

# TrueChain

**——New Generation Hybrid Consensus  
permissionless blockchain**

**White Paper**

## Abstract

The mission of the TrueChain—to create a permissionless blockchain that will carry the future commercial decentralized applications.

The vision of the TrueChain—to become a blockchain infrastructure that affects a hundred years.

The TrueChain focuses on building a free, open, safe, efficient and easy-to-use blockchain technology infrastructure, and building a blockchain economy operating system commercial infrastructure.

It is the demand of the times and the dream of TrueChain to create a permissionless blockchain that will carry the future commercial decentralized applications. Based on the hybrid consensus mechanism, TrueChain aims to provide high-speed point-to-point communication, value transfer and to build the infrastructures of smart contract for the society.

The ultimate goal of decentralization is to create a society of free and mutual trust . Thanks to the effort of permissionless blockchain projects like Ethereum, permissionless blockchain has developed significantly for the past few years, and the commercialization of digital currency and smart contracts has become possible. Prior to this, some private chain and alliance chain have been successfully applied, which raised people's expectations for permissionless blockchain developers. It is hoped that the arrival of the commercial permissionless blockchain can solve the practical problems, such as the high cost of digital payment, smart contract and so on. However, what differs the permissionless blockchain at heart from the private and alliance chain is that the design of the consensus mechanism needs to ensure that the unfamiliar and scale extending nodes can build trust between each other through technical means and accomplish tasks together, meanwhile, to ensure the stable and efficient operation of the permissionless blockchain. It is difficult for most of the existing consensus mechanism design to achieve a good balance between security and performance. The dilemma between decentralized decision-making and administrative efficiency had plagued the permissionless blockchain developers.

TrueChain hopes to keep the essence of decentralization while improving efficiency as much as possible simultaneously. The emergence of the hybrid consensus mechanism which combined POW with PBFT brings a ray of dawn to the solution of the problem.

# Contents

<b>I Strength.....</b>	<b>4</b>
Support entry of infinite nodes.....	4
Safety.....	4
High performance.....	5
Free use.....	5
<b>II Technical architecture.....</b>	<b>5</b>
Hybrid consensus mechanism.....	6
<b>III TrueChain community autonomy to build a common economy.....</b>	<b>8</b>
<b>IV Applications.....</b>	<b>8</b>
Insurance.....	8
Medical care.....	9
Game.....	10
Public welfare.....	11
Asset Securitization.....	12
Digital advertising industry.....	12
Micropayments.....	13
Value transmission.....	13
Digital copyright.....	14
Other application scenarios.....	14
<b>V Product matrix.....</b>	<b>14</b>

<b>VI Token Economy.....</b>	<b>15</b>
<b>VII Team Introduction.....</b>	<b>16</b>
Research and Core Engineering.....	16
M. S. In computer science, Oxford University.....	16
First Prize, DoraHacks Autumn@Xi An 2017.....	16
Community developers.....	17
Community and development.....	17
Consultant team.....	18
<b>VIII Development route map.....</b>	<b>19</b>
<b>X Investment institutions.....</b>	<b>19</b>
<b>Statement.....</b>	<b>20</b>

## I Strength

### Support entry of infinite nodes

For commercial applications such as Internet e-commerce, instant messaging software, and bilateral trading platforms, supporting large-scale and increasing number of users is a must-to-have ability for the permissionless blockchain in order to successfully carry the applications on the chain . The communication complexity of PBFT determines that nodes participating in decision making can only be kept in a very limited range, while POW, of which one of the characteristics is its ability to accept unlimited nodes. The combination of the two, namely PBFT and POW can make up for the disadvantages respectively.

## Safety

Because there is no guarantee in PBFT mechanism that all nodes participate in decision-making, there are relatively strong moral hazard and security risks. A small number of nodes' inaction or downtime may result in data tampering of other nodes or full chain paralysis. On the basis of POW, a hybrid consensus mechanism for the election of PBFT committed members is designed to ensure timely re-election of the PBFT committed members and monitor the backbone nodes in real time.

## High performance

The timely recording of user transactions is a guarantee for the availability and security of the permissionless blockchain. The communication efficiency of PBFT backbone nodes is sufficient to support 10000-100000 TPS (transactions per second). It is possible to ensure that the whole chain communication is not blocked while multiple smart contracts or commercial applications process transactions at the same time, and the ledger accurately records the transactions in chronological order.

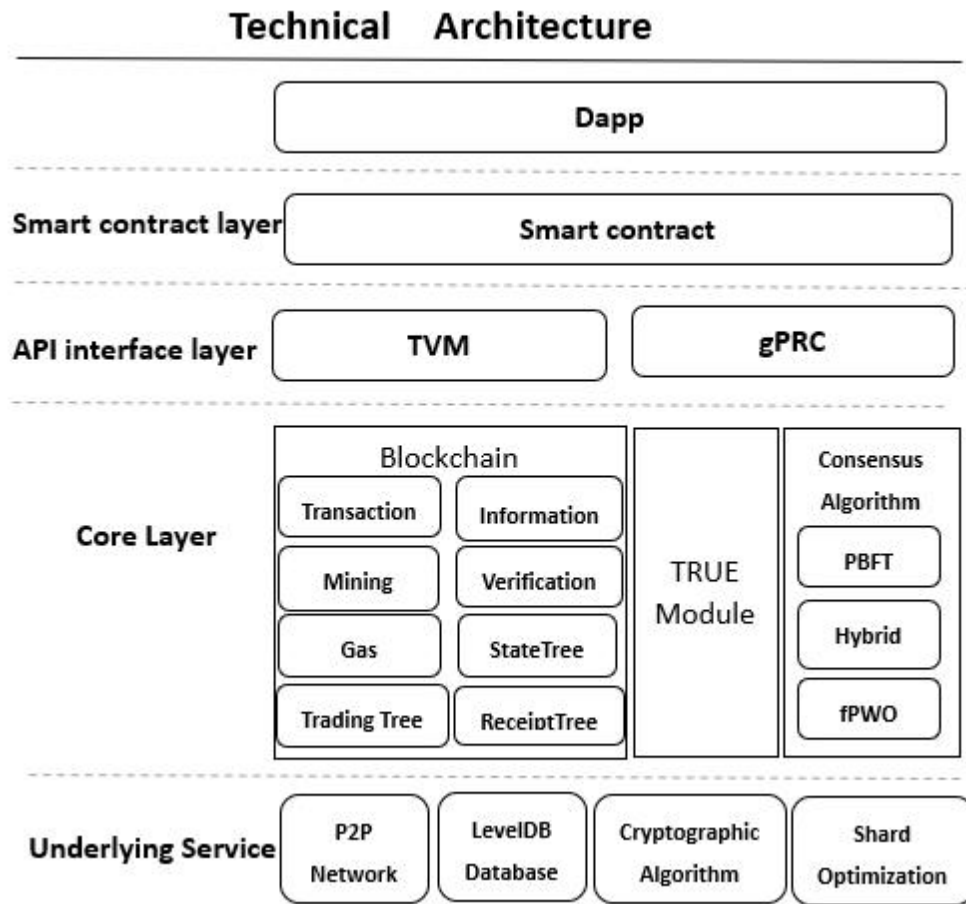
## Free use

Whether it is the initial test network or the future main network Stellar, TrueChain will remain open to all users free of charge. TrueChain always considers that the permissionless blockchain is an infrastructure for all users, not a profit making tool. TrueChain provides chances to find an appropriate source of benefit for not only the chain itself in the future, but also for the development of permissionless blockchain, or even the whole block chain industry.

## II Technical architecture

The technical framework of TrueChain is divided into four layers from bottom to top: The first layer is the underlying service, which includes the P2P network, the LevelDB database, the cryptographic algorithm, and the shard optimization. The second is the core layer, including the blockchain module, the TRUE module, and the consensus algorithm module. The third is the API interface layer, including the TVM virtual machine and gRPC communication protocol. The fourth layer is the smart contract.

For the specific design, please refer to the yellow book or GitHub open source code: <https://github.com/truechain>.



## Hybrid consensus mechanism

The design of consensus mechanism is the core difference between the permissionless blockchain and the private chain and the alliance chain. It needs to be decentralized enough to achieve security, and fast enough to ensure performance. The industry has basically formed the understanding that it is difficult to balance the essence of decentralization and efficiency only with single consensus mechanism. In order to make up for the shortcomings of the previous two generations of block chain, i.e. Bitcoin and Ethereum, of which TPS are too low. This has prevented them from commercial application development in real world, TrueChain selected a hybrid consensus mechanism combining the efficiency of PBFT with the decentralization of POW. On the basis of guaranteeing the essence of decentralization, a permissionless blockchain with high performance and high reliability can be realized to carry out the target of large-scale commercial Dapps operation on the chain.

There are two most commonly known solutions of distributed protocol : Pow and PBFT. POW solution, represented by bitcoin, has been proved to be difficult to meet the need of transaction processing speed; the other is PBFT solution represented by a large number of private chains and alliance chains, which can efficiently deal with a large number of transactions. However, the PBFT solution requires that many nodes participating in the bookkeeping to trust each other, so the nodes have to know each other before the agreement can take effect. There is

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no doubt that when applying backbone nodes which records all transactions to the permissionless blockchain architecture, a huge moral hazard exists. Establishing a consensus mechanism of efficient mutual trust in the permissionless blockchain has become a worldwide Challenge .

The solution of TrueChain is taken by combining the two. Keeping the mechanism of PBFT remained, the selection of backbone nodes is open to the permissionless blockchain, and the POW protocol is used as the dynamic selection and agreement of the quasi-system to support the backbone nodes. The establishment of the backbone nodes community converted the nature of the chain from private and alliance to permissionless blockchain.

## fPoW

fPoW is a brand new mining design concept. The Truechain uses the Fruit Chain design to ensure the fairness of all participants during the mining process.

In the mining process, PBFT produces large blocks, and the fruit chain is responsible for dividing the large blocks into several fruits. These fruits have a shelf life, and several transaction information is recorded in each fruit. Ordinary mining can only be used to verify these transaction information, without the need to invest a lot of mining equipment, power and bandwidth, the design concept of a light node in a fruit chain allows ordinary participants to use ordinary computers, even using mobile phones to achieve mining.

The biggest feature of the fruit chain is fairness and reliability, , which solves the problems of 25% of attacks in the common PoW consensus algorithm, the problem of joint mining of large mining pools and unstable transaction fees and so on.

## Shard optimization

The idea of fragmentation of the Truechain is to divide the world state of the blockchain into different "slices". Each "slice" is processed by a different PBFT committee, and turn serial processing into parallel processing to achieve a significant performance boost.

## Smart contract

Smart contract layer is a key step in the application of consensus mechanism. The operation of smart contracts must rely on the completion of virtual machines to ensure that unified smart contracts can compute in different environments and reach the same results. TrueChain inherited the design idea of EVM, and launched TVM on PBFT. TVM will be implanted into each backbone node, enabling them to invoke requests based on individual requirements.

## Easy Dapp

Easy Dapp is an easy-to-use Dapp development framework.

Ordinary developers no longer need to pay attention to complex technology stacks. They don't need to understand the complex technology implementation of blockchains, and they don't need to deploy complete blockchains. They only need to refer to this development

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framework and call standard interface functions. Running on a TVM virtual machine, can develop and deploy a decentralized Dapp application very quickly.

### III TrueChain community autonomy to build a common economy

**Byzantine & DAO everyone is self-governing, all share and all work together to build an economic system.**

The Byzantine Committee is responsible for day-to-day management operations; the DAO Committee is responsible for oversight. It is a community autonomy structure based on mutual cooperation and mutual constraints.

The TrueChain Byzantine Committee is divided into the Developer Committee, the Market Media Committee, and the Token User Community Committee. Responsible for the operation of the three major aspects of the TrueChain economy, these members are elected by DAO. Among them, the Developer Committee is responsible for the recruitment of global developers, the evolution of the TRUE technology route, reviewing the quality of the code, and stimulating based on the contribution of each developer; The Market Media Committee is responsible for developing the True Media promotion strategy and recruiting media from around the world to participate in the promotion of True and to develop relevant incentives to motivate the contributing media; The Token community committee is responsible for developing community outreach and maintenance strategies and developing incentives for True users who contribute to the community.

The DAO Committee is a decentralized organization that represents the interests of the widest range of community holders. The organization exercises voting rights, supervisory powers, and voting rights on major proposals, and all holders automatically become members of the DAO committee.

### IV Applications

#### Insurance

Insurance is also a field that can be put into force for TrueChain. The integration of block chain and insurance industry really promote the development of insurance to automatic claims. The intelligent contracts under the block chain can automatically make claims when the triggering conditions occur, skip cumbersome steps of traditional claims and avoid possible moral hazard. Agricultural insurance has always been a difficult area for insurance to be involved in, because the grain output is affected by many natural and human factors. It is difficult to retain the evidence, so it is difficult for farmers to understand and accept agricultural risks. If the sensor is used to measure the weather conditions such as temperature, humidity, wind speed and so on, the automatic claim is triggered when the condition is reached, and the low cost, rapid and standardized claim will be realized by the characteristics of automatic completion and non-tampering of the smart contract. The same can be applied to aircraft delay risk. By calling the airline or the airport public interface, the smart contract automatically determines whether

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the flight is delayed and the cause of the delay is determined, thereby automatically triggering the claim. When the flight is delayed, passengers can be at least compensated financially. may calm down when seeing their account balance increasing.

In addition, the traditional insurance industry may be transformed by the new mutual insurance model. Mutual insurance and decentralization trading mechanism are completely interconnected. All parties are completely equal comparing to traditional insurance industry where insurees are often in a weaker position than the insurers. Under the new model the intermediary is no longer required to act as an organizer to establish a pool of funds, users can fully utilize the design of the block chain consensus mechanism and establish insurance on the form of point to point mutual assistance. Each premium payment can be traceable, open, transparent, timely and efficient. Combined with the hybrid consensus mechanism of TrueChain, mutual insurance can also be supervised to ensure the emergence of moral hazard.

Block chain technology enables the insurance industry to return to the main business of matching supply and demand and calculating risks, rather than focusing on asset management capabilities such as today, which should not be the intention of insurance.

## Medical care

In the medical field, the anonymity and decentralization of the block chain can be used to protect the patient's privacy. Electronic health cases (EHR), DNA purse, and drug anti-counterfeiting are all possible applications of block chain technology.

IBM published a report on health care and block chain in 2017, which specifically explained the potential value of block chain technology in clinical laboratory records, regulatory compliance, and medical / health monitoring records, as well as health management, medical equipment data records, drug treatment, billing and claims, safety of adverse events, medical assets management, medical contracts management and other special advantages.

In terms of EHR, an individual's complete health history record contains all the vital signs, high and accurate records of the medicine, the doctor's diagnosis, the patient's disease, and all the information related to the operation. The whole historical data related to the medical staff, the location and the events are valuable for precision treatment and disease prevention. With its traits of security, transparency, decentralization etc., the block chain seems to be the perfect technology to apply to this area. The data of individual and institutional groups are stored and shared in real time.

In the system of TrueChain, every transaction has a timestamp, and becomes a part of the permanent record which cannot be tampered with afterwards. All nodes can view all records in a permissionless blockchain without permission. In a permission-restricted permissionless blockchain environment, each node can establish a consensus mechanism to determine the node's access to the transaction, thus maintaining privacy and concealment of the real identity of each node when needed. In this way, the block chain realizes the complete record of the asset lifecycle. When assets flow through the entire supply chain, no matter patient health records or a bottle of pills, all records are clearly visible.

IBM investigated the value of block chain to the medical executives, and executives generally believed that block chains can most effectively eliminate medical information friction, including incomplete information, information risk and inability to access information. For example, while

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computer records cannot ensure the accuracy of information input, the block chain on the other hand, with its ability such as selecting the fastest and best information to put into the database with high security, can overcome the past medical information barriers and maximize its own strength.

The standardization of smart contracts is a key link in the application of block chains, which is of great value in the supervision of medical behavior. When non-compliance events occur, smart contracts will automatically track compliance and send notifications to relevant parties in real time, effectively remove inspection links, simplify the implementation process, and reduce supervision costs.

On the basis of data confidentiality and reliable quality, organizations, institutions and enterprises can join the system and cooperate with data. Using personal health data, medical equipment data, data collected by medical and nursing staff, developing new medical applications or providing services, implementing health management and creating new data sources, one can form a larger block chain ecology and a virtuous cycle.

In terms of billing and claims, block chains can also effectively prevent improper behavior such as fraud, and reduce the waste of medical resources. Enterprise PokitDok, Capital One, and Gem proposed a platform supported by block chains to help patients before receiving treatment, determine the amount of self-payment in advance, provide pre-payment services, avoid the unexpected costs of the patients, and to reduce the amount of unpaid payments by medical institutions.

The traceability of block chain also includes the tracing of medical malpractice and the backtracking and supervision of drugs. For example, the establishment of a consistent drug distribution and management system will be a fatal blow to counterfeit drugs. Because the data of the block chain is updated and widely shared, pharmacies, manufacturers, buyers, regulators and other parties can observe the flow of data in real time, including drug manufacturing and distribution information, so as to strengthen drug regulation and prevent counterfeit drugs from entering the market. It is reported that the UK company, Blockverify, is one of the organizations to carry out drug source pilot projects to help medical staff verify authenticity through scanning drugs.

Block chain can eliminate adverse safety incidents, such as solving the safety problems of medical devices, especially the health devices connected to the network. In 2016, Johnson warned patients that their "OneTouch Ping" insulin pump was easily attacked by hackers, and FDA had reported a network security leak in St. Judah's medical heart equipment. Therefore, the normal operation of medical devices connected to the network is very important. Maintaining network security is also an important application of block chain in medical scenes.

## Game

The combination of the block chain and the game refers to the creation of virtual assets for collection on the block chain. It is not like Ethereum cat or Ethereum Three Kingdoms, where the players obtain the false "block chain" game through the contribution of new players and the circulation of the virtual assets. It's more than that which the use of cross chain technology in the game production can upgrade the industry.

As far as current development is concerned, the focus of block chain can be applied to the game of virtual asset circulation and gaming platform. For most games, the users are not sticky enough and may lose quickly after playing Company A's game, because its gain in Company A's game can't be transformed into a drive to play other games of Company A. Through applying the block chain technology, the traceability, convenient circulation and low cost of the virtual assets can be ensured, and the loyalty of the old players can be greatly improved, the ecology between different games of A company and the life cycle of the users can be extended. Small game companies can even unite to trade virtual assets in the same chain, in order to reduce user diversion costs and enhance user dependency.

Large games often hold many friendly matches and league matches. Using block chain smart contract can solve problems such as timely delivery and transparency. When the interface invocation gets the result of the game, the code automatically runs to complete the prize delivery gambling delivery.

## Public welfare

Public welfare is one of the most important public issue as well as system in modern society. By the end of July 2017, among the 70 million poor people in our country, nearly 30 million of the poor were poor. How to make public welfare more efficient, more fair and more transparent is a vital problem to be solved.

Philanthropists donate money to charitable organizations to help the trapped groups or improve the community. Where are these money used in the end? It is a question of which not only the donors but also the public deserve to know. The charity organizations also face the challenge of the traceability of the fund. How can it prove that the money has been sent to the needed? The two sides often encounter produce a lot of contradictions, like suspension of the flow of denoted money, embezzlement, corruption and so on. It not only harms the fund and those who are in need, but also hurts the good will of the philanthropists and the public.

The application of block chain technology will bring significant changes, especially improvements to philanthropy by keeping a transparent, decentralized, traceable ledger of donation and transmission. As a distributed ledger technology, the information on block chain can not be of tampered, and is transparent and traceable. It can perfectly solve the aching points of the public welfare system as mentioned above. When the user's good money enters the block chain system, it will be automatically recorded on the ledger of block chain and stamped with a timestamp. This record cannot be tampered and every donation and support will be tracked as "express".

Many blocks chain and charity projects have been tried to land.

In July 2016, the Ant charity block chain was officially launched. "Let the deaf children get the new sound" became the small scale test project of the Ant Financial and the Chinese Social Assistance Foundation. The new edition was launched in December 2016, adding the first block chain of the Chinese Red Cross Foundation "Say Goodbye to the Hearing Barrier" and the "Children Illuminating the Stars", realizing the real time account publicity and helping to solve the "pain point" of public financial transparency. Until March 16, 2017, all the donation project on Alipay has been accessed to the ant block chain platform. Statistics show that, by January 30, 2018, there were 37 public welfare institutions, more than 300 public welfare projects, access to

the Ant Block Chain Platform. More than 9.37 million donations have collected a total amount of over 48 million yuan donations.

In December 2016, the network mutual support platform held a "Heart Chain" conference in Shanghai. "Heart Chain" is a product which relies on block chain technology, specially designed for the public welfare industry. Relying on the block chain technology, all donations will be recorded on the "heart chain". Data including the amount of donations, capital flow is open and transparent. It is impossible for the public funds to be accessed illegally. This also makes personal kindhearted behaviors an objective "digital asset". As of October 2017, the times of platform donation has exceeded 100 million, and nearly 2 billion of the assets had been issued.

Numerous examples show the future trend of the integration of block chain and charity.

## **Asset Securitization**

The extension of the digital currency lies in the token. Assets can be converted into tokens, and token can be turned into a proof of the assets usage rights. The transformation of assets into currency is a kind of securitization. If a book can be set up between the nodes and all the assets in the asset securitization pool are moved to this book, all the characteristics of the basic assets are marked, the block updates according to the transaction time which means non-tampered, and regular following up is conducted, the effective combination of asset securitization and block chain can be realized.

## **Digital advertising industry**

The digital advertising industry monopolized by Facebook, Alibaba, Google, Baidu and other Internet giants has many industry pain points. Small and medium-sized advertising media, constrained by the size of Internet giants, are forced to form a "flow alliance" with weak bargaining power. For advertisers, the users who can modify the data and the group that is difficult to measure makes the digital advertisers face serious information asymmetry. Advertisers often pay high advertising costs for distorted users' clicks and coverage, but fail to achieve the desired results.

The existence of many advertising trading platforms has provided an alternative solution to advertisers to some extent, but the trust problem between the two sides has not been eliminated. On one hand, some advertising platforms rely on the development of robots to increase the amount of advertising clicks and cheat for advertising fees; on the other hand, some advertisers refuse to pay advertising costs before the advertising media is released. Therefore, in fact, compared with the Internet advertising platform, the small and medium-sized advertising platform has lower efficiency and less mutual trust.

In the final analysis, the crux of the digital advertising industry lies in the trust mechanism. In the face of the high cost of trusting the Internet giants and the less expensive but fraudulent situations, advertisers are most hopeful of the emergence of a low-cost mutual trust trading platform. The commercial application of block chain technology makes this hope a reality. Because of the characteristics of de-centralization, anonymity, openness, autonomy and irreversibility of transaction records, block chain technology provides a transparent and mutual trust trading platform for its advertisers. Followings can be mainly realized:

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- (1) data can be transmitted to the audience and can be counted.
- (2) advertisers and advertising media are safe in funding.
- (3) translucent transactions of all parties.

By using smart contracts, both parties can establish a safe and reliable trading mechanism, and make the advertising result measurable and reduce transaction costs. Users involved in advertising transactions have also entered the economic ecosystem of TrueChain, which can acquire or create higher added value in TrueChain's ecology.

## **Micropayments**

In many situations, people occupy too much public resources or cause negative externalities but fail to pay the corresponding remuneration. If the rear vehicle exceeds the front vehicle from the left, it actually takes up the road traffic resources of the fast lane. A front car with the right of way has to slow down and yield the rear vehicle. If the times of autopilot is coming, when the rear car has the need to surpass the front car, it can send out a request for transcending from the left side and pays a small fee, and the front car will automatically yield to it after receiving the request. It can not only guarantee the completion of Overtaking Behavior, but also make the front car gain from giving up the right of way, which is safe and fair.

For another example, solve the problem of spam emails and spam messages. Assume every mail and text message is required to pay the counterpart a small fee before sending. For the normal communication, the cost of communication is not significantly improved because they send messages in both directions, but for people who send a large number of spammers or spam messages, they will face a huge cost which reduces the possibility of sending garbage information in one way greatly.

The realization of small payment must be done by block chain without charge. TrueChain that provides high performance and stable trading environment is just suitable for these scenes.

## **Value transmission**

Although there is a long way for block chaining technology to go, it can be seen that its application in the financial field is inevitable. It is not only currency creation, but the real changes that the block chain can bring to the financial industry lie in the value transmission and the public account. Many institutions both at home and abroad have made active exploration in the aspects of payment and settlement, asset registration and asset transfer. Because the block chain is a public, traceable, and non-tampered distributed general ledger system, it can effectively reduce the error rate of payment, liquidation, settlement steps, and monitor the inflow and outflow of each step of funds simultaneously, promoting the establishment of a faithful society and be conducive to financial supervision. With the development of block chain technology, the authenticity of assets will be further guaranteed.

## **Digital copyright**

DECENT, a block chain company in Switzerland, hopes to use block chain technology to improve digital rights management. Through the digital video fingerprint identification, the TrueChain 初链 [www.truechain.pro](http://www.truechain.pro)

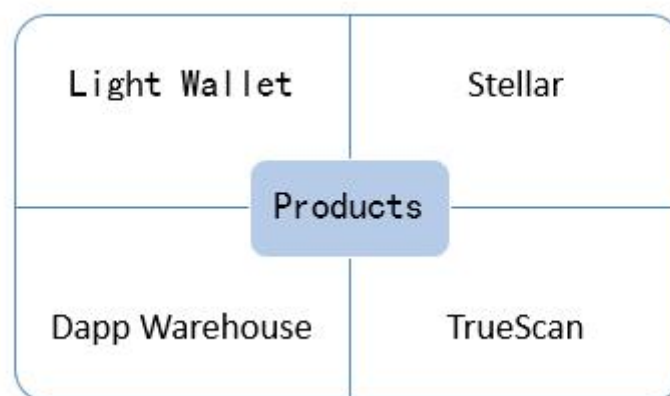
unique "fingerprint" is abstracted from the motion change, color and key frame of the video. This fingerprint is used to track the video content on the protection network. Because of the uniqueness and irreversibility of the hash coding used widely in block chain data storage, the encoding of each file is not the same. Digital fingerprinting technology can systematically use the detailed characteristics of documents to distinguish genuine and pirated content, and trace the source of piracy.

## Other application scenarios

Using the extensibility of its nodes and the efficiency and security of the consensus mechanism, TrueChain can be more applied to the fields of financial formats like mobile digital bill of exchange, securities trading, and supply chain management, property right tracking, digital certificate, etc.

## V Product matrix

The product matrix of TrueChain is as follows:



**TrueChain Light Wallet** provides nodes with services such as receiving, sending and managing all TrueChain digital assets.

**Stellar** provides a convenient, stable and efficient smart contract development platform for commercial Dapp developers. Developers can manage the whole life cycle of contracts.

**Dapp Warehouse** is a user-oriented Dapp downloading platform.

**TrueScan**, as TrueChain's browser, provides contract monitoring, transaction statistics, book search, privacy protection and other services to nodes.

In the future, TrueChain will continue to improve the smart contract development kit and expand the product richness of the infrastructure to meet the needs of the new generation of permissionless blockchain users to develop personalized and complex smart contracts.

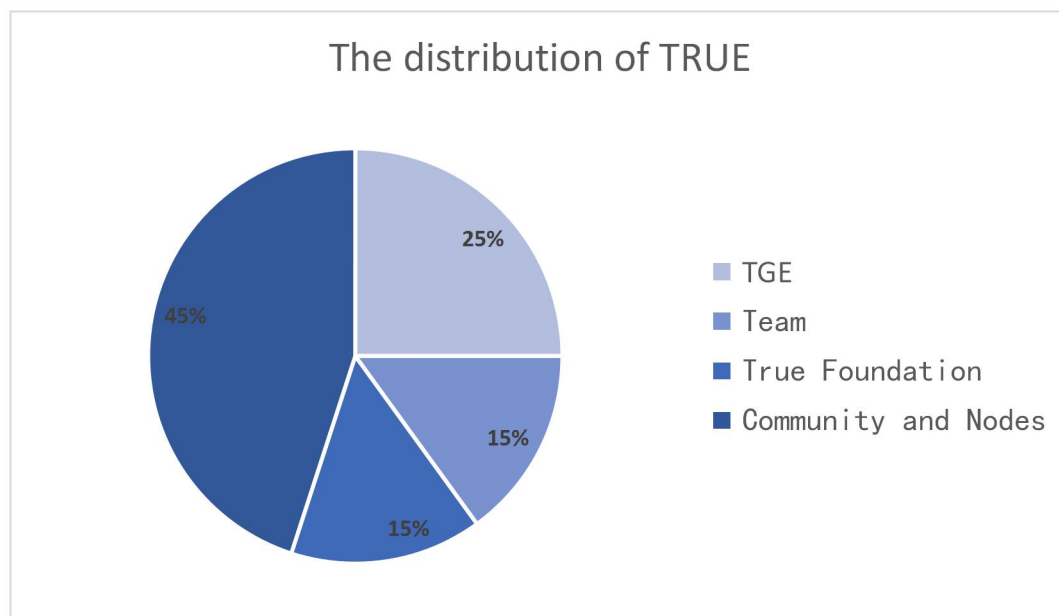
## VI Token Economy

TrueChain uses its own TrueChain Currency (TRUE) as its token, which can realize the functions of value storage, payment means, value scale, etc. The total amount of issuance is 100 million.

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The proportion of True distribution is shown as follows:



TRUE allocated to TrueChain's team will be restricted by the long term weighting schedule, and the specific contact rules are as follows:

A. 20%, or 3000000 TrueChain Currency (TRUE), is released after 3 months of token distribution.

B. 25%, or 3750000 TrueChain Currency (TRUE), is released after 12 months of token distribution.

C. 25%, or 3750000 TrueChain Currency (TRUE), is released after 24 months of token distribution.

D. 30%, or 4500000 TrueChain Currency (TRUE), is released after 36 months of token distribution.

At this point, TrueChain Currency allocated to the TrueChain team is lifted.

## VII Team Introduction

### Research and Developers Community

**Eric Zhang** CEO

M. S. In computer science, Oxford University

Studied distributed systems at the European Nuclear Research Organization CERN

Founder of the world's largest and most extensive Hacker community --Dorahacks

**Archit Sharma** Consensus Engineering Lead

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An expert at distributed system, operation systems and performance engineering  
Archit Sharma has worked in Red Hat and CERN, engaged in large-scale cloud service and distributed system design and development.  
Archit Sharma is a contributor of several important open source projects, as well as several Docker Hackathon champions.

#### **Yang Liu Mainnet Lead**

B.S. & M.S. Computer Science, Tsinghua University  
10+years experience in development and system architecture  
Cryptography and algorithms expert  
Responsible for truechain 's PoW and hybrid consensus

#### **Ming Tian Integration lead**

A Golang development engineer with more than 10 years of c/c++ development experience and responsible for large projects, has strong learning ability, has a complete real-time database products and digital currency trading platform project experience, have development of bitcoins and ethereum wallet.

#### **Home Chen Product lead**

Engaged in IT work for 20 years, has rich experience in Internet product design and development, and software project management. He was a technical partner of “CaiHuohuo”, responsible for the research and development of new products, server cluster and high concurrent processing.

#### **Felix Cai Front - end Engineering Lead**

Graduated from Xi'an Jiao Tong University youth class.  
First Prize, DoraHacks Autumn@Xi An 2017

#### **Samikshan Consensus Developer**

B.S. In computer science from National Institute of Technology, Durgapur  
Developer/Participant, Google Summer of Code (2012)  
Software Engineer, Red Hat (2013 - 2018)

#### **Seay (wizard) Security Coordinator**

Leader of Ali attack and defense laboratory  
The blogger of well-known security blog “cnseay.com”.  
He once served at Alibaba security, and was , Sobug technology partner.  
Seay has experiences of more than ten years in security attack and defense and served for several well-known enterprises.

#### **Robin Zhang Consensus and PoW product lead**

BS, MS, Tsinghua University  
MS of SUNY, Buffalo  
Network communications expert



18+years experience in Silicon Valley and China

**Binqi Tang Senior developer**

Former manager of Shengzhen Coship electronics company's development department,

Architect of Jwinlink, Technique expert of 58 home

Internet framework、big data analysis architecture、product planning、implementing and operating expert

**Yu Tang**

Doctoral candidate of Beijing university of posts and communications

Researcher and designer of hybrid consensus

## **Growth and Operation Community**

**Xiaoyong Cheng Chief Strategy Officer**

A part-time researcher at Tsinghua university, executive director of China cloud system industry innovation strategy alliance, and member of the youth leader of chang 'an club.

**Larry Lin Chief Development Officer**

The expert of Internet marketing and community operation, has been responsible for the operation of "Baidu encyclopedia", which is the largest co-building community in China. Lin has more than 10 years of digital advertising and Internet industry experience, and was the author of several bestsellers in propaganda.

**Hillary Nguyen TrueChain Vietnamese Partner**

Managing partner of Alphawhale Capital.

A Strategist, Advisor, Communicator, Consultant, community influencer and Speaker in Blockchain, Digital asset management.

With diverse set of skills, Hillary executes her management role effectively into the new foundation of company in 4.0 revolution. Yan Liu Community Coordinator

Responsible for TrueChain community operation, 10+years internet product operation experience, Senior advisor of ADP

**Paulus Pham TrueChain Vietnamese Community Director**

Blockchain community management professional

Managers of some major blockchain user community in Vietnam

**Wen Yan Marketing coordinator**

Responsible for market growth. Graduated from the school of journalism and communication at the University of Missouri-Columbia. Business reporter at Bankrate in Washington DC, and

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journalist at Sina Finance.

## **Advisors**

### **Yushi Shen**

Secretary General of China Cloud System Industry Innovation Strategic Alliance, Bachelor of Electronic Engineering from Tsinghua University, Master of Science and Doctor of Computer Science from the University of California-San Diego. National Thousand Talents Program Review Specialist, Tsinghua University and many other university researchers. He has served as a strategic consultant for Microsoft Corporation, head of cloud computing government affairs and business development in China, and worked at Microsoft headquarters from 2006 to 2012 as a senior software architect.

### **Xianhua Wei**

The professor and PhD tutor of Chinese Academy of Sciences, is also the deputy director of the virtual economy and data science research center of Chinese Academy of Sciences, and the executive director of the CAS - Reuters financial risk management joint laboratory.

### **James Cooper**

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### **Yu Zhu**

Dean of the New Retail and Blockchain Research Institute of the TrueChain, the first person in charge of the New Retail (O2O) division of Alibaba Group, became the Vice President of Shangpin Business in 2015, responsible for the offline entity and online work. He has extensive experience in fully digital, omni-channel communication and digital marketing.

## **VIII Development Roadmap**

2018.1 True white paper released

2018.3 PBFT alliance chain online

2018.4 Hybrid consensus mechanism is well designed

Contract lifecycle management platform release and stellar platform release

2018.5 TrueChain engineering roadmap was released on github

TrueChain light wallet online

**TrueChain** 初链

[www.truechain.pro](http://www.truechain.pro)

TrueChain decentralized node campaign system online  
 2018.6 Hybrid consensus code framework open source  
 Hybrid consensus incentives released  
 Main network v0.01 internal test  
 2018.7 fPoW basic framework implementation and open source  
 The American developer community was founded  
 Byzantine & DAO community autonomous mode operation  
 2018.8 fPoW and TrueChain main network integration  
 Research and development of Hybrid consensus fragmentation mechanism  
 2018.9 TrueChain main line online (open only for priority nodes)  
 2018.10 Easy DApp online  
 2018.12 Hybrid consensus fragmentation mechanism online  
 2019.3 The main network is open to all nodes

## X Investment institutions



## Partners

cooperator	Item
Tsinghua university Internet industry research institute	Academic research on block chain industry

<b>China cloud system industry strategic innovation alliance</b>	<b>Independent innovation in the cloud system industry</b>
<b>Tsinghua University Press</b>	<b>Research and books</b>
<b>Dorahacks</b>	<b>Talent and activities</b>
<b>SlowMist</b>	<b>Safety and Protection</b>
<b>Wootop</b>	<b>Medical data application</b>

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