Autochain

global automobile industry application chain

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Abstract

The automotive industry is one of the largest industries in the world. In 2016, the global automobile production and sales volume reached a historical high level, with output reaching 94.98 million units and sales reaching 93.86 million units. The global used car market transaction has also entered a rising stage. In 2020, only used car trade in China is expected to exceed the market size of 3 trillion. The automotive aftermarket business will rise with the prosperity of the auto market, mainly involving auto finance and auto maintenance, and will enter trillion–scale scale in China in the coming years.

With the prosperity of the automobile industry chain, some problems in the traditional market have gradually emerged. There are many problems in the unreliability of vehicle condition information records, seller credit, auto finance risk control, insurance liability, and community construction, which greatly reduces the car ecology operational efficiency, and has increased transaction costs at all aspects and hinders the further prosperity and development of the automotive market.

Autochain is committed to creating a decentralized, distributed automotive industry chain ecosystem that will integrate automakers, distributors, consumers, vehicle inspection, vehicle maintenance, auto insurance, auto finance and many other participants. Based on blockchain consensus mechanisms,

intelligent contracts, multi-signature wallet technologies and other blockchain technologies, combined with core applications such as CAIT, OBD, and cryptology car locks, Autochain is designed to solve current problems in the automotive market such as information asymmetry, high transaction costs, and credit risks, so as to accelerate the development of the global automotive industry.

Through the issuance of AUC Digital Pass, Autochain is linking the automobile industry information, and setting up an incentive mechanism based on the algorithm for the participating entities. Each link of the automotive industry chain can realize rewards and consumption based on the AUC Digital Pass, creating an closed loop path within the AUC digital authorization ecology system.

Relying on its strong team advantages, Autochain operates strictly in accordance with national laws and regulations and industry standards. Elites from the global automotive industry and blockchain technology jointly initiates the establishment of a foundation to integrate global automotive industry resources, to subvert the traditional automotive industry development model, and to establish a brand-new ecosystem of automobile industry chain, so as to promote the accelerated development of automobile industry in the track of lockchain technology.

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01.Project background

1.1 The development status of the global automobile market

The automobile industry is one of the largest industries in the world and has become a pillar industry of the national economy of the developed countries such as the United States, Japan, Germany, and France. It has characteristics of a high degree of industrial correlation, wide coverage, high technical requirements, and strong comprehensiveness, large quantity of parts, high added value, etc. It has a strong leading effect in industrial structure upgrading and related industrial development.

In recent years, the global automobile production and sales have basically grown steadily. In 2016, the global automobile production and sales volume hit a record high point. The output reached 94.98 million units and the sales volume reached 93.86 million units. The average annual growth rate of global car sales in 2009–2016 was 3.26%.

Europe, the Americas and other developed countries and regions have been the main markets for global automobile consumption. In recent years, the growth of automobile consumption in Asia, Oceania, and the Middle East is significant. In 2016, the sales volume was 46.86 million units, which accounted for 50% of the global market. It is the world's largest auto consumption market.

From the perspective of development trends, the global auto

output will increase steadily in the future. The auto market in developed countries is already approaching saturation, and the concentrated regions in developing countries such as Asia and South America will be the main source of demand growth.

Since the 21st century, although the auto industry in China still has problems with unreasonable industrial structure and weak self-development capabilities, the entire industry has developed rapidly, the degree of industrial concentration has been continuously improved, and the level of product technology has improved significantly. China has become a world leader in automobile production and consumption.

In recent years, China's auto production and sales have steadily increased. In 2015, the production and sales of passenger cars were 21.08 million and 21.15 million, respectively, with an increase of 5.78% and 7.30% respectively. In 2016, automobile production and sales reached 28,188,000 units and 2,802.82 units, with an increase of 14.46% and 13.65% year-on-year, passenger car production and sales of which were 24,420,700 units and 24,379,900 units, with an increase of 15.50% and 14.93% on the same period of time.

The global second-hand car market transaction has also entered a rising stage. In 2020, only used car transactions in China are expected to exceed the market size of 3 trillion. The average age of Chinese cars has reached 4.5 years, and the most used car market is three to six years. Comparing the ratio of used cars to new cars in China and the United States, the

The automotive aftermarket business has risen with the prosperity of the auto market, mainly involving auto finance and automobile maintenance. The major businesses involved in auto finance are car loans and auto insurance. In 2017, the scale of the auto insurance market reached 700 billion Yuan, and the market size of car loans reached 350 billion Yuan. It is estimated that by 2020, the market size of the two will reach trillions of scale respectively. In 2017, in China alone, the market for car after maintenance reached 700 billion Yuan. Like the automotive financial market, the conservation market will also reach trillions in the next few years.

1.2 Analysis of the pain point of the global automobile industry

1.2.1 Authenticity of vehicle condition information

Due to the huge automobile industry chain and scattered data, vehicle condition information is still difficult to concentrate. It is very difficult for consumers to understand the real information of production, assembly, and transaction of all parts of a car, especially for used cars. Information on the condition of the car is a huge shady industry. Although the relatively large used car trading platform has a professional vehicle inspection team, there are still moral hazards and operational risks, and the authenticity of the vehicle condition information has not been fundamentally resolved.

1.2.2 Seller's credit issues

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As the problem of the authenticity of the vehicle condition is not solved, it is difficult to ensure the commercial credit of the seller in the automobile trading market. This problem is particularly serious in the aftermarket services such as vehicle repair, maintenance, and decoration, and there is no industry standard for the price of vehicle accessories and maintenance. The chaos in the post-market service industry is serious, and consumer rights are damaged.

The value of the middleman in the used-car trading segment is that he can reduce the information asymmetry between the parties. As a result, the credibility of the middlemen became the key. In order to build brand credibility, used car dealers are willing to invest a large amount of advertising costs into brand marketing. Although this reduces credit costs, they significantly increase the purchase cost of used car transactions.

The pain point of price difference is derived from the credit pain point. Because the seller has a stronger information advantage, the buyer can not make accurate judgments on the price of the used car, so that the increment in the price of the intermediary institution makes the buyer feel more puzzled.

1.2.3 The problem of risk control in auto finance

here are many serious problems in the risk control of automobile finance. For example, when the second-hand

car deals with vehicle insurance, the insurance party needs to spend a lot of cost to get the real information of the vehicle condition and the driver's driving behavior information in order to calculate the matching auto insurance category based on the risk control model. However, under the existing system, due to the high cost of data acquisition and credit reporting, the current solution is too primitive and it is impossible to match individual vehicles and car owners with personalized car loan auto insurance, which severely curtails the entire automotive industry.

1.2.4 After vehicle maintenance efficiency

After the car maintenance service is a traditional industry, because the industry is not standardized, multiple participants, inconsistent professionalism result in low maintenance industry efficiency, and consume a large amounts of time and money of the owners.

1.2.5 Poor coordination of automobile community

There are numerous industry participants. In the traditional automotive market, the shareholders of the auto manufacturers, auto manufacturers employees, auto owners, and auto service providers are very different. There is no effective incentive mechanism for all parties, and there is no strong initiative in vehicle sectors of transactions, aftermarkets, etc. The powers and responsibilities are not clear, and the industrial chain is broken, which severely restricts the efficient operation of the automobile industry.

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02.Product scheme

2.1 Vehicle credit certification

Autochain integrates the automobile industry chain information, from auto parts to assembled vehicles, and every transaction link, all recorded in the blockchain, to ensure the authenticity of the vehicle information, can not be tampered with, to form a vehicle credit database, to create Credit ID for each car.

2.2 Used car trading discovery

CAIT

vehicle
February 12
auto repair factory
Plate number
Car owner JOY

Valuation 27$

Searching vehicle information with mobile phone and acquiring intelligent quotation, so as to facilitate deeper mining of used car trading opportunities.

The used car trade has been controlled by middlemen for a long time. Because of the asymmetric information, middlemen earn a lot of price difference. At present, some used car trading platforms have emerged, which eased the huge price gap among middlemen to some extent. However, the credibility of the platform is also called the key of credit. In order to build brand credibility, the used car trading platform invests a lot of advertising costs to maintain the brand and promote marketing, although the credit costs has been reduced, the transaction

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costs remain high. Autochain relies on its own business development advantages, applying CAIT technology, automatically lock used car owner information by installing intelligent terminal cameras in car wash and maintenance shop, so as to discover used cars at zero cost, eventually, greatly reducing the cost of used car transactions, through the market feedback.

2.3 Vehicle condition information tracking data

Automobile repair and maintenance decoration shop

OBD Vehicle condition data recording equipment

1. Target vehicle

Collecting vehicle information

2. CAIT Intelligent identification terminal

Car condition data transmission

3. Cloud Server

Credit data/ Insurance transactions, violation of regulations, repair and maintenance data

4. Trading scene
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used car/ insurance/ Vehicle loan
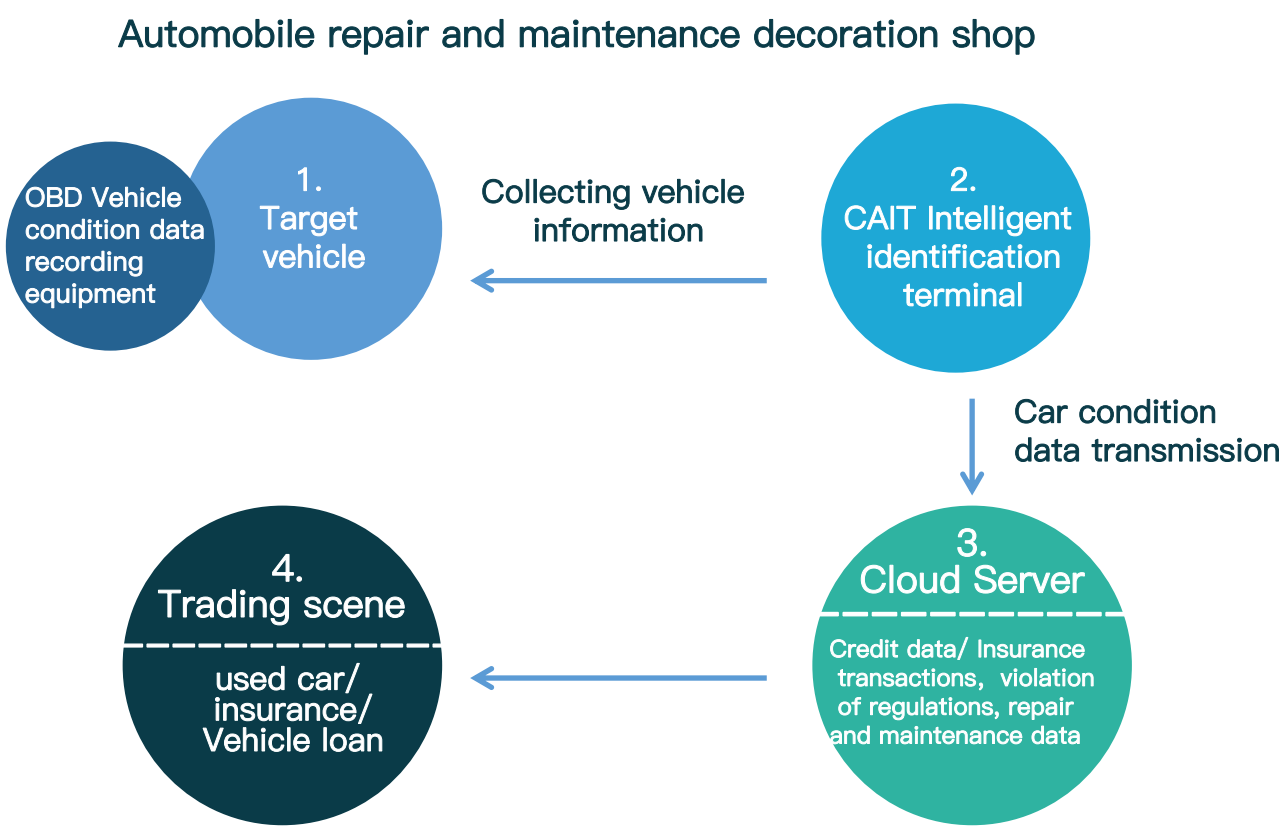
The CAIT intelligent identification terminal in the after car service can intelligently identify the license plate number, obtain vehicle violations, loans, used car sales and other data through the cloud platform, and can provide one–stop convenient service for the owner. Car hardware OBD can record car data in real time, allowing owners to know the car status information in real time.

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Two core technologies already existed in the Autochain, combined with the blockchain technology, will produce synergistic effects and form a huge eco-data for the automotive industry chain: the data on the chain combined with the CAIT intelligent identification terminal will provide higher efficiency and intelligence in the 4S.

2.4 Vehicle insurance scheme

Based on CAIT technology and OBD equipment, the Autochain can link the vehicle information data to form a truly credible and irrevocable vehicle information data system. Insurance personnel can conduct vehicle value evaluation based on the real data information of the vehicle and provide science evidence for insurance rating.

2.5 Vehicle financial scheme

In the used-car transaction, the business logic of the Autochain is dedicated to solving two core issues: the credibility of people and the authenticity of information on the status of vehicles. In the automotive financial application scenario, the business logic can still be continued and applied.

Machine learning algorithms based on artificial intelligence, and vehicle condition data on the chain, owner driving behavior data uploaded by OBD, and personal credit data provided by public credit API outside the chain, can make personalized automotive finance solutions for different owners and vehicle conditions.

2.6 After car maintenance

The Autochain team has been cultivating the automotive aftercare market for many years. Based on the mobile Internet and cloud computing infrastructure, it has built a complete automotive one-stop service platform and has reached more than 3,000 stores in China.

After the vehicle enters the 4S shop, the CAIT intelligent identification terminal can intelligently identify the vehicle license plate, send the information to the cloud server, and automatically print out the information list on the spot. The vehicle owner can scan two-dimensional code information by the mobile terminal, complete one-stop payment, illegal car insurance, car loan, second-hand car trading services.

After accessing the AUTOCHAIN, the transaction cost of obtaining the information of vehicle status and the owner's credit will be greatly reduced. The efficiency of four major business of used car trading, car loan, auto insurance, and fine payment of traffic violation in the one-stop service platform of the post market will be greatly improved.

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03.Ecosystem

3.1 Trustworthy distributed commercial ecological environment

3.1.1 Linking vehicle information right on chain

On-board OBD information: When the owner purchases AUTOCHAIN's on-board OBD hardware, OBD can record car status information and user driving behavior in real time. The owner can authorize OBD to upload information to the blockchain.

3.1.2 Unified digital authentication and Wallet

Considering that users of AUTOCHAIN services will be a very popular crowd, we will build two ways of on-chain trading and off-chain trading.

Trading on the chain uses decentralized wallets and exchanges. It is geared towards sophisticated blockchain players, who manage their own private keys and digital assets.

The transaction off the chain adopts a centralized trading platform to face small white users, allowing them to perform asset management through traditional registration and login instead of more complex keys. All assets are managed by chain, and 100% avoid the possibility of human manipulation.

3.1.3 Linking production Management Platform Vehicle ID on chain

The right verification of uploading to the chain: to convert the physical assets into digital assets, we need to implement the

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simple payment verification (SPV) to achieve the risk isolation and unique correspondence. A car correspond to an ID, data modeling around this ID, to ensure the uniqueness of the ID and data on the chain.

The distributed accounts provided by the block chain are transparent, traceable and unable to be tampered with. One of the most important features is a timestamp, and a timestamp book is encapsulated in the block, and anyone who tries to modify it will make a mistake. To ensure that the data and vehicle ID one by one corresponding, data can not be tampered with, vehicle status data and the owners between the right.

3.1.4 Linking vehicle maintenance information on chain

The 4S shop maintains the information and uploads each maintenance record to the blockchain by authorizing temporary data of the vehicle service provider.

3.1.5 Insurance department obtains dynamic authorization to access vehicle data

The purchase of auto insurance requires the provision of vehicle status information. The insurer can use the Token directly to purchase the vehicle condition data service, obtain a dynamic authorization to access the vehicle data, and invoke the vehicle condition data and owner information on the chain. Because blockchains guarantee the authenticity of this information and cannot be tampered with, this solution significantly reduces transaction costs compared to the past.

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3.1.6 Transfer of vehicle ownership in the used car market
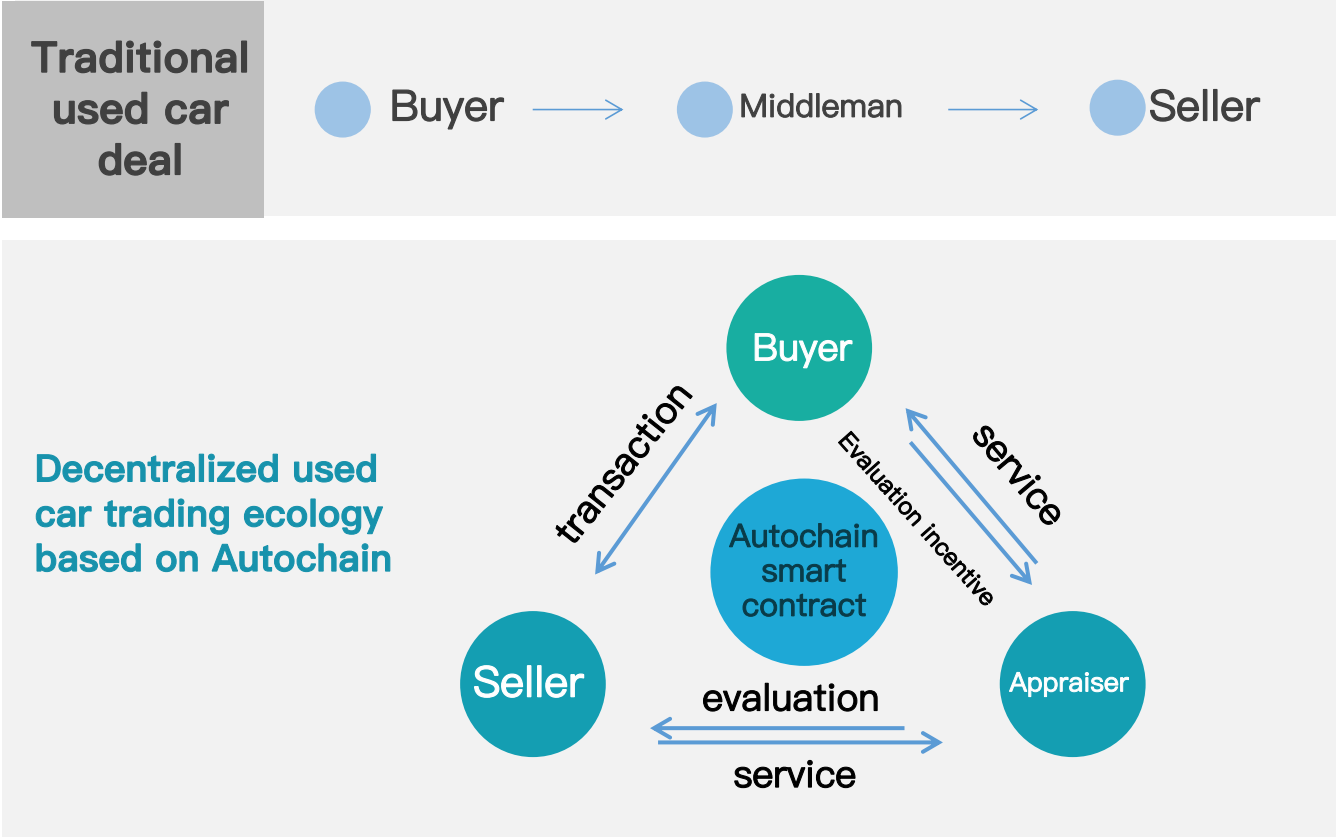
In the initial C2C transaction model, the intelligent contract of vehicle chain can be used to encourage the buyers and sellers to provide real information and make mutual comments in the form of AUC reward. At the same time, we will also introduce the role of the vehicle appraiser to give it a single vehicle assessment task. If the buyer and seller do not trust each other, any party can assess a single vehicle, and the appraiser will be invited to participate. The evaluator's credit rating will be provided by GXS. The assessor will be awarded a system Token award, after a successful completion of the assessment mission.

Compared with the traditional closed–loop trading of used cars, the block chain used car transaction using Token as a medium, really realized no intermediary business to earn the difference price. The increment of platform comes from Token increment and transaction fee.

3.1.7 API gateway service

AUTOCHAIN's second-hand car trading segment prefers a decentralized C2C model that requires a high level of mutual trust between the parties. We chose to access GXS's rich big data API on Gongxinbao to retrieve registered users' big data credit ratings to the AUTOCHAIN trading platform so that buyers and sellers of used cars can mutually verify each other's credit ratings, including bad public records and traffic accident verification. , verification of three elements, verification of bank card four elements, and education inquiries.

3.1.8 Third-party cooperation services

AUTOCHAIN collaborates with GXS Gongxinbao in an in-depth strategic partnership to gather data from multiple sources and build a big data image of the vehicle status and users.

AUTOCHAIN will connect the user's trading activities on the platform with the credit system of GXS Gongxinbao. The user's credit record in the vehicle transaction will be uploaded to GXS Gongxinbao. At the same time, we will regularly screen users on the platform based on the credit information provided by the GXS Gongxinbao. For users with lower financial credit ratings, the platform will handle warnings, restrictions, and freeze assets to prevent financial risks, providing a high-credit business environment for the platform.

3.1.9 Distributed data storage

The vehicle information data is all linked on chain. Based on the blockchain decentralization system, smart contract technology is adopted to form distributed data storage, which provides data support for the vehicle chain ecosystem.

3.2 Ecosystem participants

Automobile lifecycle and major participants
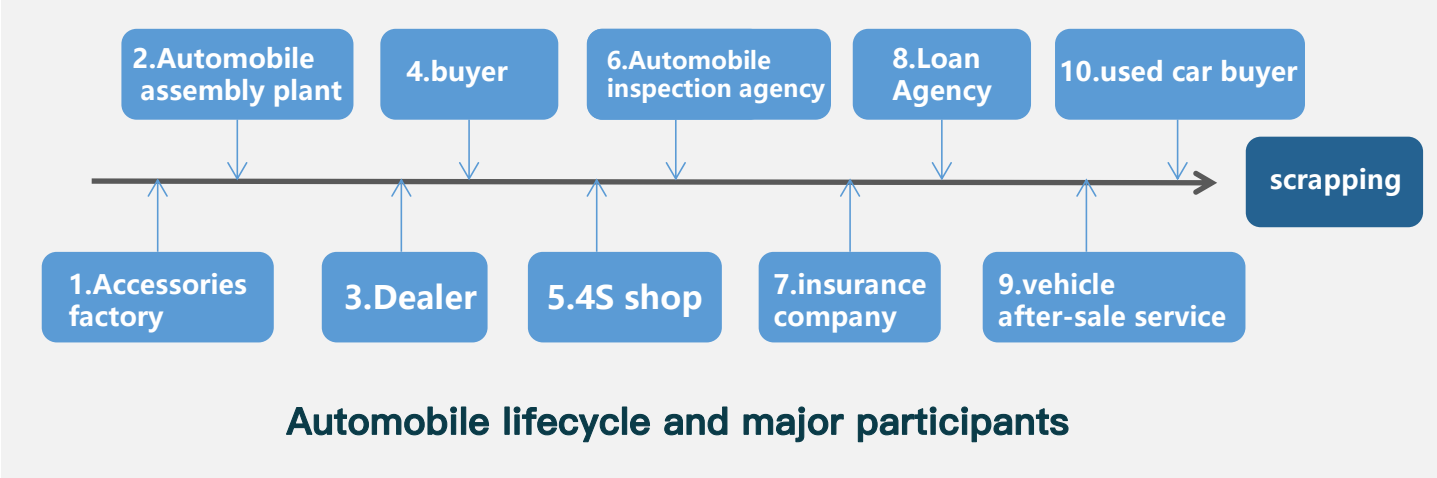
(1) Automobile manufacturers

Auto parts manufacturing, production and assembly agencies, providing automotive products.

(2) Auto dealer

Car sales, seeking effective new car demand.

(3) New car buyer

The owner of the car and one of the vehicle dealers, who also purchase various services in the automotive aftermarket.

(4) Used car buyer

One of the used car dealers needs to obtain real and reliable used car data information.

(5) Vehicle Inspection Agency

One of the participants in vehicle information collection, participating in vehicle valuation and certification.

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(6) Vehicle repair and maintenance organization

Service organizations for vehicle users, including vehicle repair, maintenance and decoration service agencies.

(7) Car insurance agency

Providing auto insurance for the owner of the vehicle, identifying and compensating for damage to property and personnel caused by an automobile accident, requiring fast and accurate information on the accident.

(8) Auto Loan Agency

Institutions that provide financial services such as car loans, consumption installments and financial leasing to automobile buyers, need to obtain the buyer's credit information.

3.3 Incentive mechanism based on AUC digital authentication

In the Autochain automobile ecosystem, the participating entities can obtain rewards for the AUC digital authentication based on the incentive mechanism, and build a Autochain communication chain through the publicity mechanism and incentive mechanism.

For example, the manufacturer of a car will link the vehicle's formation and vehicle information records to get AUC rewards; the car owner can obtain AUC rewards by uploading car transactions, driving information, and can be used to purchase car aftermarket services. Owners can also get AUC through the sale of second-hand car. Vehicle repair and maintenance angencies upload the repair and maintenance records onto the chain, these data will have important applications in automobile insurance and used car pricing, so as to get AUC reward.

3.4 Data mining mechanism

For ordinary members of the community, Token can be used to purchase AUTOCHAIN vehicle on-board hardware OBD, which is used to record driving behavior and vehicle status information in real time. OBD is enabled to calculate information on cloud computing platform by authorization. If the community service providers use Token to purchase owner's driving behavior data and car condition information, except the fee, the rest of the Token will return to return to the provider of data mining.

For the service provider members of the community, it is originally difficult to find the cash liquidity channel with the data scattered in their hand, but it is now also possible to obtain the mining revenue from the chain. This move will revitalize the data scattered in the hands of all parties to make it worthwhile.

In this way, a healthy automotive community ecology can be created.

3.5 Usage scenario of AUC digital authentication

After the use of used car transactions, AUTOCHAIN will be expanded to automotive finance, leasing, repair maintenance and other applications. The above scenarios are all built within the automotive community ecology.

For example, the purchase of auto insurance needs to provide vehicle status information, the insurer can use the Token directly to purchase the vehicle condition data service, and use

the vehicle condition data and owner information on the chain. Because blockchains guarantee the authenticity of this information and cannot be tampered with, this solution significantly reduces transaction costs compared to the past.

In addition to using the Token to purchase services that have already landed in the community ecosystem, in the future, we will also explore the chaining of equity in vehicle assets. With the Token, you can buy all the rights and interests of any vehicle, and smart contracts will automatically dispose of asset transfers.

For example, if you pay with digital currency, the private key generated automatically by the system will be transferred to you. The transfer will be completed automatically by the intelligent contract. You can also choose to purchase a portion of your car's equity and enjoy rental income from your car leasing. In the future, you can go to any car that shows rentable car, which is verified by the owner's credit card. Driving on the road, the intelligent contract from the car automatically settles the Token and destroys the private key based on the vehicle driving data. For all possible disputes and risks, we will write prevention rules into intelligent contracts in advance. Once a problem arises, smart contracts will be executed according to the trigger conditions.

3.6 Car community

In the AUTOCHAIN, Token became the blood within this ecosystem. People in any group hold Token, is both a consumer and a partner of the project, and an investor as well.

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It has a triple identity. In the past, under the organizational structure, the separation of triple identities led to the earning of any party must be the loss of other parties, it is belong to a zero-sum game. Under the Token economy, the integration of triple identities has caused the entire community to move toward a multi-sum game.

The establishment of AUTOCHAIN community is aimed at integrating the manufacturers, consumers and service providers in the automotive industry together and creating a community of interests.

In order to prevent speculators unrelated to the auto industry from pushing up prices, causing Token's use costs in real landing scenarios too high. We will set certain thresholds or auditing standards to ensure that Token will only be issued to Token owners, manufacturer members, service provider members within the auto community.

The held Token represents the rights enjoyed by members in the community and can be used to purchase various types of car services within the community's ecosystem.

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04.Technical realization

4.1 Block chain technical framework

Application layer

DAPP	WEB station	opening of API
CAIT terminal	OBD hardware	Cryptographic lock	Third–party data access

Extension layer

Smart contract	TOKEN	Multiple signature	IPFS

Autochain Protocol layer

Distributed Network Layer

Node

Node

Pow consensus

Node

Node

Node

Storage layer

Smart contract	Token	Multiple signature	IPFS
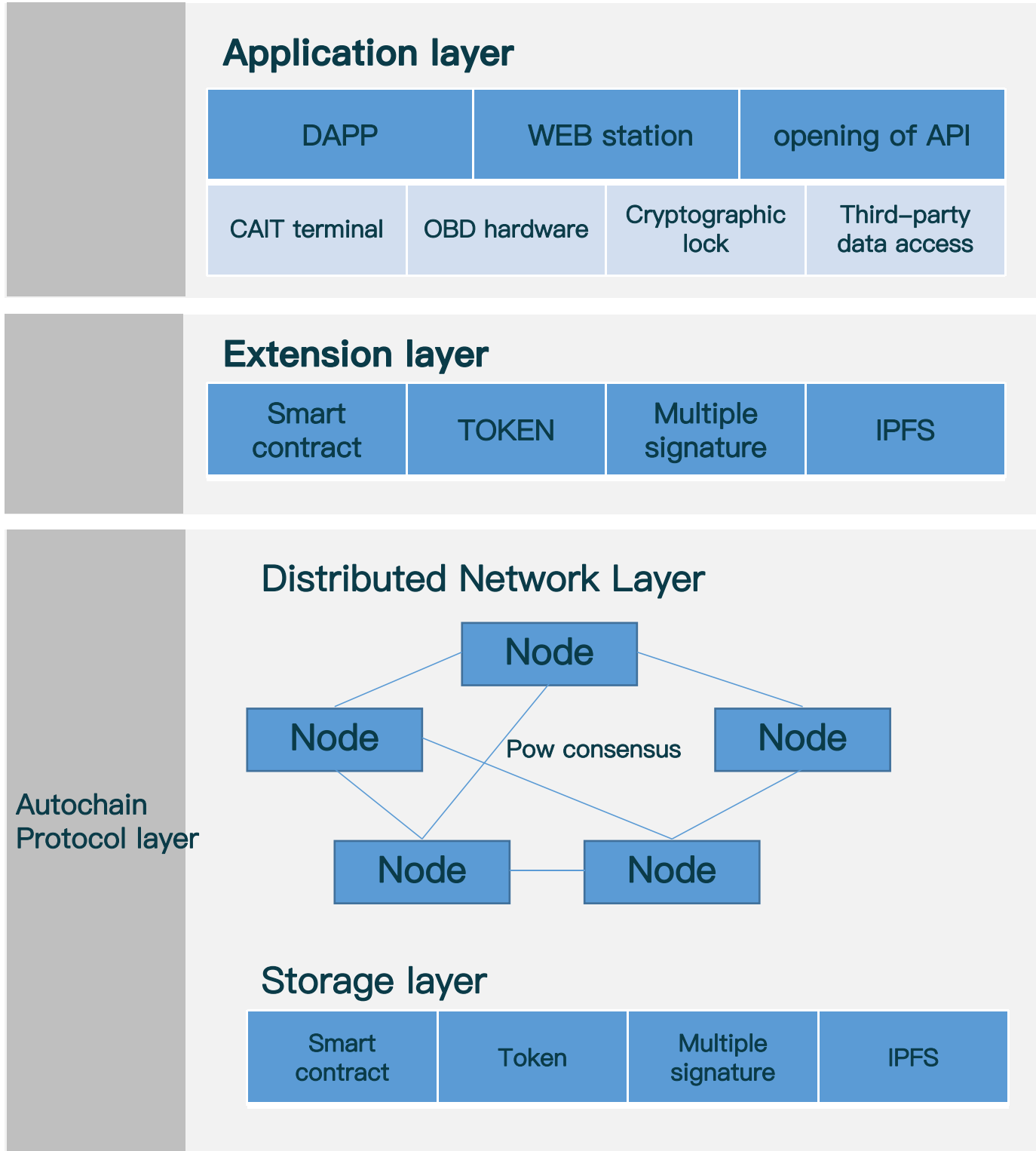
4.1.1 Overview of technology

AUTOCHAIN is an open source, publicly maintained decentralized

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computing system based on blockchain technology. It provides a decentralized Turing complete virtual machine to support the operation of intelligent contracts

4.1.2 Blockchain layer

The bottom layer of the AUTOCHAIN is the blockchain infrastructure layer. The technical solution is to ramify the Ethereum source code, and further modifications are made on this basis, including the generation of dynamic zone protocols, dynamic block security protocols, and data group embedding protocol, chain–level hierarchical archiving protocol, concurrent chain–level communication protocol, and distributed cross–chain synchronization communication protocol. Based on these protocols, the data dynamically changes with time, achieving higher performance than Ethereum on the basis of ensuring security. Meanwhile, there is an intelligent contract abstraction layer above the infrastructure layer, based on the PoW consensus mechanism, carrying out technical abstraction on different application scenarios of the automobile industry chain, and building a standardized and modular intelligent contract template for further combination and customization, for further combination, customization of intelligent contract for different industries,enterprises and application scenarios. On the basis of this, a general interface protocol of block chain is built, which is used to participate in the users of the automobile.

4.1.3 Autochain protocol layer

For the AUTOCHAIN, the network and data are the top priorities. The protocol layer of AUTOCHAIN will be based on three technologies.

5G network, ipv6 protocol and IPFS protocol. The 5G network, as a fifth-generation mobile communication network, has a peak theoretical transmission speed of several tens of Gb per second, which is hundreds of times faster than the transmission speed of a 4G network. The significance of the 5G network lies not only in bringing better and smoother network experience to people, but also the cornerstone of the age of Internet of Things and car networking. Based on the 5G technology network, data can be efficiently disseminated, realizing real-time data sharing in the Internet of Things. Huawei, a Chinese company, has launched the world's first and only 5G transmission standard, and is expected to start promoting it within one year.

IPv6 (Internet Protocol Version 6) is the next-generation IP protocol designed by the IETF (Internet Engineering Task Force) to replace the current version of the IP protocol (IPv4) and has almost unlimited network addresses. The reason why it is not based on the existing IPv4 network is that its network address resources are limited, which seriously restricts the development of Internet applications. Although the IPv4 address has been widely used through network address translation (NAT) technology, it still cannot cover the short board with low speed-constrained efficiency. In the Internet of Things and car networking era, every device must have a network address for rapid addressable transmission. Now that China has begun to fully promote the development of IPv6, it may be expected to realize a full network address update in a short period of time.

The ultimate AUTOCHAIN vehicle chain will be based on the IPFS

protocol for disposition of a new generation of Internet of Things. The TheInterPlanetary File System (IPFS) is a network transmission protocol designed to create persistent and distributed storage and shared files. It is a content–addressable peer–to–peer hypermedia distribution protocol. Nodes in an IPFS network will constitute a distributed file system. It is an open source project and has been developed by Protocol Labs since 2014 with the help of the open source community. IPFS is a point–to–point hypermedia protocol that can make the network faster, more secure, and more open. It is a global, point–to–point distributed version file system that attempts to connect all computing devices with the same file system.

4.1.4 Auto application layer

The bottom of the AUTOCHAIN is the basic service abstraction layer, which is a generic blockchain service module formed by reworking the intelligent contract, a is. At the same time, there are specific service modules for the underlying data of the blockchain, including blockchain browsing. The indexing service used by the device and the generic data auditing service used by the blockchain auditing node include the common basic functions of the smart contract of the AUTOCHAIN vehicle chain to save time for deploying customized smart contracts later.

Above this is the secondary application interface layer, which implements data docking between the basic service layer and the business application layer, focuses on the development of standardization, and establishes business system interfaces for different types of data. This has been accumulated in the actual

case for automotive manufacturers and automobiles. Vendors, automotive service providers, users and other trading entities, as well as commonly used web pages and mobile application interfaces, gradually accumulate more standard types.

4.1.5 IPFS

The InterPlanetary File System (IPFS) is a network transmission protocol designed to create persistent and distributed storage and shared files. It is a content-addressable peer-to-peer hypermedia distribution protocol. Nodes in an IPFS network will constitute a distributed file system. It is an open source project and has been developed by Protocol Labs since 2014 with the help of the open source community. It was originally designed by Juan Benet.

IPFS is a point-to-point hypermedia protocol that can make the network faster, more secure, and more open. It is a global, point-to-point distributed version file system that attempts to connect all computing devices with the same file system.

IPFS can fundamentally change the distribution mechanism of network data and has the following advantages:

Based on content addressing instead of domain-based addressing. The file (content) has the uniqueness of existence, a file is added to the IPFS network, and a uniquely encrypted hash value is assigned to the content based on the calculation. This will change the way we use the domain name to access the Internet.

Provides a historical version of the file controller (such as git), and lets multiple nodes use different versions of the file.

The IPFS network runs a blockchain, which is a table of hash values used to store Internet files. Each time there is network access, the address of the content (file) must be queried on the chain.

By using the incentive of FileCoin, each node has the motivation to store data. Filecoin is a storage network driven by cryptocurrency. Miners get Filecoin by providing open hard disk space for the network, while users use Filecoin to pay for storing encrypted files on a decentralized network.

4.2 PoW consensus mechanism

Commonly used consensus mechanisms under the blockchain technology include PoW, PoS, DPoS, Paxos, PBFT, etc. Based on different application scenarios and the characteristics of various consensus mechanisms, the following evaluation dimensions are used: the AUTOCHAIN vehicle chain system uses PoW technology to implement inter–node relationships. Consensus.

• Compliance Supervision: Whether to support super–privilege nodes to supervise all network nodes and data.

• Performance Efficiency: The efficiency with which the transaction reached consensus.

• Resource consumption: CPU resources, network output input, storage, and other computer resources consumed in the consensus process

• Fault Tolerance: Ability to prevent attacks and prevent fraud.

The PoW mechanism relies on machines to perform mathematical operations to obtain accounting rights. Resource

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consumption is higher than other consensus mechanisms and can be less regulated. At the same time, each consensus requires the participation of the entire network to participate in operations. Performance and efficiency are low, and fault tolerance is allowed. There is an error in 50% of the entire network.

AUTOCHAIN carries out mining operations based on the PoW mechanism, incorporates all aspects of the automotive industry into AUTOCHAIN, links multiple vehicle condition data, combines the non–deterrence characteristics of blockchain, decentralized trading mechanisms, and automatic disposal of smart contracts. Such advantages, build a complete vehicle portrait, greatly reduce the transaction costs in the automotive industry, used in the second–hand car trading, maintenance, consumables, financing, leasing, auto insurance and other commercial scenarios in the car market, using DAG digital structure to complete a The entire automotive industry chain ecological process.

4.3 Intelligent contract

Intelligent contracts can be viewed as a program that can be automatically deployed on a blockchain. The scope of coverage includes programming languages, compilers, virtual machines, events, state machines, and fault tolerance mechanisms.

The virtual machine is the operating environment of smart contracts in the blockchain. The virtual machine is not only encapsulated in the sandbox, but in fact it is completely isolated.

In other words, the code running inside the virtual machine cannot touch the network, file system, or other processes. Even smart contracts can only make limited calls.

A smart contract is essentially a program that has the potential to make mistakes and even cause serious problems or chain reactions. Need to do a good fault tolerance mechanism, through systematic means, combined with the isolation of the operating environment to ensure that the contract is implemented as expected within a limited time.

4.4 Multi–signature wallet technology

Multi-signature wallet
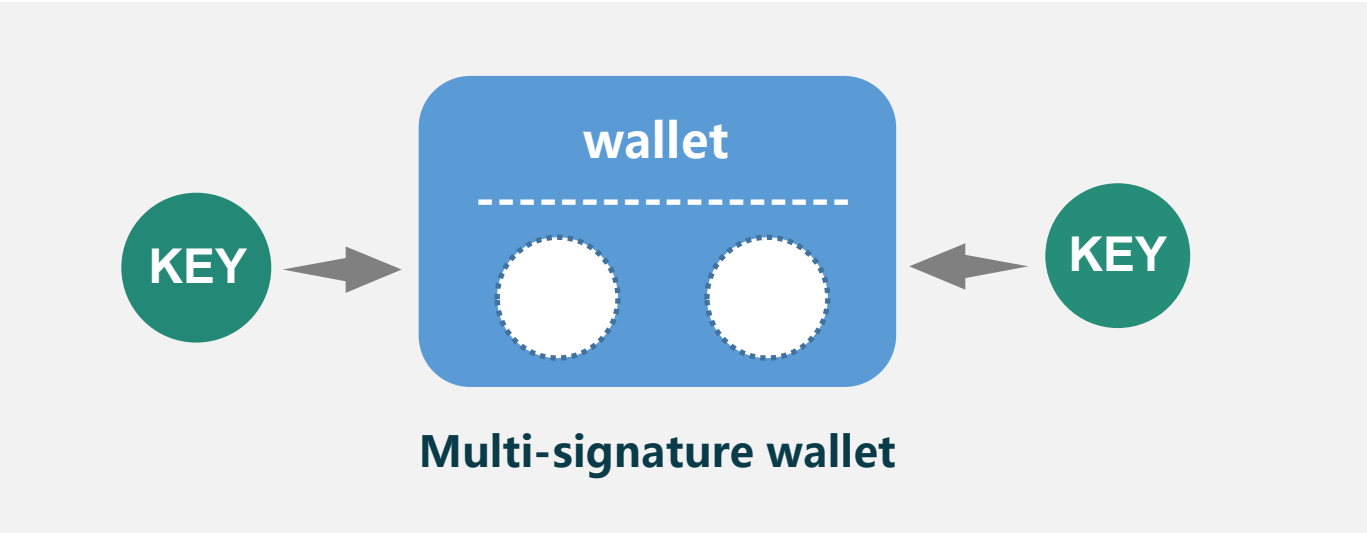
Multi–signature transactions. In a traditional Bitcoin account, each address in your Bitcoin address has a corresponding private key. A multi–signature address can have three associated private keys, and you need two of them to complete a transfer. In fact, you can also set it to 1/3, 5/5, 6/11, but the most common is a 2/3 combination.

The first major use is the protection of consumer rights. When you use a credit card, if you do not get related services, you can ask the merchant for a refund. If the merchant does not agree,

the credit card company can initiate an arbitration procedure. For Bitcoin 1.0, the transaction is irreversible. As long as you make a transfer, your money will be gone. In the Bitcoin 1.0 world, we think it is a good thing, but it damages the consumer and helps the business. In the long run, it can make businesses lower prices and benefit everyone. This is very true in some industries, but may not apply to other industries. We recognize that in Bitcoin 1.5 we need to provide a function – hosting.

The process of multi-signed hosting application to the Autochain is as follows: When Alice wants to send 200,000 AUCs to Bob to buy a car, first Alice picks a trusting arbitrator. We call him Martin and then Alice, Bob, Martin's tripartite multi-signature to send 200,000 AUC. Bob sees the payment, confirms the order, and sells the car. When Alice receives the car, she can create a 200,000 AUC multi-signature for Bob to complete the transfer. Then, Bob signs it again, which completes the transfer. In addition, Bob may choose not to sell, in which case he creates and signs a 200,000 AUC refund transaction to Alice, allowing Alice to sign and post. So, what if Bob claims to have sold, but Alice refuses to pay? Alice and Bob will contact Martin and let him decide who is right or wrong. Which side Martin favored, he created a deal for himself 10,000 AUC and 190,000 AUC of the other party, and the other party provided a signature to complete the transfer.

4.5 Off-chain trading platform

We will provide a full platform trading environment, PC, Mac, applets, iOS, Android.

- Adopt memory matching, extremely fast message queue distribution, and Ringbuffer message processing architecture to ensure fast transaction processing;
- Ensure data security through offline cold storage, incremental backups per hour, and full daily backups;
- SSL–encrypted transmission, system penetration test twice a year, APP reinforcement, providing bank–level security;
- GSLB distributed clustering, real–time online monitoring, 7x24–hour transaction guarantee, API interface service.

4.6 On–chain DApp

4.7 Oracle Machine Data Feeder

Oracle Machine Data Feeder is a reliable data acquisition service. It can obtain any data from the chain, such as car prices, exchange rates, GDP, etc., by establishing a multi–format predictor, and then transmit the data into smart contracts. Using these out–of–chain data, we can improve the platform's information processing capabilities. For example, when the average price of a single hand of the BMW 5 Series is reduced by 10%, the smart contract will automatically revalue the used car price of the car.

4.8 Other core technologies

4.8.1 CAIT intelligent identification terminal

The CAIT intelligent identification terminal in the rear–car service can intelligently identify the license plate number, obtain vehicle violations, loans, used car sales and other data through

the cloud platform, and provide one-stop convenient service for the owner.

4.8.2 OBD on-board vehicle hardware

On-board car hardware OBD can record car data in real time, allowing owners to know the car status information in real time. In the above two application scenarios, the combination of blockchain technology will produce synergy effects: the data on the chain will be combined with CAIT to intelligently identify terminals, providing more efficient and more intelligent post-car services in 4S (violation of rules, personalized auto insurance services. Etc.) The vehicle owner authorizes the on-board OBD to allow the vehicle status data to upload the blockchain via cloud computing. If a service provider purchases data services in the vehicle chain, owners can obtain data mining revenue;

4.8.3 Password car lock

In the future, we will configure the key locks for all the chained cars. Only when you have the private key of the key lock can you start the car. Having a car, that is, owning the car's unique private key. The vehicle trading through AUTOCHAIN is actually the ownership or use right of the trading private key.

05.AUC digital authentication

5.1 The function and value of AUC digital authentication

AUC is the Token of AUTOCHAIN's trading ecology and is the most important value medium in the used car trading ecosystem:

(1) Use value

- Use AUC to purchase services and assets on the AUTOCHAIN platform;
- Use AUC to pay for service fees on AUTOCHAIN;
- Provide AUC rewards by providing vehicle data.

(2) Buyback and Destruction

- Each quarter, AUTOCHAIN will use 40% of its net profit to repurchase AUC and destroy it publicly;
- After getting on–line C2C sharing car rental, the car rental income will be proportionately allocated to the vehicle equity owner AUC;

With the growth of AUTOCHAIN, the demand for AUC will continue to increase, and the AUC will be destroyed on a quarterly basis. The value of a single AUC will inevitably increase.

For the AUTOCHAIN project, profits no longer need to be increased by becoming middlemen, but rely on platform service fees and appreciation of the Token, thus completely changing the pattern of the traditional second–hand car trading market.

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5.2 AUC digital authentication allocation scheme

Token Distribution plan
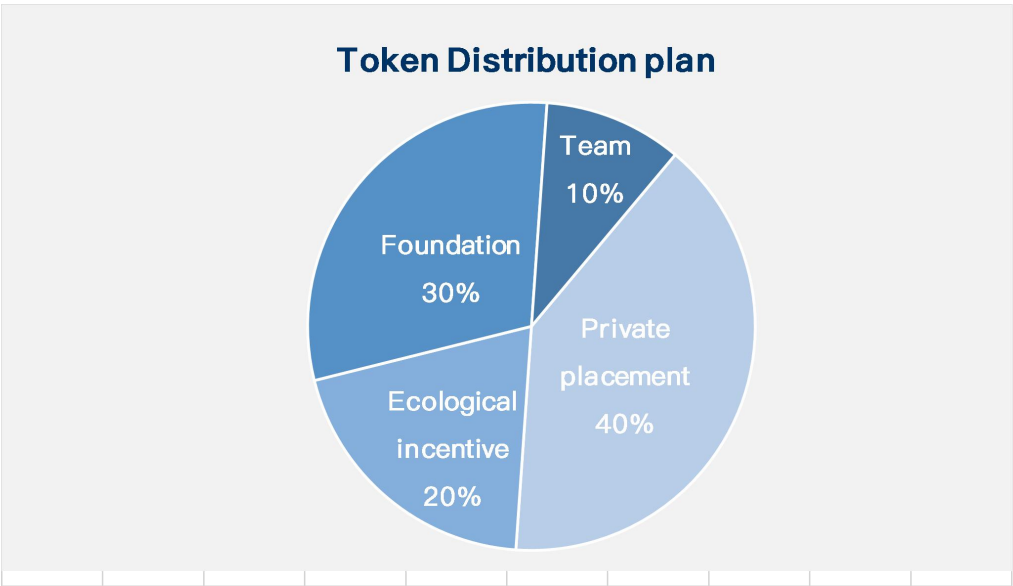
The total amount of AUC is 10,000,000,000 pieces:

• 40% private placement – Private placement for institutional investment

• 20% eco–incentives – used to reward individuals and organizations that contribute to the ecology of the car chain

• 30% Foundation – Governance Foundation Daily Governance

• 10% team – for the day–to–day development, operation, and motivation of the team

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06.route map

Third quarter of 2018

1, the public chain infrastructure

Complete the basic functions of the public chain, open the API, and perform performance and security tests.

2, the establishment of ecological community

The development of web pages and mobile app as a container for the community, combined with market operations began to divert to the community.

The fourth quarter of 2018

1, DAPP MVP

Developed a MVP version of DAPP based on the public chain and launched it into the community for testing.

2. Offline marketing

Through the promotion of terrestrial marketing, the service providers in the more post–car market will be integrated into the ecology of the car chain.
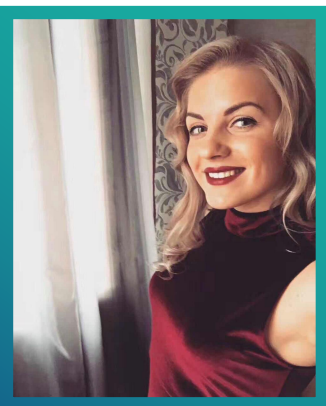
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07.Team introduction

7.1 Founding team

Tim Matheoda
CEO

Bachelor of Science in Management from the University of Massachusetts and Master of Finance from the School of Economics and Management at Auburn University. He has 11 years of marketing experience. He has been the director of marketing operations for several multinational automotive companies, he has received millions of financing to establish second–hand car market project carokfine. He has won ten millions of financing to establish finance project imcarfor. As co–founder of fiked capital, he entered the digital currency market in 2010. He has a unique view of the blockchain and has published applications and investment in the field of automobile chain block on "Maigeshi".

Kamilla autochain
COO

He graduated from the St. Petersburg State University and received a full scholarship from Xiamen University in 2004. He is good at English, Chinese, Korean, and other international languages. He founded the International Students Automotive Union Association as the chairperson. He joined the Russian well–known game company 101xp in 2008 and has been developed a car game to a

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million user level from 0 to 1.He has 8 years of experience in the automotive industry operations. He once served as director of operations for the United States well–known automotive media and served as public director of several multinational car companies. He specializes in the company's daily integrated business decisions.
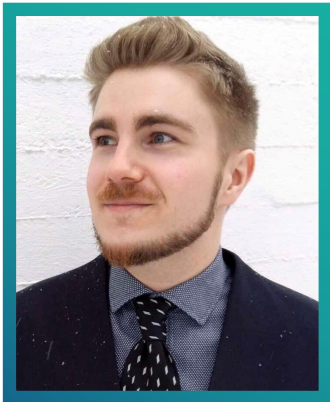
Janne Mustonen autochain
CTO

He graduated from the University of California, Los Angeles, and joined Google in 2006. He has published technical papers in internal forums and won technical innovation awards. Now mainly responsible for the company's comprehensive technical work.

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Wu Shichun

Founder and investor of Meihuatianshi

Internet veterans, Baidu early Engineer, founder of Kuxun, Shishenyaoyao, Jidiao, famous angel investor, successfully got a thousand times return on the investment of "Dazhangmen".

He is called the fast wolf in the jungle and the king of contacts in the internet circle. His style of investment is fast, accurate and stable.
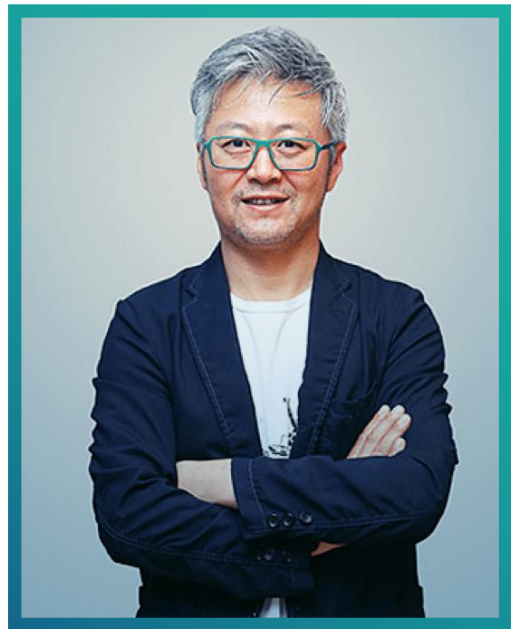
Wang Donghui

Amoeba capital

The founder and management partner of Amoeba capital. Before the establishment of amoeba capital, he was working as the executive director and chief financial officer of the Kingsoft software between 2005 and 2011. Prior to joining Kingsoft in 1997–2005, Mr. Wang once worked for Ernst & Young and PWC accounting firms. Mr. Wang holds a Master of Business Administration degree from the Victoria University of Technology, Australia

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Qiaoquan

President of the Asia–Pacific region of the American auto parts remanufacturing Association

Liu Chaoyang

Former Tencent vice president Suishi capital founder

Previously, Served as an Overseas Group Manager of Sheng (Hong Kong) International Group, 2000–7– 2010–3 served as vice President of Shenzhen Tencent Computer Systems Co., Ltd. and General Manager of Advertising Business Group, became an Angel Investor in 2010.

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Guanyong

Former Tencent Sales Director
Founder of Wheel

As a 4-year-old company, marching into the mobile internet, the company successfully launched mobile apps for car service such as wheel check app, wheel test driver app and wheel community app. It has accumulated over 100 million real car owners

Lin Jinwen

Former Changjiu car ceo, founder of Le Che Bang

The founder and CEO of Le Che bang, the legal representative of Shanghai Xiang Lu Network Technology Co., Ltd., is the CEO of the youngest famous automobile dealer group in China.

Prior to the founding of Le Che Bang (Shanghai Xiang Tu Network Technology Co., Ltd.), Lin Jinwen, the CEO of Changchun Automobile, a well-known domestic car dealer, took the group from annual sales of several billion RMB to annual sales of nearly 30 billion The industry is considered a legend.

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Liu Xiaoke

Senior Vice President of Yiche

Liu Xiaoke was born in 1980, before joining the Yiche, he has served as director of the Sohu automotvie content operation and product center, general manager of Phoenix automotive division, sina.com.cn automotive division general manager, he is a veteran in the domestic automobile industry, has rich resources and contacts and unique views on the development of the Internet industry of automobile.

Ma Chenyi

founder of Che Dong Hui

Ma Chenyi, who was oncethe CMO of Youyou car rental, is now the founder of the Che Dong Hui. He is known as "poet" in the field of automotive Internet. Since the start of his business in 2008, its business scope has included O2O, media companies, cultural companies and mobile terminals. A total of three companies have been set up for a total of six startups. With the exception of Youyou car rental, all other were initiated and led by Ma Chenyi. So far, 6 of them are still running steadily.

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Zhai Yaogang

Che Jian Ding first launched the vehicle history information service in China in 2014, and it is the first vehicle history information service provider in China. Providing information services for more than 90% of the second-hand car trading platform, more than 50 thousand second-hand car dealers and about 500000 second-hand car consumers, Che Jian Ding's goal is to make the second-hand car trading more transparent, and to provide information services for the second-hand car finance, car manufacturers and 4S shop dealers, used car detection agencies.

Ma Songhai

The United States President of Asia Pacific JB auto protection god fickert company

Mr. Ma Songhai has many years of experience in the post car market, and has a profound and unique personal understanding of the car chain.

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Xu Zhu

Now serving as the founder and chairman of the Board of Beijing Autobase Automotive Services Chain Co., Ltd., known as "car washing crazy." Chairman of Asia Pacific Car Wash Association, Chairman of China Car Wash Network, drafter of national standards for water use in China's car wash industry, president of Environmental Car Wash Sub-Alliance of Strategic Alliance for Emerging Industries of National Development and Reform Commission.

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08.Foundation Governance Scheme

(1) Executive committee

To study and formulate long-term plans, formulate constitutions and management systems, conduct feasibility studies and approval of new projects, and manage daily operations.

(2) Risk Control Committee

Research and formulate risk control strategies, develop risk control standards, review overall operational risks, convene project risk review meetings and organize the release of audit results.

(3) Remuneration and Personnel Committee

To formulate and revise the remuneration and incentive plan, review the establishment of the organization and the establishment of posts, and conduct personnel recruitment.

(4) The Audit Committee

Responsible for operation audit, financial audit, code audit and TOKEN destruction.

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09.Risk and Disclaimer

(1) this document is only used to convey information to a specific object who wants to know project information. It does not constitute any investment guidance in the future, nor is it any form of contract or commitment.

(2) once participants are involved in the Token distribution plan, that is to say, to understand and accept the risk of the project, and to take all the corresponding consequences for the individual. (3) the project team clearly indicates that it does not undertake any return, and does not undertake any direct or indirect losses caused by any project.

(4) the Token involved in this project is an encrypted digital code used in the transaction link, which does not represent the ownership of the project, the right of return, or the right to control.

(5) because of the digital currency itself has a lot of uncertainty (including but not limited to: countries treat digital currency regulatory environment, industry competition, technical loopholes in digital currency itself), we cannot guarantee that the project will be successful, the project has a certain risk of failure, the project Token has zero risk.

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(6) although the team will work hard to solve problems that may be encountered in the process of promoting the project, there will still be uncertainties in policy. The housework must understand all aspects of the block chain before supporting it, and participate rationally in the premise of fully understanding the risks.

10.联系我们

AUTOCHAIN is about to open the global public sale. If you need to know the details of the project or community, WeChat will be asked to scan the two-dimensional code below and add a AUTOCHAIN customer service for consultation.

Autochain车信链

扫一扫上面的二维码图案，加我微信

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