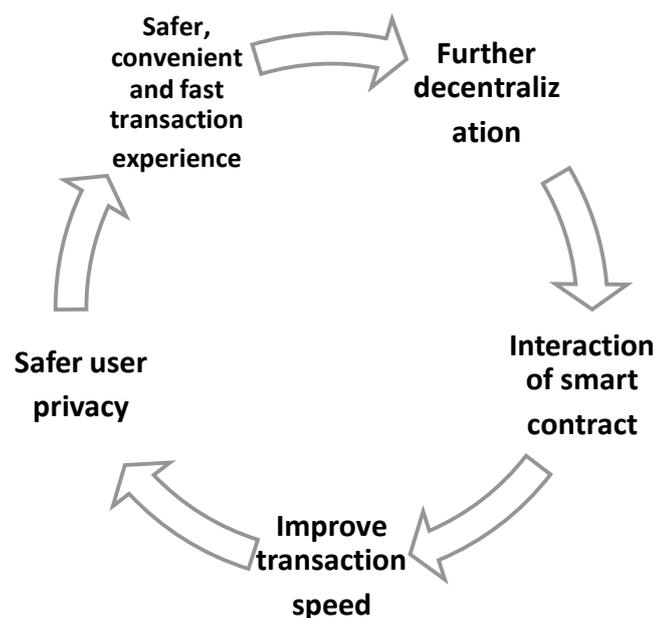
4) User privacy is more secure

The ProducePay Chain has a unique privacy protection encryption contract, which can realize complete and isolated access to the original data of privacy through secure multi-party computing, and realize fast and secure data sharing service. The data is stored on the decentralized resources through the blockchain encryption, authentication, authorization mechanism and other technologies, and the user's original data cannot be accessed by any user or individual.

5) Safer, more convenient and faster trading experience

The distributed exchanges in the ProducePay Chain provide a decentralized transaction, which avoids the loss of data and the loss caused by tampering, and can bring a safer and more convenient trading experience.

As the central currency of the whole ecology, the ProducePay Chain tokens link the transactions, exchanges and circulation channels with other currencies (other digital currencies, legal coins and digital assets). It is a lubricant that runs through the whole ecology and its value is immeasurable.



ProducePay Chain ecological structure

Business logic

The ProducePay Chain builds an open, equitable, and secure platform on the agricultural chain where all participants are able to create and share value on the ProducePay Chain. Everyone uses the ProducePay Chain platform to contribute data and resources to the ProducePay Chain and get the benefits they deserve.

Data is the cornerstone of the ProducePay Chain operation. Users upload real-time data to the ProducePay Chain cloud through sensors, intelligent hardware and physical industries. The data is securely encrypted in the ProducePay Chain through differential privacy technology to achieve storage, analysis and circulation.

Token is a proof of equity in a ProducePay Chain network. Users uploading and sharing data will receive ProducePay Chain tokens; purchase of agricultural products, fruit eco-tourism tours, and access to aged care services will require the consumption of ProducePay Chain tokens.

The core of the ProducePay Chain is “parallel enterprise entity agriculture concept + online Internet O2O mode” in parallel, “real economy + sharing economy” and “field operation management + virtual entertainment management” to achieve the healthy and steady development of the project.

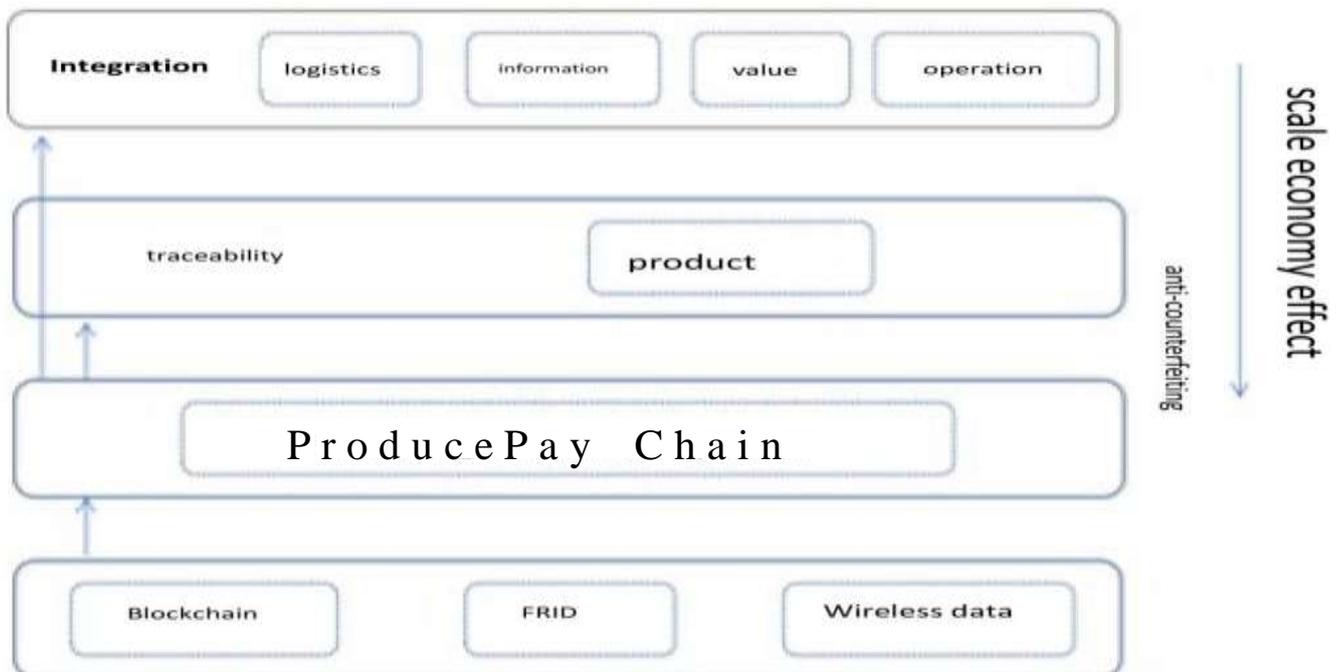
IoT system

Agricultural IOT refers to the construction of an Internet of Things covering the physical industry based on technologies such as blockchain technology, RFID, and wireless data communication. In this network, the physical industry and users can directly "communicate" without the intervention of the intermediate platform. The essence is to use the blockchain technology to trace the traceability of each product or service, the distributed storage of transaction data can not be falsified and permanently preserved, the autonomy of smart contracts, etc., to achieve automatic transaction of stakeholders and the interconnection and sharing of information.

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The agricultural material association is essentially the integration of the agricultural industrial chain, which helps to increase industrial concentration and expand the economies of scale. The agricultural property chain created by the ProducePay Chain refers to the offline real economy and sharing economy, the online Internet O2O model, and the sales of agricultural products, covering leisure, sightseeing, tourism, and aged care services. It promotes the organic links of the agricultural industrial chain, and then rationally allocates production factors between the industrial chain according to changes in social resources and market demand, and coordinates the proportional relationship between the industrial chain links. Synergistic effects and energy aggregation are generated to maximize the benefits of the industrial chain.

The integration of the agricultural industry chain emphasizes the multiple integration of logistics, information flow, value flow and business entities, and also focuses on the integration of industrial chains within the macroscopic, intra-regional and inter-regional regions, thereby expanding the scale of the agricultural industrial chain and promoting scale. The economic benefits. In the process of industrial chain integration, production resources are allocated from low-efficiency industries (planting, etc.) to high-efficiency industries (agricultural leisure and sightseeing), which increases industrial concentration and enhances the market competitiveness of enterprises.



Information digital storage

1) Data source

The data source of the ProducePay Chain is mainly from the user's upload and storage of each transaction.

On the one hand, the ProducePay Chain uses multivariate and machine learning models by means of emerging technologies such as Internet form and big data. This model continuously optimizes the evaluation results and makes the evaluation results dynamic by correlating different network behavior data of users. . By collecting a large amount of transaction behavior data in real time, the convenience and accuracy of platform services can be improved by means of blockchain and cloud computing.

On the other hand, users can upload personal data, form a personal asset database, and map the flow of funds and the process of asset appreciation to the public chain in the blockchain. Subsequently, these public and private information become the property of the user, and the query and retrieval can be invoked after the user's own consent.

2) Data security

Security is the key to ensuring the smooth operation of data in the network. The distributed storage based on blockchain makes the ProducePay Chain highly secure. The ProducePay Chain passes the data uploaded by the user and the data collected by the big data model. State encryption, differential privacy (DP) for data security protection, and discrete storage for data storage. These data are established by the nodes with maintenance functions in the entire system to establish a common maintenance and cannot be tampered with.

The ProducePay Chain binds agricultural data to blockchain protocols, authorizing trust authentication, security and management, allowing everyone to manage their own data, return control of the data to the users themselfPP, and let each data contributor Profits, consumers and businesses can share data, storage, computing power and other resources under the premise of security, equality and trust, and build an open data storage sharing platform. The data on the ProducePay Chain can only be accessed by the owner or the licensor, and the access rights of the data are determined by the smart contract set by the user.

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3) Data extraction

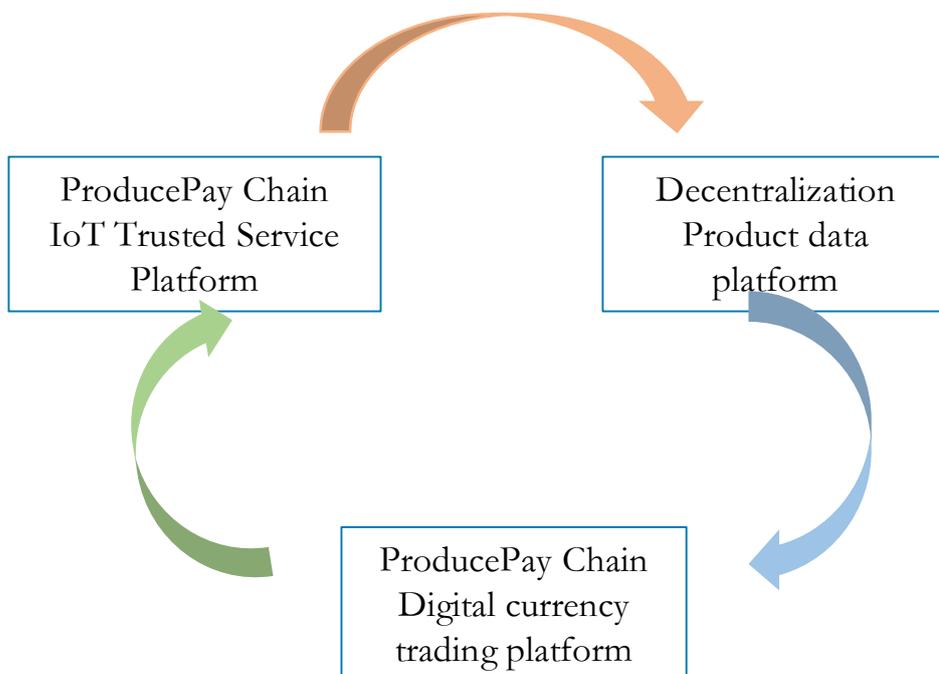
Data usage needs to meet the ProducePay Chain Certification Agreement and is authorized by the owner. All participants in the ProducePay Chain can become data extractors, including the average consumer, ProducePay, and alliance partners.

4) Information Bank

Consumer data is an extremely valuable resource that can be used by companies to develop products and services that cater to consumers' needs, to develop targeted marketing strategies, and other key uses of planting appropriate agricultural products based on consumer physiology. User-generated data can be securely stored in the information bank, and transactions can be made to obtain ProducePay Chain tokens or redeem corresponding products and services.

5) Super application

The super application is the core module of the ProducePay Chain, which mainly includes the following scenarios:



Scenario 1: Decentralized product data platform

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Based on the theory of token economy, combined with the decentralized and non-tamperable characteristics of the blockchain, the ProducePay Chain designed the application scenario to decentralized product data platform. Through the uploading of product data, it helps the ProducePay Chain to build for agriculture. The big data synthesis library can effectively solve the problem of industrial data islands by establishing a database. The product's winding needs to be reviewed by the ProducePay Chain management team, which strictly guarantees the quality of the products and services.

Scenario 2: ProducePay Chain Digital Currency Trading Platform

The ProducePay Chain builds its own digital currency trading platform, where users can make tokens for inPPTment and trading; the ProducePay Chain will also issue tokens on the ICO exchange, and consumers can also buy through the exchange. The application scenario created by the ProducePay Chain, a product data platform, can also be used for transactions between tokens and agricultural products and tourism pension services. In three ways, users can trade or consume services at any time, while buying virtual currency and holding virtual currency on the exchange. Perhaps like Bitcoin, ProducePay Chain tokens will add 20 million times in value over nine years. Because of the possibility of value-added, holding a ProducePay Chain token is also an inPPTment behavior, providing users with a stable source of income.

Scene 3: ProducePay Chain IoT Trusted Service Platform

The ProducePay Chain integrates and shares the agricultural information system, accelerates the elimination of ineffective product or service information, promotes the integration and sharing of supply chain information, enhances the support capacity of the unified industry supply and marketing network, and promotes access to a unified data sharing and exchange platform. An industry public data open website, perfecting the national agricultural industry data information sharing work, and developing agricultural industry information resources, constructing a sharing standard system of industrial information, and carrying out "Internet of Things + Agriculture + Entertainment + Consumer Services" to promote cross-Mutual recognition and sharing of agricultural products in regions, across time zones and across levels, to achieve the sharing and opening of agricultural big data, and to avoid untrustworthiness in the supply chain by sharing data. The ProducePay Chain will gradually build up the "Internet of Things" -style industrial chain by promoting the continuous improvement of the agricultural industry chain.

ProducePay Chain application and value

Core innovation

1) Industrial structure

Agricultural products and fruit cultivation, valuable Chinese herbal medicine planting industry, animal husbandry and aquaculture industry, ecological agriculture sightseeing tourism industry, medium and high-end pension industry.

2) Management core

Focusing on the cultivation of agricultural products and fruits, with the continuous improvement of agricultural sightseeing and tourism as the highlight, the creation of the old-age industry as a follow-up guarantee and the purpose of rural revitalization.

3) Operational mechanism innovation

Taking the real economy as the leading factor, supplementing the sharing economy, and adopting the modern enterprise management system as a means to develop a diversified mechanism for the purpose of continuing a service-oriented economy. Adopting the "offline enterprise entity agriculture concept + online Internet O2O model" in parallel, "real economy + sharing economy" and "field operation management + virtual entertainment management" combined to achieve sustained and steady development of corporate health.

4) Strategic layout innovation

The ProducePay Chain has set up the first professional cooperative of land transfer in Chongqing, and applied for the pilot project of the relevant functional departments of Chongqing. Through the land transfer, 15,000 mu of land use rights were obtained, and the organization form of "company + base + farmer" was adopted. To build a fruit base, implement a decentralized joint operation and focus on the "unified technical standards, unified product quality, unified sales channels, unified distribution of benefits" intensive industrial chain business model, based on base demonstration, outside the radiation base, to build tourism in a planned layout In the industry, the highlights of tourism and tourism are highlighted by the variety layout, and the old-age industry is built with economic support.

ProducePay Chain platform technical characteristics

Distributed control structure

The blockchain of the ProducePay Chain constructs a distributed structure system based on the open source and decentralized protocols determined by the system, so that the value exchanged information is sent to the whole network through distributed dissemination, and information is determined through distributed accounting. The data content is stamped to generate block data, and then distributed to each node through distributed propagation to implement distributed storage. Specifically, the distributed structure is reflected in three aspects:

1) Distributed accounting

User behavior trajectory and transaction data on the ProducePay Chain platform are accounted for by multiple nodes and their legality is verified. Legitimate transactions are recorded in all users' books, maximally avoiding moral hazard and not It is prone to errors.

2) Distributed communication

Each new transaction in the blockchain is distributed in a distributed structure. According to the P2P network layer protocol, messages are sent directly to all other nodes in the network by the delay node.

3) Distributed storage

Let all the data in the database be stored in all the computer nodes of the system and update in real time. The completely decentralized structure setting enables data to be recorded in real time and updated in every network node participating in the data storage, which greatly improPP the security of the database.

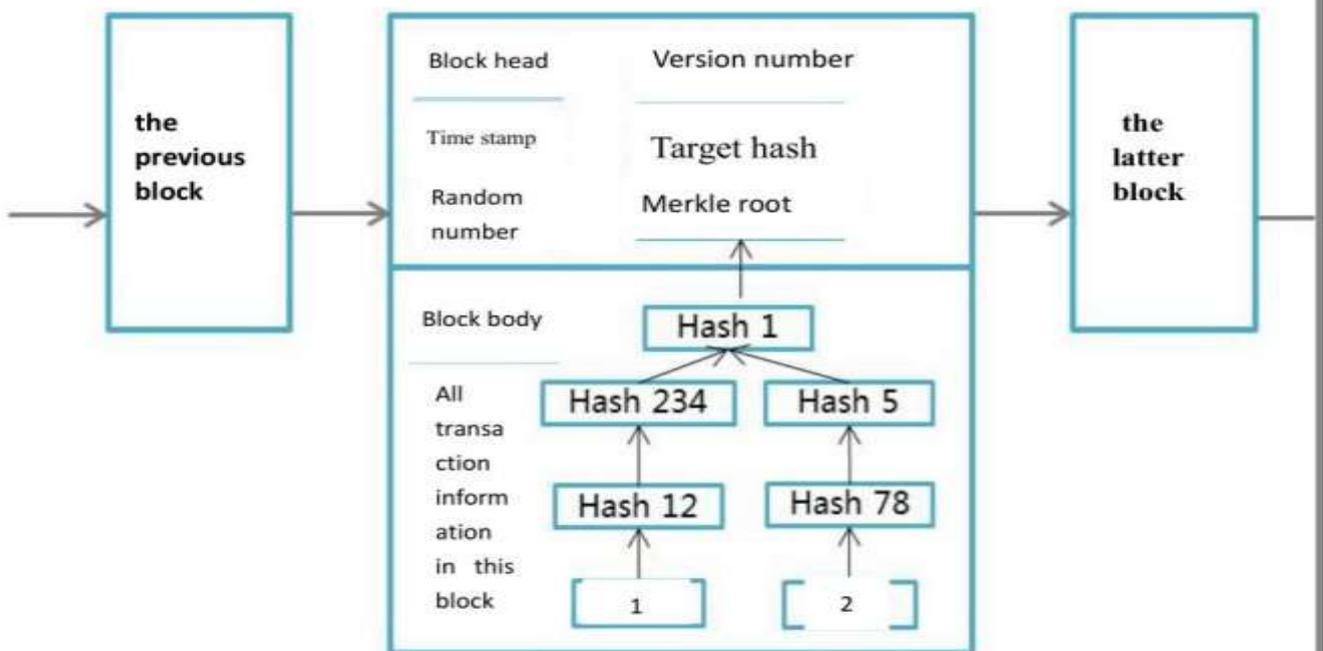
In summary, through the three "distributions" of distributed accounting, distributed communication, and distributed storage, the data storage, transaction verification, and information transmission processes in the system are all decentralized. The payment is made using a distributed exchange, and the buyer pending order and the seller pending order are cached in the blockchain.

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When the consensus node bills, it automatically triggers the purchase and sale pending orders, distributes the bills to the network distributedly, and completes the transaction after more than 51% of the nodes pass the verification. The advantage of distributed matching transaction payment is that each transaction is well documented, and each transaction is confirmed by the widest number of nodes, which increases the security of transaction records and increases the difficulty for hackers to manipulate trading disks.

Data block structure

The blockchain is a block that is grouped together in a chain. The blockchain is a transaction database shared by all nodes in the system. These nodes participate in the network of the blockchain based on the value exchange protocol. The block header of each block contains the transaction information compression value of the previous block, which makes the long connection from the creation block (the first block) to the current block. Since the current block is not generated if the HASH function value of the previous block is not known, each block must follow the previous block in chronological order. All such blocks contain the structure referenced by the previous block, allowing the existing set of blocks to form a long chain of data. The data storage structure of "block + chain" is shown in the figure



Data block structure

Consensus mechanism

The value anchor of the blockchain lies in the consumption and output of the chain itself. When the blockchain selects PoW (Power-of-Work) as the consensus mechanism, the computational power consumed by each block will become the cornerstone of its value. In addition, in the ProducePay Chain, each node has the ability to solve real-world environmental problems, and can provide products and services to the agricultural industry. If each node of the ProducePay Chain is able to participate in the settlement of shared work, the entire blockchain has a realistic output value. Therefore, in order to ensure the maximum value of the blockchain itself, the ProducePay Chain will choose the PoW-based consensus mechanism by default. The core meaning of PoW is: the greater the computing power, the greater the probability of digging into blocks, and the greater the weight of maintaining blockchain security.

However, because PoW has obvious defects such as slow transaction speed, the consensus mechanism in the subsequent data link in the platform will be designed to be modular. It can be configured through the control chain parameters, and can dynamically apply the public and private links. Different application scenarios. The platform will select the appropriate consensus mechanism for the application scenarios and transactions of the data link itself to ensure that each distributed node obtains data consistency through the algorithm.

Secure encryption algorithm

The ProducePay Chain selects an encryption mechanism that conforms to domestic and international standards, encrypts agricultural data, and transaction data and transaction information between users can be viewed only by both parties to the transaction and users with corresponding rights.

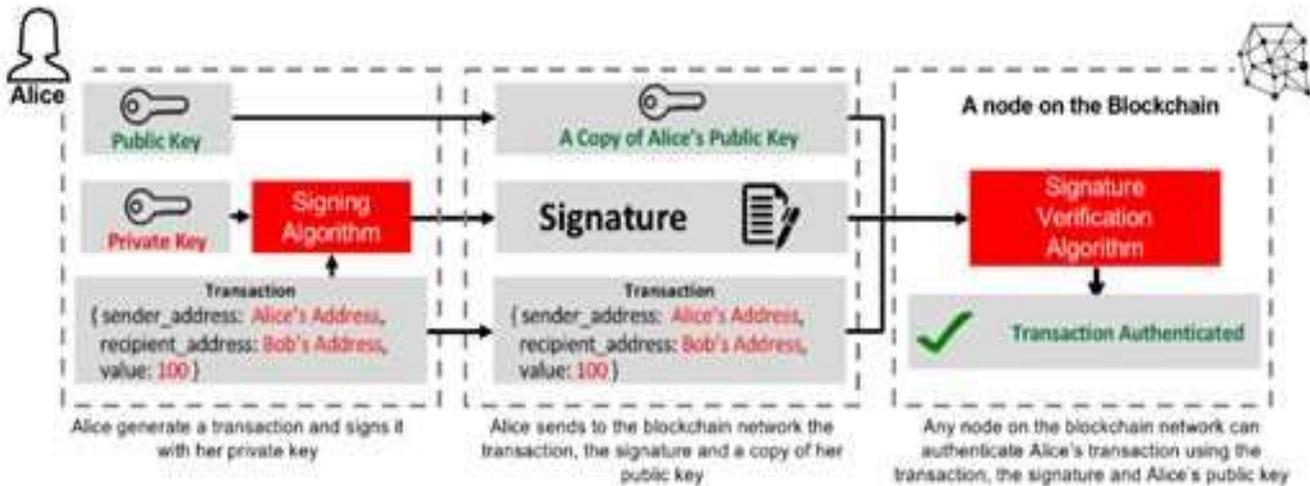
1) Symmetric encryption

Symmetric encryption is the fastest and simplest way to encrypt. The same key (secret key) is used for encryption and decryption. Symmetric encryption typically uses a relatively small key, typically less than 256 bits. The size of the key takes care of both security and efficiency, and is a trade-off.

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2) Asymmetric encryption

Asymmetric encryption provides a very secure method for encrypting and decrypting data. It uses a pair of keys, a public key and a private key. The private key can only be safely kept by one party and cannot be leaked, and the public key can be sent to anyone who requests it. Asymmetric encryption uses one of the pair of keys to encrypt, while decryption requires another key.



Authentication Process for Transactions on the Blockchain

Asymmetric encryption

3) Private key

Non-public, is a 256-bit random number that is kept by the user and is not open to the public. The private key is usually generated randomly by the system. It is the only proof of the user account usage rights and the ownership of the assets in the account. The effective length is large enough, so it is impossible to be compromised and there is no security risk.

4) Public key

It can be made public, and each private key has a public key that matches it. The ECC public key can be generated by a private key through a one-way, deterministic algorithm. Currently commonly used schemes include: secp256r1 (international standard), secp256k1 (bitcoin standard), and SM2 (Chinese national standard). The ProducePay Chain control chain and initial data chain selection secp256r1 as a key scheme.

5) Hash algorithm

Usually the hash algorithm refers to the secure hash algorithm SHA, which is a series of cryptographic hash functions designed by the National Security Agency and published by the National Institute of Standards and Technology (NIST), including SHA-1, SHA-224, and SHA. Variants such as -256, SHA-384, and SHA-512. Bitcoin currently uses the SHA-256 algorithm. Except for PoW, the rest of the hash algorithm refers to SHA-256.

Encryption mechanism

1) ECDSA Encryption Algorithms

Based on security considerations, in block chain system, no transaction broadcasting in the network and block need to be processed by signature and signature verification. ECDSA, the barrel-circle curve digital signature algorithm, is the most mature and widely used digital signature algorithm in the industry at present. However, the pure software implementation method can only achieve thousands of times per second on the general computer platform, far from meeting the performance requirements. BOE accelerates the embedded ECDSA module, which will greatly improve the speed of signature verification.

2) Random Number Generator

In order to protect the reliability of the encryption channel, the hardware random number generator is used to make the random seeds of the key exchange completely unpredictable.

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3) Data shading

In the case of high TPS, the data transmission between nodes is huge, which is far beyond the endurance of the current network infrastructure, resulting in abnormally slow data synchronization. BOE acceleration engine adopts block data fragmentation broadcasting processing technology. Each block fragmentation contains the end block head. It is convenient to broadcast the newly generated blocks to all nodes as soon as possible, so as to achieve fast convergence of block chains.

4) Network Performance

One of the conditions for a ProducePay network to become a high-contribution node is to provide network bandwidth for the system. BOE technology realizes the flow statistics of node connection based on hardware. Consensus algorithm can calculate the network bandwidth data provided by a node through BOE technology.

5) ConcurrentIn

Tthe ProducePay network, the BOE acceleration engine can achieve large concurrent connections, while maintaining more than 10,000 TCP sessions and processing 10,000 sessions in parallel, which will greatly reduce the level of distributed network. The dedicated parallel processing hardware will take over the serial processing capabilities of traditional software, such as transaction data broadcasting, unauthenticated block full gateway closure, transaction confirmation broadcasting, etc. Its response speed to sessions and the number of sessions maintained are more than 100 times as fast by computing the performance of platform node processors.

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P2P protocol

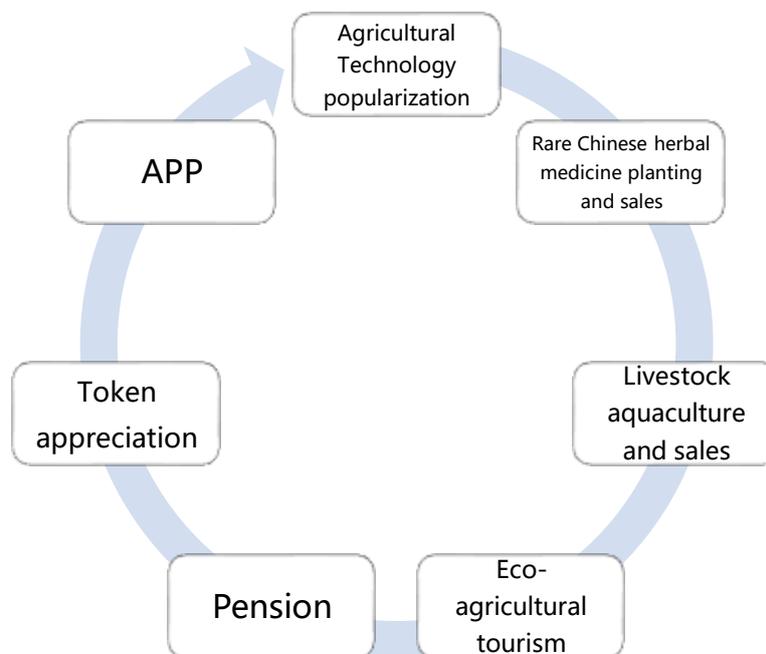
On the ProducePay Chain, each node (client) uses the P2P protocol for message broadcast interaction. For the data block of the ProducePay Chain, the P2P protocol used is the standard cryptocurrency protocol. The core feature of the protocol is the introduction of the "ghost" protocol. The control block of the ProducePay Chain uses the standard P2P protocol and does not support the "ghost" protocol.

The client of the ProducePay Chain usually works in a guardian state. In this state, the tasks performed by the client include: (1) invoking the network daemon to maintain the connection and periodically sending messages; (2) obtaining the current block information and associated block information; (3) obtaining industrial manufacturing parameters, and Manufacturing parameters are analyzed according to a standard model to determine whether to submit updated parameters.

ProducePay Chain Token system

Settlement currency

In the ecosystem platform we designed, users with ProducePay Chain tokens have the ownership and disposal rights of tokens, and can dispose of tokens arbitrarily within the scope of the law. When a user obtains some products or services by disposing of tokens in the platform, the user receives the ownership and use rights of the services received or purchased. The specific product services are shown below:



ProducePay Chain token settlement system

Bonus

The core concept of Token economic design is to intensify the transaction costs dissipated in the original system, and use technology to spread the proceeds to each participant in the system, so that the overall friction of the system is continuously declining, so that the token is inherent. The value is rising.

ProducePay Chain development plan

Initial planning: entering the Chinese market, platform construction

The ProducePay Chain targets the global international market, but China, as the largest developing country and the most populous country, has great demand for agricultural products. Therefore, the project was initially operated in China.

Date: 2019 - 2022 (3 years of basics)

1) ProducePay Chain entity docking initial development planning

1. Establish a green cash crop base

About 2,600 mu of dry land and sloping land are planned as green planting bases. It is mainly planted with green fruits, green dried fruit, and high-quality medicinal materials. It is equipped with high-end seedlings and makes full use of the biogas and organic fertilizer produced by the farms in the liPPtock and poultry project.

2. Establish high-quality Chinese herbal medicine planting base

Plan the future planting development scale to adopt the “company + farmer” model, the planting area is more than 5,000 mu, the total production value is more than 1 billion yuan, and the planting scale can reach 5,000 mu or more in 2-3 years. The long-term, long-term and effective management policy is to expand the scale by withdrawing funds from short-term medicinal materials and external sales of nursery and animal husbandry.

3. Establish liPPtock and poultry ecological breeding base

On the basis of the existing breeding projects, expand the production scale of breeding pigs and finishing pigs, adopt the production and operation mode of the company + base + farmers, select the best location and conditional farming (breeding community), and farmers participate in liPPtock and poultry farming. Pig breeding, by 2022, strive to achieve the annual production of 100,000 pigs without pollution, a new free-range cattle farm can accommodate more than 2,000 head stocking, and two lazy rabbit breeding bases, more than 10,000 annual slaughter and so on The liPPtock and poultry will gradually expand and be built into a commodity-free liPPtock and poultry breeding base without pollution.

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4. Establish a rural experiential tourism base

Using the “green, environmentally friendly, original ecological” rural natural landscape formed by ecological aquaculture and green planting, the development of “rural farming experience camp” large rural experience tourism project

5. Can produce better social benefits

It is estimated that the number of people affected by the labor force will be tens of thousands of people, and the number of villagers will exceed 10,000 yuan. At the same time, it has greatly stimulated the development of other related industries.

2) Early implementation of the ProducePay Chain platform

We use a big data, blockchain model to build a world-class distributed digital currency ecosystem and establish a convenient, comfortable and secure agricultural consumption platform. Based on data mining analysis and machine learning technology, the ProducePay Chain plan combines consumers and enterprises to complete transactions quickly, helping consumers to enjoy more convenient and safer farming and animal husbandry products, covering ecological sightseeing and pensions. Exquisite service.

The focus of our preliminary work is to complete the sales of the ProducePay Chain platform and the sales of Token tokens. Therefore, it is necessary to promote the application of the ProducePay Chain platform, such as using Baidu and WeChat promotion to expand the influence of the ProducePay Chain; The trading system continues to be promoted; explores the initiation of artificial intelligence plans in platforms and subsystems, and develops preliminary versions of artificial intelligence by selecting and selecting classes.

Medium-term planning: radiation nationwide

Date: 2022 - 2026 (5 years see results)

The basic idea: Guided by the party's "19th National Spirit", make full use of the resources of the "three rural" resources, promote the agricultural ecological recycling economy, and achieve rural economic development and sustainable economic development.

Development planning: With the support of fruits and agricultural products, we will do a good job in ecological agriculture, animal husbandry, development of ecological agriculture, tourism and tourism, and build a pension industry.

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By connecting foreign virtual currency, blockchain technology is used to create a P2P electronic cash system, which is used to realize a digital currency system that can be decentralized and ensure transaction traceability, and finally push the company to the international market and build an international market. A listed company that achieves a diversified enterprise that promotes entity and virtual currency point-to-point currency-to-coin transactions and capital markets.

Future planning: globalization

Date: 2026 - 2033 (8 years to reach the target)

The goal of the ProducePay Chain is to use the Chinese market as a starting point, open up global markets, build global high-quality agricultural industry resource sharing, and continue to integrate the global agricultural industry chain with big data as the foundation.

In the future, we will not only develop the physical industry of our enterprise, but we will also recruit partners through the industry alliance to realize the establishment of a global ecosystem of ProducePay Chain. Through hard work, we will connect more than 1,000 companies in the world into the industry alliance, bringing the most convenient and safe products and services to consumers around the world, and increasing the viscosity of global users to the ecosystem. In addition, the ProducePay Chain will access multiple types of applications, organize multi-language platforms, and carry out global industrial eco-cooperation to create a trillion-level global ecosystem.

ProducePay Chain business profit model

The ProducePay Chain is a win-win ecosystem based on the blockchain and able to penetrate the entire agricultural industry. Under the new business model, it will inspire greater economic potential and promote technological advancement, cooperation and mutual benefit for the entire industry.

Under the new business model, the nodes in each link of the ProducePay Chain will maximize economic interests, squeeze out the consumption of traditional agricultural industry redundancy, and establish a more efficient, fairer and more stable profit model.

User

The user is the core of the ProducePay Chain and the life of the ProducePay Chain. The ProducePay Chain adheres to the vision of “serving the people and meeting the needs of the people's liPP and spirits” . With the existence of users, the ProducePay Chain platform can be truly driven, thus making the whole platform active.

Enterprise

NO.1 ProducePay Agricultural Company is located in Los Angeles, California. It is a well-known agricultural software company that provides online trading and financial services to farmers and agricultural distributors. Its operational concept has completely solved the problem of farmers' difficulty in returning funds. Usually, after the farmer sells the agricultural product to the dealer, it will take a long time to receive the payment, which increases the financial cost and financial risk of the farmer. Produce Pay provides a two-day return service for its member farmers. In addition, Produce Pay provides farmers with sales forecasts, sales and matching dealers. For dealer users, Produce Pay not only helps dealers in advance. Prepaid payment and help dealers match more sources. Currently, ProducePay has completed hundreds of millions of dollars in financing, and its good development prospects lay a good foundation for smart farms to explore the global agricultural market.

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NO.2 MachineZone Mobile Games was founded in 2008 (formerly Addmired). MZ takes more than 1% of the global game market (including all platforms such as mainframes and PCs), and accounts for 4% of global mobile games. It will be ranked in the top 15 of all game companies' revenues. Challenge the status of traditional EA, Activision Blizzard and other old rivers and lakes. MachineZone has become the number one mobile game company in the US with only two products, focusing on Real-Time technology, and launching its own real-time technology platform to further apply its technical capabilities accumulated in large online games to other areas. Its core philosophy: With proven game prototypes, it is quickly realized through continuous skinning and its ability to accumulate in traffic operations. MachineZone's goal is not to create extraordinary game products, but to use the financial industry to manage game products. MachineZone's operational philosophy is fully integrated into the smart farm, which provides a number of gaming features for entertainment + wealth management.

Raw material supply

The supply of raw materials needs to be continuously optimized. The ProducePay Chain will attract more raw materials to enter the platform by providing token rewards, thereby gaining economies of scale, improving bargaining power, reducing cost and spending more money for ProducePay Chains. Platform design, development of smart applications, etc.

Government agricultural management department

Agriculture involPP people's livelihood and it is impossible to avoid the role of the government. The transparent nature of the ProducePay Chain can help the government's agricultural management departments to better manage the agricultural industry, monitor agricultural big data, and make rapid and flexible allocation and management of agricultural resources.

ProducePay Chain team composition

Operating agency

To ensure the openness and transparency of ProducePay Chain projects, the ProducePay Chain is managed through the establishment of the highest decision-making body, the decision-making committee. The decision committee consists of a business committee, a technical committee, a comprehensive committee, and a community development committee. The management organization will be composed of developers and functional committees. The members of the decision-making committee are elected for a term of two years. The first decision-making committee members are composed of core team members, blockchain industry celebrities, legal experts and early inPPTors. Some members of the subsequent decision-making committee are elected by the community.

Operational supervision

In order to ensure efficient, transparent and healthy operation of the platform, it is necessary to supervise the activities of the entire platform. Due to the application of blockchain technology, all kinds of data generated by the platform will be recorded and cannot be tampered with. Therefore, on the one hand, the ProducePay Chain platform can self-regulate and independently trust each other; on the other hand, the platform sets up the ProducePay Chain autonomous committee, The InPPTor Community Conference is responsible for the functions of managing and supervising it, the dual regulatory assurance platform, and the interests of platform stakeholders. The Autonomous Committee changes its annual number according to the number of tokens held and the age of the currency.

In addition, the Board of Directors shall set up audit, legal, financial and other consultants to conduct regular and irregular information disclosure in the form of reports and news. The contact information of the principal responsible person of the board must be open and accept the liaison and supervision of all parties. In addition, through the two-way channel of supervision and reporting, the Board welcomes users, users and inPPTors of the Renewable Resources Collaboration Platform to participate in management and supervision of operations, and report problems, major crises, fraud, fraud and other issues in the operation of the platform. At the same time, it is necessary to ensure the information protection of the informant.

Operations team



Operation team structure

The functions of the decision-making committee include hiring and dismissing the executive responsible person and the heads of various functional departments, making important decisions, holding emergency meetings, etc., and the members of the decision-making members are elected for two years.

The members of the first ProducePay Chain decision-making committee have rich industry experience in the blockchain field or large flow field, which is briefly introduced as follows:

1) Decision Committee

After the expiration of the decision-making committee, all the members of the community will vote according to the number of credits and the age of the ProducePay Chain held by the decision-making committee, and select the core members of the odd-numbered decision-making committee with no more than 9 and the selected core members. Important and urgent decisions will be made on behalf of the ProducePay Chain community and will require credit inPPtignations and public pay during the tenure.

2) Executive person in charge

The executive person in charge is elected by the decision-making committee, responsible for the day-to-day operation and management of the ProducePay Chain community, the coordination of the work of the subordinate committees, and the chairmanship of the decision-making committee. The executive responsible person regularly reports to the decision committee on the progress of the work.

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3) Business Committee

The business committee is responsible for the overall design of the community and the introduction of relevant partners.

4) Technical Committee

The technical committee consists of core developers responsible for the underlying technology development and review, product development and auditing. The technical committee regularly holds project tracking meetings to communicate needs and project progress. Technical committee members need to understand community dynamics and hotspots, communicate with business participants and ProducePay Chain owners in the community, and hold technical exchanges from time to time.

5) Integrated Affairs Committee

The General Affairs Committee is responsible for the use and review of project fundraising, developer compensation management, daily operating expenses and audits.

6) Community Development Committee

The goal of the Community Development Committee is to serve the community, to promote the promotion of ProducePay Chain products and services, and to promote and promote open source projects. The committee is responsible for the publication of all community announcements and cooperation with the media.

7) Financial management of the ProducePay Chain

The ProducePay Chain Decision Council is committed to using all of the raised tokens for community development and construction.

8) Audit of the ProducePay Chain

Due to the particularity of the ProducePay Chain tokens, it is virtually impossible for existing companies and institutions of various forms to regulate under the existing system. In order to ensure the governance of the ProducePay Chain platform and the openness and transparency of the use of tokens, the ProducePay Chain decision-making committee will employ a professional auditing agency to conduct audits.

ProducePay Chain Distribution Plan

Notarized Economic Distribution Scheme

Seed Sale Allocation 20% of tokens

Seed Sale Token Price \$0.01

Seed Sale Date Completion 31/01/2018

Amount Raised Seed Sale \$1,800,000

Strategic Sale Allocation 19.49% of tokens

Strategic Sale Token Price \$0.02

Strategic Sale Date Completion 31/05/2018

Amount Raised Strategic Sale \$3,600,000

Private Sale Allocation 8.36% of tokens

Private Sale Token Price \$0.02

Private Sale Date Completion 31/07/2018

Amount Raised Private Sale \$1,500,000

Public Sale Allocation 8.38% of tokens

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Proportion	Amount	Allocation plan
20%	180,000,000	Seed Sale
19.49%	175,410,000	Strategic Sale
8.36%	75,240,000	Private Sale
15%	135,000,000	Team Quota
9.65%	86,850,000	Consultant Share
19.13%	172,170,000	savings
8.38%	75,420,000	Initial Circulation

Seed Sale Overview

Conducted in January 2018 and raised a total of ~\$1.8MM at ~\$0.01 per token, selling 20.0% of total token supply.

Strategic Sale Overview

Conducted in May 2018 and raised a total of ~\$3.6MM at ~\$0.12 per token, selling 19.49% of total token supply.

Private Sale Overview

Conducted in July 2018 and raised a total of ~\$1.5MM at ~\$0.20 per token, selling

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Token application

1) Wisdom Big Data

At present, the development of big data still faces many questions. As we all know, how to protect the privacy of users is the key to restrict the development of big data. The actual case of Daxian shows that even harmless data, once collected by the big house, there is also the risk of privacy of S3 people. In addition, large data may also encounter potential security risks in the process of storage, processing and transmission. However, it is extremely difficult to realize the security and privacy protection of large data and to restrict service providers to collect users' double interest simply by means of technology. In order to tap the potential value of data sharing, we need better solutions to manage data security. Centralized IT systems provide advantages in terms of efficiency. However, frequent data leakage, lack of transparency and incompleteness of data urgently need a distributed consensus mechanism to remedy the shortcomings. Block chains are distributed books that provide traceable and untouchable records. Block chain-based technology can provide an optimal solution for inherently safe healthy IT ecosystem. ProducePay collects, uses and imparts data through intelligent contracts to ensure the purity of data. Creating a good ecological map through ProducePay and using block chain data to construct Zhi's big data will greatly improve the security, selfishness and usability of data in the future. At the same time, the transaction fees for the use and inquiry of the data on the public chain can be settled by collecting the ProducePay tokens.

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2) Block Chain Game

The global game market reached \$109 billion in 2017 and is in a long period of explosive growth. At present, in addition to the free-to-Pay Games game, online game business is divided into two main types: the user pays to buy the game experience for a long time, the user pays to buy virtual game goods and other value-added services. Virtual game products are provided by centralized service providers. For commercial purposes, centralized service providers usually restrict the transfer of goods in the game. Users can only use them on their proprietary platforms, but can not circulate. For users in need, virtual game merchandise transactions may be initiated outside the game environment. Because of the asymmetric information, the transaction process is cumbersome and users may encounter fraud. For centralized service providers, the development and management of virtual game products platform is time-consuming and money-consuming, and access prohibition between users is more tolerant. In this process, the user's virtual game goods may be lost, confiscated or changed, while the user does not have the right of recourse for the virtual assets. In addition, online games may also have a closed economic system, including production, distribution, exchange and consumption. Like the real world, inflation and deflation are unavoidable. If virtual game goods are stored in the chains, encrypted digital currency represented by ProducePay will replace those provided by game publishers. Virtual game currency, then no need for game publishers, Google Pay, AppStore and other centralized institutions, virtual game goods can be easily circulated among users. In addition, virtual game assets can also be securitized. ProducePay supports millions of levels of concurrency through hardware and software architecture design. It can be widely used in online games.

Risk Warning

There are risks in the development, maintenance, and operation of ProducePay Chain projects, many of which are beyond the control of the development team. In addition to the other content described in this white paper, participants are fully aware and agree to accept the following risks:

Market risk

The price of ProducePay Chain tokens is inseparable from the overall digital currency market situation. If the overall market situation is low or there are other uncontrollable factors, it may cause the ProducePay Chain token itself to have good prospects, but the price is still in the long-term. Underrated state.

Regulatory risk

Due to the early development of the blockchain, there are no relevant regulatory documents related to pre-requisites, transaction requirements, information disclosure requirements, and lock-in requirements in the global recruitment process. And it is still unclear how the current policy will be implemented. These factors may have an uncertain impact on the inPPtment and liquidity of the project. Blockchain technology has become the main target of supervision in all major countries in the world. If the supervisors intervene or exert influence, the ProducePay Chain may be affected. For example, the restrictions on the use of laws and the sale of digital coins may be restricted, hindered or even terminated. The development of ProducePay Chain applications.

Competitive risk

There are many projects in the current blockchain field, and the competition is fierce. There is strong market competition and project operation pressure. And with the development of information technology and mobile Internet, other application platforms are emerging and expanding, and the ProducePay Chain will face continuous operational pressure and certain market competition risks.

Risk of brain drain

The ProducePay Chain brings together a team of technical and consultants with leading and experienced experience in their respective fields of expertise, including professionals who have long been involved in the blockchain industry and core teams with extensive experience in developing and operating Internet products. The stability and advisory resources of the core team are important for the ProducePay Chain to maintain its core competitiveness. In the future development, the loss of core personnel or the loss of core personnel or consultants may not be ruled out, which may affect the stable operation of the platform or have certain adverse effects on future development.

Core protocol related risks

The ProducePay Chain is currently based on a specific chain development. Although the team will select the most secure and stable blockchain as the infrastructure, any failures, unpredictable functional problems or attacks on the chain may lead to smart farms. The chain stops working or lacks functionality in an unpredictable way.

Systemic risk

A fatal flaw in the software that is overlooked or a large-scale failure of the global network infrastructure. While some of these risks will be greatly reduced over time, such as fixing vulnerabilities and breaking the computational bottleneck, other risks remain unpredictable, such as political factors or natural disasters that may cause partial or global Internet disruptions.

Unpredictable other risks

Cryptographic-based digital coins are a completely new technology. In addition to the risks mentioned in this white paper, there are risks that have not been mentioned or anticipated by the founding team. In addition, other risks may occur suddenly or in combination with a variety of risks already mentioned.

Disclaimer

This document is for informational purposes only and is provided for informational purposes only and does not constitute any recommendation, instruction or solicitation to sell stocks or securities in the ProducePay Chain Platform and its related companies. This document is not intended to be an understanding or offer of any sale or offer, nor is it a contract or commitment of any kind.

The goals listed in this white paper may change in the light of unpredictable circumstances. While the team will do its best to achieve all of the goals of this white paper, all individuals and groups that purchase ProducePay Chains will do so at their own risk. The content of the document may be adjusted in the new white paper as the project progresses, and the team will post the update to the public by posting an announcement or a new white paper on the website.

This document is intended solely as a communication for the specific purpose of the project, and does not constitute any investment guidance in the future, nor is it a contract or commitment of any kind.

The ProducePay Chain expressly stated that it does not bear the direct or indirect losses caused by the participants including:

- 1) Once participants participate in the ProducePay Chain Token Distribution Program, they understand and accept the risk of the project and are willing to personally bear all the consequences. The project team expressly stated that it does not promise any return and does not bear any direct or indirect losses caused by any project.
- 2) The token involved in this project is a virtual digital code used in the transaction link, and does not represent project equity, income rights or control rights.
- 3) Because of the many uncertainties in the digital currency itself (including but not limited to: the big environment for countries to deal with digital currency regulation, industry incentive competition, technical loopholes in digital currency itself), we cannot guarantee that the project will be successful, and the project has certain The risk of failure, the token of this project also has the risk of zeroing.