

# DE Public Chain White Paper

The world's leading public chain infrastructure and application ecosystem

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DE Blockchain Technology Lab - 2023

# Preface

Distributed Digital Ecological (DE) public chain white paper. This white paper aims to show the background of the birth of our new public chain DE, and introduce in detail various features and advantages of DE, including decentralized finance (DeFi), decentralized authentication, application of NFT, decentralized insurance, decentralized social finance, combination of blockchain and artificial intelligence, combination of blockchain and Internet of Things, decentralized storage, cross-chain interoperability, scalability etc.



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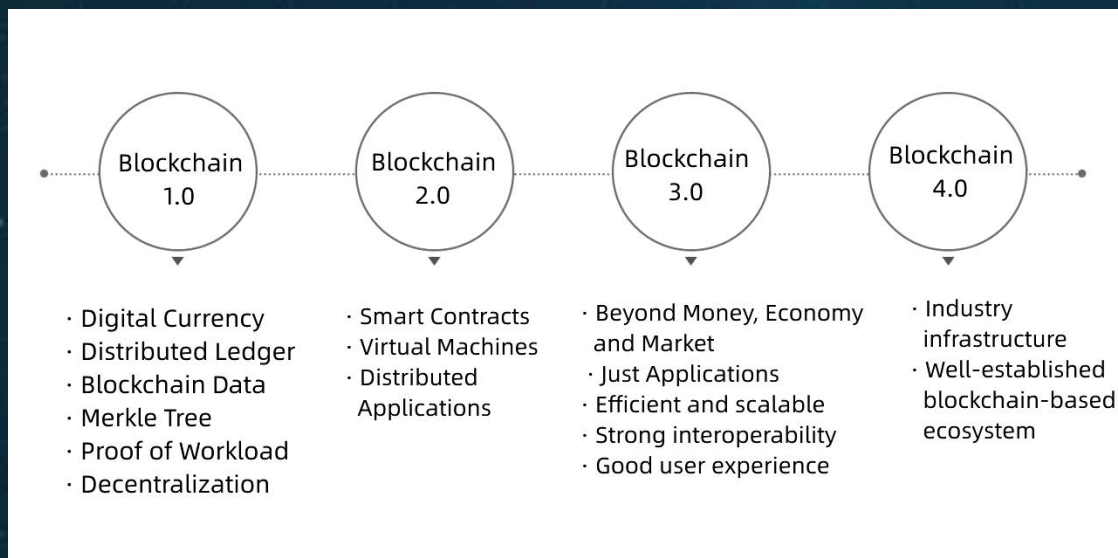
# **Chapter I Blockchain and Technology**

## **Applications Market Overview**

### **1.1 Introduction to Blockchain Technology**

Blockchain technology originated from the seminal paper "Bitcoin: A Peer-to-Peer Electronic Cash System" published in 2008 by a scholar under the pseudonym "Satoshi Nakamoto". In a narrow sense, a blockchain is a distributed ledger in which blocks of data are sequentially linked in a chronological manner to form a chained data structure that is cryptographically guaranteed to be tamper-proof and unforgeable. In a broader sense, blockchain technology is a new distributed infrastructure and computing paradigm that uses a block-chain data structure to verify and store data, a distributed node consensus algorithm to generate and update data, a cryptographic approach to secure data transmission and access, and a smart contract composed of automated scripting code to program and manipulate data.

Currently, blockchain technology is being described by many large organizations as a major breakthrough technology that will revolutionize the way business and even organizations operate. The technical foundation of blockchain is distributed network architecture, and it is because of the maturity of distributed network technology that decentralized, weakly centralized, decentralized and shared, consensus and shared organizational and business structures can be effectively established.



Today's blockchain technology has undergone several iterations:

☑ **Blockchain 1.0 - Digital Currency** In early 2009, the Bitcoin network went live. As a virtual currency system, the total amount of Bitcoin is limited by the network consensus protocol, and no individual or institution can modify the supply and transaction records of it at will. The underlying technology that supports Bitcoin's operation, the blockchain, is actually an extremely clever distributed shared ledger and peer-to-peer value transfer technology that could have as much potential impact on finance and all industries as the invention of double-entry bookkeeping.

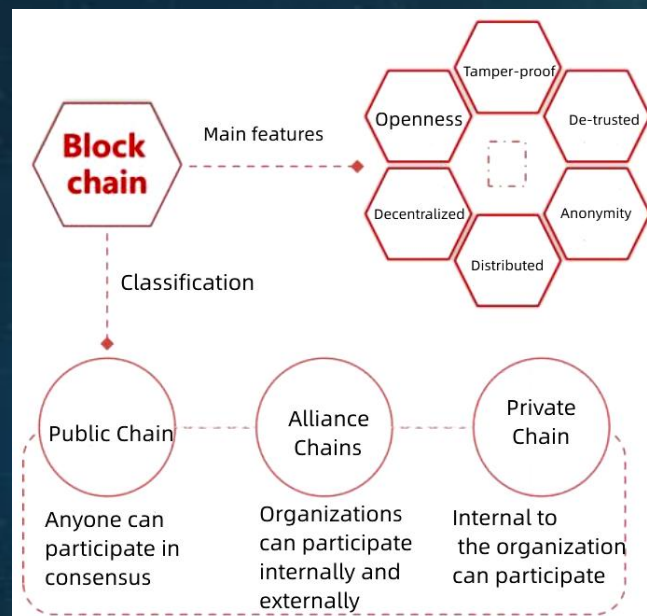
☑ **Blockchain 2.0 - Smart Contracts.** around 2014, the industry began to recognize the important application value of blockchain technology, trying to create a shareable technology platform and provide BaaS (Blockchain as a service) services to developers, greatly improving the speed of transactions, greatly reducing resource It also supports various consensus algorithms such as PoW, PoS and DPoS.

☑ **Blockchain 3.0 - Blockchain application extension.** after 2015, with the rise of blockchain 3.0 technology based on DAG data structure like Byteball and IOTA, blockchain system is more efficient, scalable, interoperable, and has better user experience than before, and its application is further extended Its applications have been further extended to medical health, IP copyright, education, Internet of Things, sharing economy, communication, social management, charity, culture and entertainment, and other wider applications.

☑ **Blockchain 4.0 - Improving the Ecosystem.** Blockchain 4.0 technology based



on the HashNet data structure is gradually gaining attention in the industry. The consensus algorithm based on this data structure can achieve a qualitative leap in transaction throughput and scalability, thus further supporting blockchain as the infrastructure of a certain industry and forming a perfect ecosystem based on blockchain, which will widely and profoundly change people's way of life.



As people's awareness of the scope of application and usability of blockchain technology increases, people carry out the R&D and implementation of blockchain underlying core technology, on-chain applications and scenario landing with great enthusiasm. Currently, people invest great enthusiasm in carrying out R&D and application of blockchain technology. Among the teams engaged in blockchain research and development, the proportion of teams engaged in research of blockchain underlying technology is about 20%, and the proportion of teams using blockchain for various practical application scenarios and vertical industries is 80%, and the underlying protocol can create Token market value relative to the application layer, in addition to dispersing the application layer The traditional model of data-centered Internet. Under the blockchain system, the project itself in the application layer becomes a full service party and no longer owns the user traffic and data value, the value of these personal data is dispersed to the users, and the underlying protocol will be more valuable compared to the application layer.

## **1.2 Design Ideas and Application Prospects of Blockchain**

The basis of value interaction is the establishment of trust between two parties. The revolutionary aspect of blockchain technology is that it realizes a new way of trust. Through the design innovation at the technical level, it enables the trust relationship between human and human in the process of value interaction to be converted into trust between human and technology, even to the extent that certain aspects are executed automatically by the program, and business activities can be realized at a lower cost.

### **1) Design ideas at the economic level**

Cost reduction is an important design idea of blockchain technology. In the blockchain system, participants can conduct transactions without the need to know basic information about each other, enabling "trust without trust" and changing the traditional model of third-party-centered trust. There are many innovative aspects of this design model, two of which are noteworthy: first, transaction trust is determined by machines and algorithms. Blockchain solves the problem of mutual trust in anonymous transactions by building a transaction system that relies on machine and algorithmic trust. All participants will be identified through cryptographic principles in an environment where no trust relationship needs to be established, and mutual trust will be achieved through consensus mechanisms. Second, the transaction process can be executed automatically by the program. Blockchain automatically executes the contract reached by both parties through programmable smart contracts, which excludes human interference factors and systematically prevents any party from repudiation. Thus, it promotes the economic society into an intelligent state and realizes a qualitative leap in the current economic transaction system.

Based on the "weak centralization" feature of blockchain technology, the existing economic system can be separated from the current institutional constraints or third-party institutions endorsement, and both parties can directly realize value delivery. This "weak centralization" feature can effectively reduce transaction costs, improve transaction efficiency, and reduce the friction caused by the consistency of transactions.



## **2) Technical level design ideas**

Generally speaking, blockchain can be seen as a set of distributed data storage system with the participation of multiple parties and reliability. Its unique features are: first, the participation of multiple parties in the act of recording, i.e., all parties can participate in the recording; second, the participation of multiple parties and common maintenance of data storage, i.e., all parties participate in the storage and maintenance of data; third, the data and contracts are stored through the chain, and can only be read and written, and cannot be tampered with. In application practice, such a system can realize information sharing, consensus and sharing among all participants, and can become the basic technical architecture for various business practices and organizations.

## **3) Broad application prospects**

Blockchain will have a huge impact on the existing economy and society, and is expected to reshape the shape of human Internet activities.

Blockchain brings the technical means for efficiency improvement and cost reduction, and provides new ideas for economic and social development and governance. Around the blockchain system, rich products and services can be created, and people can collaborate on a large scale without mutual trust and without geographical restrictions. As a result, a whole new economic era is unfolding in front of the public. One optimistic prediction is that global blockchain technology adoption will reach a new level by 2025. To summarize:

- The core problems solved by blockchain technology are trust cost and data security. Blockchain has tamper-evident characteristics, and the core needs in the field of authentication and intellectual property rights are fully in line with these characteristics and therefore have a huge market.
- At present, globally, there are few hybrid products based on the underlying application technology platform of blockchain and can provide low-threshold chain and customized blockchain services. There are only a few hybrid products based on the underlying application technology platform that can provide low-threshold on-chain and customized blockchain services. The market positioning is still in the market of sellers with high technical threshold.

- Many service providers and government departments see the strong potential behind blockchain and recognize that the technology and the commerciality of blockchain when landed can help enterprises to clear their minds and develop their potential. However, due to the limited resources and technologies available, the blockchain enterprise application and development cycle is long. There is an obvious market demand for blockchain to be quickly onboarded and applied, and to maximize profitability in the changing norms and opportunities that continue to emerge.

- The underlying technology of public chain is more favored by capital than the application development layer. The development of blockchain 3.0 is still in the initial stage, and the whole standard and protocol architecture is still in the development and perfection stage. At this moment, the technical cycle and development stage determine that venture capital and financial resources will be more inclined to the underlying technology and naturally flow in.



## 1.3 Industry pain points and opportunities coexist

At this stage, various public chain underlying protocol projects are emerging, but most of the underlying protocol projects are iterated on the basis of ethereum, which has a certain gap with the standard of blockchain 3.0, not to mention blockchain 4.0. Most of the teams carrying out blockchain landing business are limited by the performance, applicability and stability of the underlying protocol, and are currently in the early exploration stage. Although a large number of industry applications can be seen in the future, more than 98% of the projects will be eliminated by the times while the underlying protocols keep changing. To summarize, the following problems exist in blockchain technology:

- **Low performance:** Low performance is one of the main challenges facing blockchain technology today. The blockchain used by Bitcoin can theoretically process up to seven transactions per second, and Ether has improved slightly, but is also far from adequate for the application. A simple DApp application, CryptoKitties, for example, slows down Ether transaction throughput and dramatically increases transaction fees. Today's consumer applications must be able to handle tens of millions of active users per day. In addition, some applications only make sense when they meet a certain transaction throughput, so the platform itself must be able to handle a large number of concurrent users. The transaction latency of the montage will discourage users and make applications built on the blockchain much less competitive with existing non-blockchain alternatives.

- **High barrier to use:** Today's blockchain applications are built for just a few technical people who know how to use the blockchain, not mainstream consumers. Almost all blockchain applications require users to run blockchain full or light nodes. The higher learning costs seriously hinder blockchain's progress to the masses. For example, CryptoKitties, an ethereum-based game, may be the easiest DApp ever to use, but it still requires users to install the Metamask light wallet browser extension, and users also need to know how to securely purchase Ethers and use it with Metamask, which significantly impacts the user experience. To attract widespread use by the general public, blockchain apps should be as easy to use as today's internet and mobile apps.

- **High cost of use:** The high cost of use of blockchain technology is another major barrier to its mainstream adoption, and also limits developers who need the flexibility to build free services. In contrast to the Internet, blockchain technology



should be able to support free applications. Making blockchain free to use is the key to its widespread adoption. A free platform will also enable developers and enterprises to create valuable new services.

- Platform lock-in: As with the early days of any computer technology, blockchains suffer from a serious "platform lock-in" problem. Developers must first decide which blockchain to adopt and then write code for that particular platform, which makes switching applications to other blockchains very difficult. Rather than being locked into one blockchain technology, developers need these applications to run on multiple platforms to improve the efficiency of development reuse.

- Narrow application scope: Currently, people have high expectations for blockchain, especially with the increasing price of crypto-digital currencies, and major news media have drawn a very rosy blueprint for blockchain. But in reality, blockchain technology is still in its infancy, and most blockchain services lack rich functionality and have a narrow range of applications. There is also a lack of corresponding incentives in the blockchain development community.

Therefore, there is an urgent need to carry out research on the underlying protocols of blockchain, overcome the underlying core technology of public chain, redesign or improve each dimension of blockchain technology, solve and meet the problems of transaction congestion, high transaction fees, long transaction confirmation time, weak resistance to quantum attacks, poor anonymity of node communication, lack of transaction anonymity protection function, weak cross-chain communication and multi-chain integration, large storage space, etc., optimize and enhance the protocols and mechanisms of blockchain technology at each level, realize truly practical support protocols for each level of value transmission network, provide infrastructure for various value transmission applications, and provide underlying development platform for various DApp development. In addition, it will optimize and enhance the protocols and mechanisms of blockchain technology at various levels, realize the truly practical support protocols for each level of the value transmission network, provide infrastructure for various value transmission applications, provide the underlying development platform for various DApp developments, and provide a realistic and feasible technical way to build a global value Internet.

## 1.4 The strong birth of DE

Since 2020, the epidemic has pushed the digitalization process of countries and industries around the world to accelerate, which in turn has pushed Internet services to further upgrade as well: not only to meet the daily needs of individual users, but also to gradually meet the work needs of commercial organizations, including enterprises, and a large number of public sectors, i.e., the need to develop from the consumer Internet to the industrial Internet. The development of the industrial Internet has raised the requirements for the credibility, openness, agility and collaboration of the relevant information infrastructure, and requires that production factors such as data can flow and be allocated in a more reasonable manner. Since 2020, based on the thinking of digital development brought by the epidemic and the promotion of digital currency exploration by global central banks, governments have strengthened the strategic deployment of blockchain technology.

In 2022, the magnitude of blockchain public chain market spending will remain high despite the unfavorable premise of multiple international headwinds leading to overall enterprise IT spending cuts and a global economic slowdown. According to IDC's Worldwide Blockchain SpendingGuide, 2022V1 report, the overall global blockchain market spending (federated chain or distributed ledger technology spending only, excluding virtual currency-related spending) reaches \$4.28 billion in 2022, with a five-year compound annual growth rate (CAGR) of 55.3% in Asia Pacific and 57.1% globally. The five-year CAGR is 55.3% in Asia Pacific and 57.1% globally, with global spending reaching \$14.4 billion by 2023; by industry spending, the financial industry is investing the most in blockchain solutions, but the manufacturing and resource industries will grow the fastest during 2018-23, with a five-year CAGR of 60.5%; specific application scenarios are focused on cross-border payments and clearing. The specific application scenarios are focused on cross-border payments and clearing, trade finance, post-trade settlement and regulatory compliance.

From the direction of the next technical research of the major blockchain public chain platforms, the consensus mechanism and the optimization of the performance of the single chain of the blockchain are close to perfection, and in the future, it is expected to continue to make breakthroughs in a wider range of segmentation technologies such as privacy protection algorithms, cross-chain technology, multi-chain parallel computing technology, distributed storage, and



distributed digital identity.

Entering 2023, the development of public chain ushers in new trends and new opportunities. Currently, if the traditional business model wants to liberate the productivity of data elements, it needs to solve three very core problems: first, it needs to provide a solution for secure storage, second, it needs to provide some means of credible transmission, and third, it needs to provide a mechanism for collaborative production. Therefore, one of the important trends and missions of blockchain in 2023 is how to exploit its technical capabilities and how to deeply integrate with other frontier technologies, so as to effectively overcome the above three problems of data elements that need to be broken through, and realize that the property rights of data elements can be defined, the values can be stored, and these values can also be evaluated and effectively circulated, and finally The ultimate goal is to achieve the full liberation of data productivity.

Based on the above background, DE Blockchain Technology Lab has created a new generation of public chain infrastructure - DE.

DE is committed to building a blockchain-based "consensus trust" mechanism and cryptographic algorithm to provide the market and developers with a public chain infrastructure with scalability, high performance, high security, high-speed access and efficient operation. In addition, programmable smart contracts are seamlessly compatible with the Ethernet network, which will reduce development and migration costs for decentralized DApps created on DE chains (such as privacy expansion, cross-chain transactions, social, payment, entertainment, e-commerce, finance, chain reform, DeFi, Swap, lending, NFT, Web3.0, metaverse, etc.). And remove the interference of intermediaries in specific business scenarios to form a new digital currency system, payment methods, and credit mechanisms to build a high-efficiency, low-cost, and safer value ecosystem for the world together.



# Chapter II DE Public Chain Overview

## 2.1 Introduction of DE public chain

Initiated by DE Blockchain Technology Lab and supported by more than 30 blockchain geek teams including Russia, Ukraine, Venezuela, South Korea, Singapore, Seychelles, Switzerland, Malta and other countries, DE Public Chain is committed to building the world's leading public chain system and blockchain infrastructure, and becoming the world's leading third-generation super blockchain integration.

DE Public Chain is a high-performance, scalable, decentralized blockchain ecosystem designed to provide secure, fast, open and transparent digital ecosystem services to users worldwide. Our public chain is based on blockchain technology with a unique consensus mechanism and smart contract system, providing a full range of digital asset management and application support, including decentralized finance (DeFi), decentralized identity verification, NFT applications, decentralized insurance, decentralized social finance, blockchain combined with artificial intelligence, blockchain combined with Internet of Things, decentralized storage, cross-chain interoperability, etc.

DE public chain supports global commercial enterprises to build and issue side chains and parallel chains with their own characteristics through our public chain, so that traditional enterprises can realize enterprise chain reform through this new technology of blockchain. Ultimately, DE public chain will build an international payment and trade settlement system and establish a global integrated financial service network.

In terms of technology, DE public chain changes the technology and application ecosystem of existing blockchain, using blockchain-style distributed structure to verify stored data, distributed nodes and consensus algorithm to generate and update data, and cryptographic approach to ensure data transmission and access security. Meanwhile, DE public chain is completed by adopting the world's leading blockchain 3.0 technology and the original Dpos hybrid consensus mechanism upgrade. In the consensus mechanism, the first hybrid Dpos mechanism of miner, notary and guarantor is created and 100 super nodes are deployed globally, which is energy-saving and environmentally friendly

and can achieve second-level consensus verification, and the stability and security of the system is improved like never before.

As a practical value interconnection blockchain infrastructure, DE public chain provides a series of technical and functional features to support the value mapping between the real world and the virtual world, which will surely provide a feasible realization path for exploring and realizing the value mapping early. Therefore, we build a general-purpose, well-supported functional, high-performing, easy-to-use, user-experienced, and scalable blockchain public chain infrastructure based on enhanced directed acyclic graph for supporting the implementation of various on-chain applications.

In the future, DE public chain will continue to focus on the core technology of blockchain infrastructure and platform layer, and build a unique and fully distributed anonymous P2P network communication protocol, new quantum attack resistant cryptographic hash algorithm and signature algorithm, unique double-layer consensus and mining mechanism, support for transaction anonymity protection, Turing complete smart contract and other special features to provide effective support for third-party asset issuance, cross-chain communication, multi-chain integration, etc. .

DE public chain will definitely become the third generation super blockchain public chain system for global digital asset linking, and lead the third global public chain technology revolution to make a major breakthrough.

## **2.2 System design principles**

- Standalone Blockchain: Technically speaking, DE is a standalone blockchain, not a layer 2 solution. Most DE base technologies and business functions are self-contained so that it can run normally even if other packages stop briefly. At the same time, the security measures embedded in DE are not subject to single point of failure, and each node is guaranteed against data leakage, ensuring not only confidentiality but also authenticity and non-repudiation of activities. Everyone who enters into the blockchain network must use encryption technology, and if there is any information leakage, it is caused by the reckless operation of the person concerned and has nothing to do with the system security.

- Ether compatibility: The first practical and widely used smart contract



platform is Ether. In order to take advantage of relatively mature applications and communities, DE has chosen to be compatible with the existing Ethereum mainnet. This means that most dApps, ecosystem components and tools will work with DE and will require zero or minimal changes; DE nodes will require similar (or higher) hardware specifications and skills to run and operate. The implementation will leave room for DE to catch up with further upgrades to Ether.

- **Rights protection:** DE can digitize and code the rules or laws by writing smart contracts in code, and users can sign the contracts using their private keys, and the contents of the contracts will be executed only when the corresponding conditions are met. Through the smart contract, the whole right goal decision, execution process and reward mechanism can reach consensus and achieve complete transparency.

- **Native cross-chain communication:** DE will implement native support for cross-chain communication between two blockchains. The communication protocol is bi-directional, decentralized and de-trusted. It will focus on the exchange of digital assets between DE and other chains.

- **Maximum inclusiveness:** Everyone is equal in DE, and the best state of economic development is to be able to take into account everyone and lower the threshold of participants. Every node has equal rights, and anyone can participate in the construction of the whole network, without the need to provide real identity proof, credit proof, property proof, etc. Ending social hegemony, economic hegemony, eliminating gender discrimination and racial discrimination, and promoting the development of a more democratic and equal society as a whole.

Based on the above design principles, DE's consensus protocol is to achieve the following goals:

- The blocking time should be shorter than the Ethereum network, e.g. 5 seconds or even less.

- Confirming the finality of a transaction takes a limited amount of time, such as about 1 minute or less.

- No inflation for native tokens: block rewards are collected from transaction fees and paid in DE tokens.



- Maximize compatibility with ethereum systems and third-party public chain systems (such as EOS, BSC, TRON, etc.).
- It allows modern [ proof-of-stake ] blockchain network governance.

DE brings together all stakeholders involved in the maintenance of the system, and provides sufficient value rewards for these system participants and maintainers to achieve payback.

## 2.3 Core Component Composition

The core components of the DE public chain consist of the following modules:

- The flexible multi-chain blockchain platform (DE Blockchain or DE Blockchain), capable of reaching millions of TPS, has Turing-complete smart contracts, a formal blockchain with scalable rules, support for multiple types of cryptocurrency value exchange, micro-payment channels and off-chain payment networks. For example, the "self-healing" vertical blockchain mechanism and instant hypercube routing make it fast, reliable, scalable and consistent at the same time.
- A peer-to-peer network (DE P2P Network, or DE Network, or DE Network) for accessing the DE blockchain, sending transaction requests, and receiving blockchain updates of interest to users (e.g., smart contract updates related to customer accounts), but it can also support arbitrary distributed services, whether on the blockchain or not.
- Distributed file storage technology (DE Storage or DE Storage), accessible through the DE network, is used by the DE blockchain to store archival copies of blocks and state data (snapshots), and also to store arbitrary files served by users or others running on the platform using streaming technology.
- Network Proxy/Anonymity Layer (DE Proxy or DE Proxy), similar to Invisible Internet Project, is used to hide the identity and IP address of DE network nodes when necessary.
- A distributed hash table like Kademlia, used as a torrent tracker for DE storage or as an "input tunnel locator" for DE agents and as a service locator for DE services.

- Platforms that support arbitrary services (DE Services or DE Services) can be accessed through the DE network and DE proxies, similar to how a browser or smartphone application can interact with a unified formal interface. These formal interfaces can be published in the DE blockchain; the information published in the DE blockchain can be used to find the actual node providing the service at any given moment through the DE DHT. Services can be guaranteed by means of smart contracts created in the DE blockchain.

- DE DNS, a service that assigns readable names to accounts, smart contracts, services and network nodes.

- DE Payments, a platform for payment channels and micro-payment channel networks. It can be used for fast off-chain value exchange that will pay to services powered by DE Services.

## 2.4 Application Objectives

The core value of blockchain is to build a trustworthy decentralized system, and to upgrade the decentralized and independent respective monocenter to a unified polycenter with the participation of multiple parties, so as to improve the efficiency of trust transmission and reduce transaction costs. DE hopes to provide a more ideal ecological environment for global users in the blockchain era, to achieve interoperability between independent ecologies, and to build bridges between each continent , allowing everyone to get to know this new crypto world built by blockchain from a new dimension. Therefore, DE's goal is to build a fair and open comprehensive application system by using self-researched public chain technology and combining with the characteristics of blockchain technology. DE's mission is to build a complete value ecology for global business and users in the blockchain era, and hope that this ecology can provide guarantee for users' free will and personal value, especially time value.

DE was originally designed to build a multi-dimensional public chain system, and through cross-chain technology, a sound cross-chain solution was built to piggyback on the DE public chain, using a unified digital currency produced by blockchain technology to reward:

- Pass-Through Economic Solutions

- Multi-application interoperability (cross-chain transactions, social, payment, entertainment, e-commerce, finance, chain reform, DeFi, Swap, lending, NFT, Web3.0, meta-universe, etc.) solutions
- Native tokens, third-party digital currency issuance, mining and incentive models
- Multi-Asset Cross-Chain Interoperability Solution

When DE participants make contributions to DE, according to the calculation of contribution mechanism, we provide them with corresponding reasonable returns. As a commercial application-level blockchain solution, the ecological construction and transformation and upgrading problems of third-party commercial organizations can also be solved through the application of DE.

DE fully absorbs the advantages of Blockchain 1.0, Blockchain 2.0 and existing Blockchain 3.0 projects, solves their outstanding problems and technical flaws, and builds a more prosperous application ecology. It will completely reshape the operation mode of the existing Internet, turn the economic incentive system itself into a system that can circulate within the system, and create a completely decentralized Internet value transmission ecosystem, as well as a completely open community ecosystem that transcends national borders and allows every participant to obtain the corresponding value embodiment.



## **2.5 Features and Advantages of DE Public Chain**

### **1) Decentralized Finance (DeFi)**

DE public chain supports decentralized financial (DeFi) applications to provide secure, fast and transparent decentralized financial services to users worldwide. Our public chain provides a variety of financial services, including decentralized exchanges, lending protocols, stable coins, asset management, insurance, etc., helping users to better manage digital assets, reduce digital asset risk and increase asset value.

### **2) Decentralized identity verification**

DE public chain supports decentralized identity verification to provide users with more secure identity verification services and safeguard user privacy and data security. Our identity verification system is based on blockchain technology and cryptographic algorithms to ensure that users' identity information will not be tampered with, lost or stolen and.

### **3) Application of NFT**

DE public chain supports the application of NFT to provide more diversified digital asset management and application services. Our public chain supports the creation and application of multiple NFTs, including digital artwork, virtual real estate, game props, music rights, etc.

### **4) Decentralized insurance**

DE public chain supports decentralized insurance to provide users with more flexible and secure insurance services. Our public chain is based on blockchain technology and smart contract system to ensure that decentralized applications can be executed securely, transparently, and automatically. A smart contract is a program code that can automatically execute pre-defined rules, conditions and operations, usually regarding a certain asset or event. In DE public chains, smart contracts can be either predefined open source contracts or custom contracts. Smart contracts can have control over any digital asset, such as currency, securities,

real estate, intellectual property, notes, etc. In addition, smart contracts can interact with other smart contracts and external data sources, making decentralized applications even more feature-rich.

## **5) Guarantee the efficiency and accuracy of artificial intelligence**

DE Public Chain combines blockchain technology with artificial intelligence and aims to provide more efficient, secure and accurate data analysis and prediction capabilities. By using blockchain technology, DE Public Chain can ensure data security, transparency and immutability, while using artificial intelligence technology can analyze and mine large amounts of data. This combination can be used for many applications such as data analytics, predicting market trends, image recognition, natural language processing and smart contracts.

## **6) Decentralized storage**

DE public chains provide decentralized storage services, which means that data is stored decentralized in various nodes of the network instead of being stored centrally in a single entity. This decentralized storage provides higher security, reliability and stability, as the network can continue to operate even if some nodes fail. Also, this type of storage reduces storage costs and improves data accessibility and sharing.

## **7) Cross-chain interoperability**

DE public chain supports cross-chain interoperability, meaning that users can handle assets and data from other public chains on the DE public chain, which enables liquidity and interoperability of assets and data. Cross-chain interoperability can be achieved through different protocols and bridging mechanisms. This interoperability can be used for many applications, such as decentralized exchanges, asset management, etc.

## **8) Scalability**

The DE public chain is highly scalable, which means it can remain efficient, stable and reliable as the network expands. The DE public chain employs several



technologies to achieve scalability, such as sharding technology, sidechain technology, and multi-chain technology. These technologies allow the DE public chain to process multiple transactions simultaneously and reduce network congestion and latency.

DE public chain is a decentralized distributed digital ecosystem based on decentralization, which combines blockchain technology with finance, identity verification, insurance, social finance, Internet of Things, artificial intelligence and other fields, and is committed to providing users with more secure, transparent, efficient and convenient digital ecological services. We firmly believe that among all blockchain technologies and applications, the innovation and development of DE public chain will create more value and opportunities.

In the future, we will continue to improve and optimize the technology and ecology of DE public chain, strengthen the global community building, promote the application and ecology of DE public chain, and together with the global blockchain ecosystem builders, jointly promote the development and application of blockchain technology and make greater contributions to the digital transformation and innovative development of human society!

# Chapter III DE Public Chain Architecture

The DE public chain architecture has six layers: data layer, network layer, consensus layer, incentive layer, contract layer and application layer.

## 3.1 Data Layer

Based on the high redundancy storage mechanism of blockchain, blockchain storage has a certain impact on the scalability and performance of blockchain, DE framework is designed with multi-level node system, and there are different storage strategies (distributed bookkeeping) according to different node application choices.

## 3.2 Network layer

P2P Protocol (P2P Protocol) supports data transmission and signaling exchange of each node in the blockchain network, and is an important communication guarantee for data distribution or consensus mechanism to reach. The DE system design supports multiple P2P protocols, communication mechanisms and serialization mechanism configurations, and flexible protocols are used according to the needs of different scenarios. In terms of communication security, flexible support for HTTPS, TLS, WSS (SecureWebsockets) and other protocols can be extended to support OAuth authentication integration on the external service interface of the platform application that needs to be established.

## 3.3 Consensus layer

DE consensus algorithm is divided into two phases, in DE version 1.0, the consensus mechanism used is a two-layer consensus mechanism combining the base DAG consensus and BA-VRF consensus. Since DE version 2.0, the base DAG consensus will be replaced by the HashNet-based DAG consensus, and the consensus mechanism of DE is a two-layer consensus mechanism combining the DAG consensus of HashNet and BA-VRF consensus mechanism. Therefore, DE has the characteristics of high performance and high consistency, which is suitable for financial payment, digital type transaction data frequently generated, and weak



central upper layer applications with high real-time bookkeeping requirements.

### **3.4 Motivation layer**

DE not only has airdrops for Genesis consensus rewards, but also liquidity mining pools for long-term network value maintenance. Because of DE's unique consensus mechanism, performance is not affected by the number of nodes, so DE's consensus nodes are not capped and occur dynamically, and anyone can join at any time to earn rewards.

### **3.5 Contract layer**

For each smart contract, as a DE on the operation of financial assets full life cycle management, the submission, deployment, use, cancellation of smart contracts for complete and controlled process management, and integrated rights management mechanism for smart contract operation of the mechanisms for comprehensive security management.

### **3.6 Application layer**

The application layer will provide a common transaction protocol, support multi-language integration and functional extensions, with support for multiple languages such as Java, JavaScript, Python, etc., and has been fully applicable to DE network expansion.

# Chapter IV DE Key Technologies

## 4.1 P2P-based anonymous communication technology

DE's underlying communication network adopts P2P architecture, and then adds anonymous access mechanism between nodes on it to ensure the privacy protection of information services. DE's P2P network anonymous communication is mainly implemented by:

- A proxy server is run locally, and this proxy server periodically communicates with other DEs to maintain a TLS link, thus constituting a virtual link in the DE network. Specifically, each user runs its own proxy program: fetching directories, establishing paths, and handling connections. These proxies accept TCP data streams and reuse them on the same line.

- DE encrypts at the application layer, and the transmission between each relay node is encrypted by a point-to-point key to form a hierarchical structure. Each node it passes through in the middle wraps the client inside so that communication between relay nodes can be kept secure. Specifically, each DE relay node maintains a long-lived authentication key and a short-term session key, which is used to sign the TLS certificate, sign the descriptor of the relay node, and sign the directory by the directory server. The TLS protocol also uses short-term connection keys that change periodically and independently between the communicating relay nodes to reduce the impact of key leakage.

- Packets in the DE network use random paths to mask the footprint so that an observer at some point does not know where the data really came from and where the real destination is. The client builds an encrypted line in the DE network incrementally. This line is extended one hop at a time, and each extended relay node only knows which relay node the data came from and which relay node the data is going to be sent to. None of the relay nodes knows the entire line. The client and each hop negotiate a separate set of keys to ensure that each hop cannot trace the relay point that it has traveled. Once a line is established, it can be used for data interaction.



In DE's anonymous communication network, the directory server is the core of the network, which is responsible for collecting the information of relay nodes in DE network and publishing it to DE agent in the form of node snapshots and node descriptions; relay nodes are the foundation of DE network, and the anonymous communication traffic in the network is forwarded through the anonymous communication links composed of multiple relay nodes; the agent runs on the DE user side, which is responsible for establishing the anonymous links and relaying the network traffic between the user's It is responsible for establishing anonymous links and relaying network traffic between the user's web application and the DE anonymous links.

The DE anonymous communication network consists of 3 relay nodes that form a DE anonymous communication link, and these 3 nodes are the entrance position, the middle position and the exit position according to their locations.

## 4.2 Data structure

### 1) Basic DAG data structure

DE uses the basic DAG structure to store transaction data in the first phase. Currently, several projects such as IOTA and Byteball have successfully built public chains with stable operation for a long period of time using DAG, proving the technical advancement and performance of DAG chains. In DE, transaction information is encapsulated into individual units, and the units are linked to each other to form a DAG graph. Since units can be linked to any one or more previous units, there is no need to pay more computation cost and time cost for consensus problem, and no need to wait for strong synchronization of data between nodes, and there is even no concept of multiple data units assembling blocks, so the concurrency of transactions can be greatly increased and the confirmation time can be minimized.



The DAG data structure of DE is shown in the figure, the directed edge between units indicates that two units have a reference relationship between them, there is a directed edge from B to A in the figure, indicating that B references A, A is the parent unit of B, B is the child unit of A. At the same time, we say that unit C indirectly references A, A is the ancestor unit of C; unit G does not have any parent unit, called the Genesis unit, the Genesis unit is unique; unit X, Y does not have any child unit, this type of unit is called the top unit.

The unit consists of two parts: the unit header and the unit message. Where the unit header contains mainly the following fields:

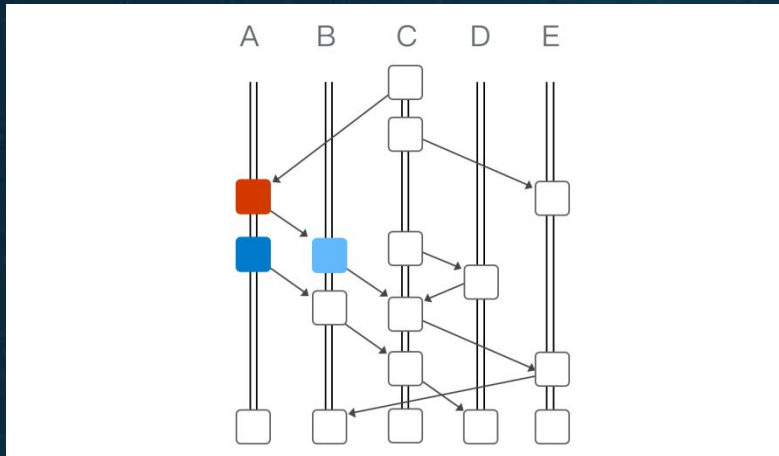
- Unit versions;
- Token tokens;
- Unit creator signature: single signature or multiple creator co-signatures;
- parent unit hash: the hash of the referenced single or multiple parent units;
- End Witness List: A hash of other units (usually parent or ancestor units) that have the same end witnesses.

The unit message part is used to store information about transactions, and DE has many types of transactions, including payments, data storage, voting, etc. Similar to how each new block in a blockchain needs to acknowledge all previous blocks, each new subunit in a DAG needs to acknowledge its parent, and all parents of the parent. Attempting to modify past records in a DE requires coordination with a large and growing number of other users, most of whom are anonymous strangers. Thus, immutability is based on the complexity of coordinating with such a large number of strangers who are difficult to agree on, have no interest in cooperating, and each of whom can veto revisions. Confirmation starts immediately after a unit is published, and confirmation can come from a new unit published by anyone at any time, and users help each other: by adding a new unit, the publisher also confirms all previous units.

## **2) HashNet data structure based on enhanced DAG**

HashNet is a directed acyclic graph (DAG), which is composed of an infinite number of vertices and directed edges connecting the vertices. As shown in Fig.





The graph records what data was sent to other nodes at what time and in what order by all nodes in the entire network, and each node has a copy of such a HashNet in its memory.

In the above figure there are five computer nodes A, B, C, D, E. Each node has a column where the vertex (also called event) is placed. The latest event is placed at the top of the graph, and the HashNet is longitudinal over time.

### 4.3 Transaction anonymity protection

DE ensures the anonymity of transaction information in terms of both transaction unlinkability and untraceability, and iteratively improves the anonymity protection capability. DE standardizes the definitions of transaction unlinkability, DElinkability and untraceability, DEtraceability, where unlinkability means that for any two external transactions, it cannot be proven that they were sent to the same person. Untraceability means that for each internal transaction, all possible senders are equal in terms of probability. Disassociation and untraceability are properties that must be satisfied by a strong privacy-preserving blockchain. DE supports disassociation and untraceability by using one-time secret key and ring signature technology. Meanwhile, DE designs and implements a strict zero-knowledge proof model as an optional feature that can further enhance transaction anonymity.

#### 1) Primary key

DE uses one-time key technology to achieve uncorrelated transactions. One-time key means that the sender uses a separate key for each transaction to

sign. Unlike the usual blockchain transactions where the receiver uses only one pair of public and private keys, in the one-time key scheme, the receiver needs to use two pairs of public and private keys for each transaction. When a transaction is initiated, the transaction sender uses the two public keys of the transaction receiver and a random number to generate a temporary public key, and the sender uses the temporary key as an address for the transaction, and the receiver performs a Diffie-Hellman exchange and combines one of his private key information can obtain the temporary private key. Since only the receiver can verify the key at one time, the correctness of the transaction is guaranteed. Also, each transaction uses a different random number, and even if multiple transactions are made with the same receiver, they cannot be correlated because their primary keys are different, guaranteeing the uncorrelatedness of the transactions.

## **2) Ring signature**

InterValue uses ring signature technology in order to guarantee the privacy of the sender and the privacy of the receiver of the transaction. Ring signature is a multi-user signature technique derived from Group Signature technology, which eliminates many disadvantages of group signature, such as eliminating the need for group administrator and untraceability.

In ring signature technology, the message is signed by a group of signers and the verifier cannot know who is the specific signer. Therefore, ring signature is a good solution to the problem of privacy protection of the signer's identity and achieves untraceability of the transaction. On the other hand, because the general ring signature technique hides the signer among a group of users, it brings the problem of double spending, which can be solved by using linkable ring signature technique.

## **3) Zero knowledge proof**

The zero-knowledge proof technique was proposed in 1985 by S. Goldwasser, S. Micali, and C. Rackoff, and was originally designed to achieve the goal of enabling a prover to correctly authenticate a prover without providing any useful information to the verifier. Zero-knowledge proofs are essentially interactive proof systems that introduce elements of randomness and interaction into traditional mathematical proofs, using a question-and-answer approach, and later develop non-interactive



approaches that have far-reaching implications in the fields of computer science and cryptography. In practical applications, zero-knowledge proofs require that the verifier cannot acquire new knowledge during the verification process, i.e., a malicious verifier, making the verification subject to error while preventing technically caused verification errors.

For the first time, the cryptocurrency Zcash uses zero-knowledge proofs to achieve privacy for its transactions. Unlike the way in which the sender's blocks are removed, Zcash uses a void list to identify the blocks sent by the trader, and absentees only verify the hash of the transaction blocks, achieving complete anonymity of the transaction.

#### **4) Anonymous transactions and privacy protection**

As an innovative technology of blockchain, DE realizes anonymous transaction and privacy protection through confidential transaction. The latest version of DE adds strictly designed non-interactive zero-knowledge proof to the previous version, and makes non-interactive zero-knowledge proof optional to support complete anonymity of transactions, effectively resist malicious verifiers, and meet the privacy protection needs of different application scenarios.

### **4.4 Smart Contracts**

Blockchain technology has enabled the implementation of the smart contract concept by providing a secure and trusted execution environment for smart contracts. Smart contracts are event-driven, stateful programs that run on top of a replicable, sharable ledger and are capable of holding assets on the ledger, with the goal of enabling a complex set of digital commitments with triggering conditions to be executed correctly, according to the will of the participants. Smart contracts can not only receive and store value, but also send information and value outward, and the entire process can be automated and intelligently executed in a centralless, trustless manner.

Smart contracts need to be designed in a way that strikes a balance between security and functionality. Existing blockchain projects mainly focus on the design of a single type of smart contract, seeking a balance between security and functionality under the condition of limited types of smart contracts, which often fails to achieve the ideal effect of satisfying the experience of diverse user groups

and the diverse transaction needs of users. The transaction script of Bitcoin blockchain is a prototype of smart contract, which is a non-Turing-complete smart contract with the advantages of low complexity and light weight, and there has been no security problem in the Bitcoin blockchain network for nearly ten years, but the functions supported by Bitcoin transaction verification script are very limited and only used for payment verification. The Ether blockchain supports Turing-complete smart contracts written in Solidity high-level language, which greatly enriches the functions of smart contracts and extends the application areas of blockchain technology, but the writing of Ether smart contracts is prone to security vulnerabilities.

DE adopts a hierarchical idea similar to computer storage architecture, Moses Virtual Machine (MVM), to support declarative non-Turing-complete smart contracts and advanced Turing-complete smart contracts in the implementation of smart contract functions. Users choose to use both types of contracts based on their experience and transaction needs, balancing computational security and computational functionality with computational cost and complexity to meet diverse transaction needs. Declarative smart contracts are simple to deploy, have high security, and are closer to legal contract language; advanced Turing-complete smart contracts are relatively difficult to deploy and are mainly used to develop DApps with more complex program logic. Token is used as the fee.

## **4.5 Multiple support of technology**

DE will develop blockchain underlying API for financial data industry and derivative institutions to realize application scenario docking and digital asset overlay, and finally achieve the goal of solving the real problems related to the current financial system. In order to realize this vision, DE has already made the corresponding layout in the underlying design and top-level application adoption.

### **1) High throughput**

Boosting DE with higher TPS through layer 2 network is theoretically possible to reach the 10 million per second level.

### **2) Large capacity**



Improving the underlying network file system with encryption de-duplication technology to increase DE storage space to more than a thousand times.

### **3) High reliability**

By expanding the blockchain network structure and combining the dual layered consensus of super nodes and edge nodes, a reliable and feasible value system of DE is built to ensure the stable operation of the whole network.

### **4) Diversity**

By extending the smart contract implementation mechanism and the task scheduling model, combined with the edge computing grid, more smart contract adaptation scenarios are built for DE.

### **5) Highly compatible**

By expanding the smart contract writing specification to be compatible with the mainstream public chains in the market, combined with the multiple contract virtual machine mechanism, DE smart contracts are compatible across chains, lowering the entry barrier for developers.

### **6) Low cost**

By expanding the DE economic model and combining multiple pass-throughs and multiple incentives, a virtuous cycle of consumption and production systems is achieved, providing a cost of operation that is unmatched by other centralized designs and competing products.

## **4.6 Safety aspects**

### **1) Secure private key access**

In order to facilitate users to use blockchain product services, DE also provides two solutions, web-hosted access and private key hardware access (U-key), in

addition to the traditional client-side mechanism of generating and storing. Web-hosted access, i.e., user name and password are mapped into private keys by specific algorithms and stored on the server side. The private keys stored on the server side are all encrypted data, and the private keys can only be decrypted at the user side; the hardware private keys are designed to meet the usage requirements of the financial industry and the IoT industry.

## **2) Multiple privacy protection schemes**

Provide multiple privacy protection functions. First, the underlying blockchain provides homomorphic encryption, where all user data is stored encrypted and visible only to the user. Secondly, Adaptors provides encryption middleware services, which users can choose according to their business needs. Finally, the upper layer application can encrypt the data at the time of entry, and DE is responsible for writing and reading the encrypted data generated by the user.

# **4.7 Operation and maintenance system**

## **1) Full platform deployment**

All codes of DE can be compiled and run cross-platform, platform-related codes are encapsulated into basic libraries, and business logic is independent of DE. in addition to PC and server way of compilation, it also supports cross-compilation way, such as ARM and MIPS platform, which is convenient to deploy in mobile portable system and make preparatory support for blockchain IoTization. At the same time, DE has strategic cooperation with well-known cloud platform, which can realize rapid deployment on cloud platform.

## **2) Visualization of operation and maintenance**

System monitoring service (MonitorAgent) deployed on blockchain nodes: supports data information monitoring at business (blocks, transactions, contracts, consensus, etc.), network (networking, latency, throughput, etc.), and system level (CPU, memory, disk, etc.); also provides complete logs, alarms and notification mechanisms to facilitate maintenance of commercial systems.



# Chapter V DE Service Content

## 5.1 chain change service

Listing is the dream home of all enterprises, once listed, they will become rich overnight, but the real listed enterprises are rare, so where will the other unlisted enterprises go? From stock reform to chain reform, from listing to chain, a new business mechanism is brewing to perfection. Chain reform has become an inevitable trend.

Chainplus is a blockchain economic transformation of traditional enterprises, a value transformation and reshaping of the real industry. Chainplus is not only from blockchain technology, but also from production relations, social development, economic system, industrial innovation, business model and other aspects to implement. Thus, blockchain technology can serve the real industry and the real economy, improve the efficiency of industrial applications and reduce economic costs. The ultimate goal of chain reform is to achieve blockchain + traditional enterprises + landing applications. de chain reform services will include assets on the chain, credible crowdfunding, equity trading, enterprise financing and other main sectors.

### 1) Assets on the chain

DE asset chain system has the demand and broad application scenario for securitization of large fixed assets. Using blockchain as the underlying technology, the fixed assets can be chained, valuing, confirming, mortgaging and trading around the core enterprises, solving the problem of difficult circulation of large fixed assets and promoting the efficiency of financial circulation.

- Borrowing third-party institutions to register, identify, assess, appraise, value, and hold in trust valuable assets;
- Blockchain deposition to ensure the validity of warrants: the use of blockchain technology features to ensure the immutability and transparency of information;

- Securitization of physical assets with the help of blockchain pass-through economics, making it a reality for fixed assets to achieve value splitting and rapid circulation;
- Joint a number of credible institutions to form a unique and valid asset code of copyright information and confirm the rights and interests on the chain;
- Use technical means to ensure the validity of copyright flow and protect the rights and interests of all parties to the transaction.

## **2) Trusted Crowdfunding**

DE uses blockchain technology to create a credible crowdfunding platform, make data information open and transparent, reduce the information asymmetry of funds being used during and after crowdfunding, and introduce smart contracts to earmark the money so as to maximize the protection of investors' rights and interests.

- Building a decentralized crowdfunding platform using blockchain architecture;
- Setting the roles of project subjects, crowdfunding platforms, investment institutions/people, and regulators, and clarifying the intermediary responsibilities of crowdfunding platforms;
- Contracts, invoices and transaction information up-linked to eliminate price fixing and safeguard the interests of transaction subjects;
- Each use of funds to a clear destination, to record transactions in the form of information chain, and to develop suspicious data determination criteria timely supervision and timely feedback;
- The uplink information is open and transparent within the members, and the node data is synchronized in real time.

## **3) Equity Transactions**

DE creates an equity trading transfer platform through blockchain technology. It can record the value information such as the vested party of equity, R&D key



information, basic company information, equity information, option information, as well as the ever-changing information record and history in the blockchain distributed ledger to improve the transparency and reliability of information, while helping to aggregate information between copyright grantors and investors.

- Uniting several traditional institutions to connect the real world with the digital world and solve the problem of chaining pass-through assets;
- Implementing traditional offline equity transaction confirmations, etc., online through technology to avoid cumbersome paperwork;
- The transaction data is recorded using blockchain distributed ledger to ensure that the transaction cannot be tampered with. The use of blockchain technology ensures the safety of funds and alliance institutions work together to protect the rights and interests of all parties to the transaction.

#### **4) Corporate Finance**

Through blockchain, DE helps enterprises to realize chain reform, evaluate and confirm the value of enterprise assets. Based on the number of assets and project output value, the assets will be packaged on the chain. Through the granular division of assets, the enterprise pass certificate is issued and public funds are raised.

- Build a blockchain technology-based supply chain financial service platform led by core enterprises, with all the real data between core enterprises, distributors, suppliers and other supply chain participants on the chain, and innovative clearing and settlement channels between enterprises and improved clearing and settlement efficiency;
- Introduce a variety of financial platforms to provide financing services. The settlement certificate can not be tampered with and retained permanently, helping the healthy development of enterprises in the supply chain.

In the future, with DE public chain infrastructure as the support and driving enterprise chain to the core, DE will continue to empower the real industry economic scenarios including enterprise chain reform, decentralized exchange, social, DeFi, mall and game, creating a new paradigm in the value Internet era.

## 5.2 Cross-chain ecology

DE will independently develop a multi-signature-based cross-chain technology solution based on the existing mature public chain, supporting a variety of cross-chain assets such as Ether, Wavefield and Quantum Chain. The principle of cross-chain implementation is as follows:

For a user to complete a cross-chain transaction, first the user sends asset A to a specific address on main chain A. That specific address is a multi-signature address. The benefit of a multi-signature address is that the asset is guaranteed to be securely locked to that address. Because only one or a few gateway members cannot complete the transfer of this asset, depending on the multi-signature algorithm, a certain percentage of relevant member signatures are required to unlock the asset.

Once the user sends the A main chain asset to a specific address, the listener listening to the transaction information on the chain will monitor the main chain transfer, after receiving the information, confirmer will verify the authenticity and accuracy of this transaction on the main chain through DE, once it is determined that it will not be revoked, confirmer will sign on the relay contract to confirm this cross-chain transaction. executor ( Executor) satisfies the signature threshold, issues the same amount of anchor coins and recharges to the DE Strust contract, and the user adds the asset to the DE security account, thus completing the process of transferring the asset from the main chain to the DE Strust contract.

Then, if a user wants to transfer his assets from a main chain to A main chain, the user first needs to initiate a withdrawal request in DE, the tokens will be withdrawn to the relay contract, the relay contract will snap this part of tokens, at this time watcher will initiate a multi-signature transfer on A main chain and record this multi-signature request on the relay contract, confirmer to confirm the authenticity of this token destruction The confirmer will confirm the authenticity of the token destruction and provide the signature on the A main chain. After meeting the threshold conditions Executor completes the transfer on the A main chain and the user receives the A main chain assets at the token withdrawal address.

In a nutshell, recharge is to adulterate a certain number of tokens on A main chain, and then issue new tokens on BSC chain according to the adulterated tokens. In turn, it is to make withdrawals on other chains, destroy a certain number of



tokens, and then unlock the corresponding number of tokens on the A main chain.

## **5.3 Financial Services**

DE will realize the empowerment of industry through financial services and drive the success of enterprise chain reform. The pain point problems of supply chain finance include how to guarantee the authenticity of transactions, dissolve the high operation cost and improve the market coverage. The development of supply chain finance coincides with the windfall of blockchain development. The application of DE financial service system is mainly based on the following aspects: transaction confirmation based on encrypted data, authenticity proof based on deposition, credit dismantling based on shared ledger, and contract execution based on smart contract. Eventually, it can meet the mutual corroboration and matching of multiple information sources in the supply chain.

### **1) Confirmation of transactions based on encrypted data**

At present, many core enterprises and first-tier suppliers/distributors in the industry have a good level of informationization, but SMEs at other levels of the chain have difficulty in meeting the data standards of banks. Meanwhile, when different subjects in the chain adopt different types of information management systems, the information transfer lacks consistency and continuity, which makes it easy to form information silos, making it difficult to obtain effective data for risk judgment and management, and to verify the authenticity of transactions. It can be seen that one of the prerequisites for the application of DE financial service system is the informationization of the whole chain.

DE financial service system has important application value in the field of asset management, realizing real-time supervision of various types of assets' rights, authorization and transactions. For intangible assets that are difficult to supervise and protect in the network environment, DE financial service system becomes a new method of intellectual property protection in the virtual environment based on the characteristics of timestamp technology and difficult to tamper. As for tangible assets, such as certificates of deposit, accounts receivable and digital intelligent assets, real-world asset transactions can be realized in the virtual environment, such as authorization and use control of assets, product traceability and other applications.

DE financial service system realizes automatic confirmation of movable property rights for each participant in the supply chain, forming a rights book that is difficult to tamper with, and solving the pain points in the existing rights registration and rights realization. Taking the right of accounts receivable as an example, the real-time digital confirmation of rights is realized through the core enterprise ERP system data up-chain, which avoids the delay of confirmation of rights in reality and is of great significance to improve the security and traceability of transactions. First, it can realize the distributed storage and dissemination of corroboration credential information, which helps to improve the security and fault tolerance of market data information. Second, it can establish mutual trust without the need to use third-party institutions for transaction endorsement or guarantee verification, but only by trusting a common algorithm. Third, it can minimize the frictional boundary in value exchange, and ensure the anonymity of transaction parties and protect personal privacy under the premise of data transparency.

## **2) Proof of the authenticity of transactions based on the depository certificate**

The proof of the authenticity of transactions requires that the information of claims recorded in the virtual world must ensure the consistency between the virtual information and the real information, which is the basis for carrying out financial services and risk control. Supply chain finance needs to ensure that the participants, transaction results, and documents are based on real asset transactions. Proof of transaction authenticity, using manual means for verification, has huge shortcomings such as high cost and low efficiency. Large enterprise supply chains are difficult to implement manual verification in their rapid operation. To solve one of the core problems of supply chain finance, i.e., the authenticity of transactions, it is necessary to obtain all kinds of information from the transaction network dynamically and in real time in a virtual environment, and to conduct "cross-validation" of information to check the authenticity of transactions, which has become one of the key technologies in supply chain finance at present.

Information cross-validation is an algorithm to traverse and verify the data at all levels in the transaction network, where the data at all levels include: the data intercepted by the computer system of each node, the operation site, the social credit system (taxation, power department, etc.), and the node data acquired by middleware and hardware (such as GPS, RFID, etc.). The ways of verification include:



① data traversal of transaction nodes on the chain to check the rationality of transaction data on the chain; ② data traversal in the transaction network to verify the logical rationality of data; ③ data traversal of temporal relationship to verify the logical rationality of data. Through the above triple data cross-validation, a transaction proof system from point to line and then to network is formed, which can test the authenticity of transactions comprehensively and finally obtain the calculated credit results with high credibility.

The authenticity of the formation of accounts receivable involves the subject, contract, transaction and other elements, and the logical relationship explanation of its authenticity includes three points: First, the authenticity of the subject, the two sides of the transaction is a real and legitimate subject; second, the authenticity of the contract, that is, the authenticity and legality of the underlying contract, if the signature and official seal are forged, it is a false contract; third, the authenticity of the transaction, the occurrence of substantial asset transactions. If the contract is real, but no real transaction occurs, and the purpose is to obtain bank funds, it is a false transaction. But a real contract may also generate false receivables. For example, falsely documenting a transaction or misrepresenting the amount of the transaction to obtain more loans is a false receivable. Therefore, it is reasonable to use accounts receivable as the smallest unit of credit management. When conducting business offline, it is necessary to confirm the identity of the subject, confirm the contract, verify the transaction, etc. However, the authenticity of signatures, authenticity of documents, etc. are limited by technical conditions and are the links that generate risks.

DE financial service system through the combination of blockchain, Internet of Things, Internet and supply chain scenarios, based on the various types of information dynamically obtained in real time in the transaction network, multi-dimensional corroboration of data to improve the reliability of the main data, such as: matching procurement data with logistics data, corroboration of inventory data with sales data, reliability of core enterprise data with downstream chain data, in order to reduce the process friction caused by information asymmetry To reduce process friction caused by information asymmetry.

### **3) Credit unbundling based on shared ledger**

The goal of supply chain finance is to provide comprehensive coverage for SME financing, but at present, the financing needs of a large number of secondary and

tertiary suppliers/dealers, etc. are still difficult to be met. For example, an auto manufacturer has more than 100,000 suppliers, but there are only 100 first-tier suppliers, and it is difficult for the more than 100,000 suppliers divided by upstream layers to enjoy the service of supply chain finance. The problem of difficult and expensive financing for SMEs is only partially alleviated in supply chain finance.

Generally speaking, there are hundreds of small and medium-sized suppliers and dealers in the upstream and downstream of a core enterprise, and the DE financial service system can dismantle the credit of the core enterprise and pass it to the suppliers and dealers in the whole chain through a shared ledger. The core enterprise can register its debt relationship with suppliers on the blockchain platform and pass the relevant bookkeeping documents to each level. The original debtor of the book-entry certificate is the core enterprise, then in the financing scenario of banks or factoring companies, the process that needs to review the trade background can be clearly seen in the platform. The problem of credit transmission can be solved.

#### **4) Smart contract-based contract execution**

DE financial service system smart contract provides tools for automated operation of supply chain finance business execution, relying on efficient, accurate and automatic execution of contracts, which can alleviate the problem of difficult contract execution in reality. For example, when the delivery is completed, the payment instruction can be sent to the bank through the smart contract, thus automatically completing the fund payment, clearing and financial reconciliation, improving the efficiency of business operation, and to a certain extent reducing the potential risks and losses caused by human operation.

Based on the above functionality, DE financial service system plays an important role in solving the problem of digital currency assetization. Moreover, the fair, just, private, secure and decentralized technical features of digital currency are conducive to DE's great performance in the financial field.



## 5.4 Eco-Alliances

In recent years, the private equity industry is in a booming period, but the lack of liquidity and difficulty in exiting has become the biggest pain point for equity holders. Combined with the low probability of listing and the long time, the traditional IPO and M&A exit methods can no longer meet the demand of equity holders for liquidity. Both company founders, investors and option holders are eager to have the opportunity to liquidate their shares at the right time. At the same time, ordinary investors are very eager to have the opportunity to invest their limited funds to increase their asset appreciation pipeline, but the high investment threshold, lack of investment pipeline, and lack of professionalism are factors that prevent ordinary investors from making investments. The main factors leading to this contradiction are the lack of trading mechanism and means, and the distrust of trading due to the lack of information transparency.

The emergence of DE Eco Alliance will solve these problems. Using the decentralized and tamper-evident characteristics of blockchain will solve the problems of opacity and untrustworthiness caused by the centralized and tamper-evident characteristics in information distortion and management; smart contracts can solve the problems of inefficiency and high cost in the process of issuing, granting and registering property rights in the upstream and downstream of the industry; and based on the industry alliance, it will provide a fast, efficient and transparent transaction circulation for these rights and interests registered on the blockchain.

DE Eco Alliance will give every investor the opportunity to have equal access to wealth, so that wealth is no longer concentrated in the hands of a few people. At the same time, the marketing and promotion costs and ecological construction costs of these blockchain projects are drastically reduced, which can realize the scale and diversification of the industry, further reduce costs and improve the success rate of commercial application landing.

## 5.5 Public Services

Public services are factors that promote economic growth and social progress, and the supply of public services can have a significant impact on all types of subjects and institutions, cultures, attitudes, and behaviors in the process of political, economic, and social development. The traditional notary relies on the government, and the limited data dimension and unestablished information chain of historical data often lead to the government and schools not getting complete and effective information. Using blockchain allows for the creation of tamper-evident digital proofs. New authentication mechanisms can be established in the areas of digital copyright, intellectual property, certificates, and public interest to improve the management of public services.

### 1) Cultural field

Using blockchain technology, DE can integrate and accelerate the circulation of various links in the cultural industry chain, effectively shortening the value creation cycle. Through DE public chain technology, works are authenticated to prove the existence of text, video, audio and other works, and ensure the authenticity and uniqueness of ownership. Works are authenticated on DE and subsequent transactions are recorded in real time, realizing the whole life cycle management of the cultural and entertainment industry, which can also be used as a technical guarantee in judicial forensics. Digital proof can guarantee the integrity and consistency of data and protect intellectual property rights.

### 2) Education field

Using blockchain technology, DE can solve the existing problems of incomplete student credit system, limited data dimension and lack of verification means, simplify the process and improve operational efficiency, as well as circumvent the problems of opaque and easily tampered information in a timely manner.

It records information of students across regions and institutions in DE, tracks students' behavior records during their campus period, and builds a benign credit ecosystem. In addition, providing tamper-proof digital proof of academic achievements through blockchain can provide evidence basis for academic disputes and reduce the labor and time costs consumed by dispute events.



Meanwhile, through the blockchain academic verification system, recruiters can quickly obtain students' academic and graduation certificate information through the online blockchain system when conducting students' background investigation, so as to reduce the risk of academic forgery.

### **3) Title registration**

Currently, the real estate transaction market suffers from a lack of transparency, cumbersome procedures, fraud risks, and errors in public records during and after the transaction process. the application of DE technology enables the recording and tracking of information on land ownership, deeds, and liens, and ensures the accuracy and verifiability of related documents. In addition, DE can realize paperless and real-time transactions with the help of blockchain technology. For example, the application of DE technology on housing property rights protection can reduce the title search time, realize the sharing of property rights information, avoid fraud in the process of property transactions, and improve the operational efficiency of the real estate industry.

### **4) Medical Health**

Healthcare organizations face the problem of not being able to share data securely across platforms. Establishing good data collaboration among healthcare providers can help further improve diagnostic accuracy, improve treatment outcomes, and reduce healthcare costs. Based on DE technology, participants in the healthcare chain can share access to the network without threatening the security and integrity of the data. DE ensures the security of the database through algorithms to avoid a single point of failure that could lead to an overall collapse of the database, and the platform is expected to bring financial-level data security to the healthcare industry. Blockchain technology is used to ensure the security of patient medical records.

The security risks in sensitive data protection include information tampering, deletion, and error escalation. DE can ensure the authenticity and integrity of data and can completely record the data change process, thus realizing real-time protection of medical records and health records.

### **5) Tourism field**

The core concept of blockchain is decentralization. The application of this feature in the tourism industry is to remove intermediate agents, reduce transaction links, greatly reduce transaction costs and improve transaction efficiency.

The autonomy of DE is reflected in the tourism industry that tourists have more than one identity, they can be tourists, tour guides or managers. Each block in the blockchain records the tourism information of each region, and through the block connection, each region can exchange the local characteristic tourism and service information with each other, and the interested residents of each region can participate in the reception and management of tourists, so that tourists can enjoy the local characteristic experience most directly and local residents can benefit from the service. In the past, various hotels and travel agencies made false evaluations of their own services on the online platform in order to compete for customers, making it impossible for tourists to obtain real information about their destinations. The inerrability of DE technology effectively avoids the spread of such false information, and once false information appears, it can be traced and stored, which will have an impact on all transactions of those who publish false information and help ensure the personal safety of tourists.

For the travel industry, the network formed by DE is a transparent and untamperable database where every user on the blockchain can upload and access travel data in real time. Once a transaction is generated, the blockchain records the data information in the booking and payment system and is stored in a secure block, which not only prevents overbooking and overselling, but also allows flexible pricing adjustments based on real-time supply and demand. Globalized and transparent credit is established through DE, and credit is made available to all in order to incentivize all parties to increase their credit ratings, thus creating a better decision-making and safer travel service ecosystem together. The greater the contribution, the greater the benefit.

## **5) Government Services**

DE using blockchain technology can provide a more efficient, transparent and trustworthy management of government services. For example, it can be applied to the management of public affairs, the recording and delivery of government information, and the open sharing of government data.



## **6) Supply Chain Management**

DE applies blockchain technology to supply chain management to achieve traceability, transparency and security assurance of commodity information, thereby improving the efficiency and credibility of supply chain management.

## **7) Secure energy data**

DE applies blockchain technology to the energy sector to achieve secure and efficient management and trading of energy data and to promote the development and application of renewable energy.

## **5.6 Global Payment Clearing System**

Relying on the underlying technology of DE public chain, we will establish the world's leading payment and clearing straight through through the wallet to solve the inconvenience of users in managing the circulation of multiple digital assets, the cumbersome process of exchange transactions, the poor transmission of value, and the historical problems of digital asset applications, providing a powerful infrastructure for the digital currency field and promoting the application and development of digital currency.

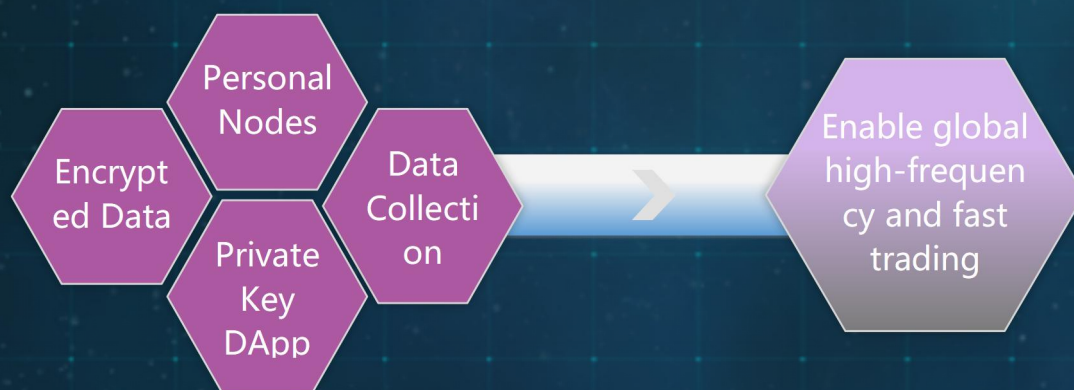
The core value of DE wallet is precisely to implement and reflect the market authenticity and circulation power of digital assets, and to create a more convenient and quicker way for individual users to realize the authenticity circulation performance of the global cryptocurrency industry. In our planning, any cryptocurrency can be realized as long as it is in the DE wallet and can be paid by sweeping the code, which is the secure address. Even if charging coins, withdrawing coins or more functions.

The DE Wallet is easy to use, not only for entry-level users, but also for experienced users who can choose from a variety of specialized investment features within the DE Wallet for their unique trading needs.

Supported by the underlying technology of DE public chain, DE wallet has the following features:

- More security: path security, data security, tamper-proof and no single point of failure;
- Faster: real-time transactions, no payment intermediaries, and faster cross-border settlements;
- Cheaper: low cost trading, low trading commissions, no middlemen drawback.

In addition to the change of the traditional payment model, DE will also realize the cross-chain payment system through the application of the lightning payment network and the integration of high-frequency payments.



- Personal node: DE will design a personal distributed account node for users based on blockchain nodes, which is the unique ID of DE users, and through the platform's built-in payment system, based on the scalability and cross-chain technology of the grassroots of Ethernet technology, DE users will be able to realize a global fast payment system through the platform.

- Data collection: The platform will be collected through data collection, for individual node users' data to get analyzed and build trust system for users, and all data information will be based on private data of individual user data. At the same time, in the process of trust authentication, broadcasting and transmission, personal privacy and data will be fully protected through data desensitization and encryption.

- Private Key DApp: DE user's financial transaction data are flowing data through personal private key DApp. All the data will be returned to the individual user's wallet through the authentication of blockchain technology, and the confirmation of smart contract, realizing trust, fairness and security. At the same



time, DE platform has been realistic global cross-chain connection, all users can enjoy the global financial services based on DE platform to provide fast transactions, financial services, financial application data and other services, can also realize the fast exchange of digital assets for other blockchain digital assets for long-term preservation, such a model will make the commercialization of financial data become more fair, more durable storage and long-term value-added benefits.

- Encrypted data: DE's user data encryption, is based on decentralized storage technology, the security of all transaction data process, the platform will broadcast the way as well as the desensitization of private information. Let DE users have no worries when authorizing platform payments and financial services data use.

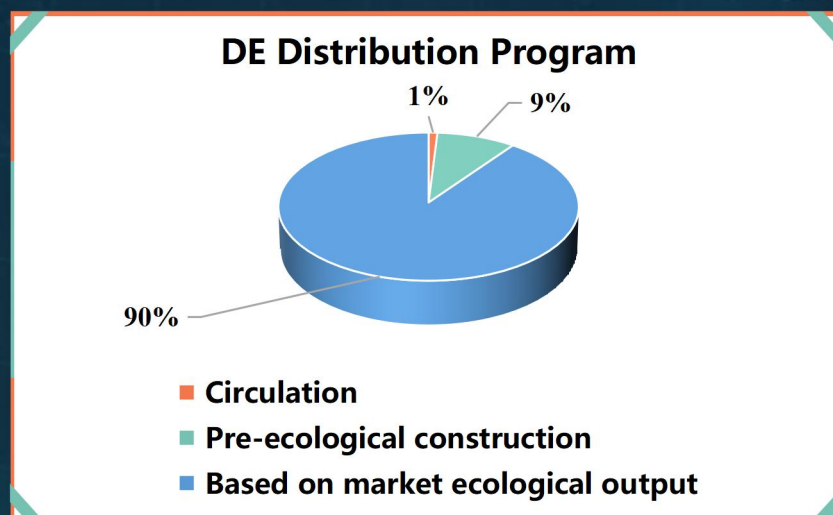
In addition to these scenarios, DE can also be applied in more places. Most of the projects of real enterprises can be incubated through DE public chain, and the application of blockchain projects of real enterprises will become simpler, and the process of digitalization of real projects will be greatly accelerated, which is the purpose and meaning of DE's existence.

# Chapter VI Designing the economic model of the DE pass-through

## 6.1 DE Token Economics

DE public chain will issue DE tokens, which are tokens that can be exchanged for DE internal value resources and rights and interests to motivate users and third-party partners to participate in ecological construction. At the same time, DE public chain, as a kind of underlying infrastructure integrating multiform digital assets, can derive more other smart assets through financial smart contracts. In the future, DE public chain will drive the value growth of DE tokens through more innovative models.

- ◎ Token name: DE
- ◎ Number of issues: 3.14 billion
- ◎ Distribution program:
  - Circulation 1%
  - Front-end ecological construction 9%
  - 90% according to market ecological output





The DE token will run on the DE public chain, just like ETH runs on Ether, so it is the "native token" of DE. This means that in addition to paying for most of the costs of the DE public chain, it will also be used to:

- Pay "fees" to deploy smart contracts on the DE public chain
- Pledge selected DE public chain verifiers to receive corresponding rewards
- Perform cross-chain operations, such as transferring token assets across other chains and DE public chains

## **6.2 Seed money and other tokens**

### **1) Seed money**

A certain number of DE tokens will be burned and minted on the DE public chain during its creation phase. The funds, called "seed money", will be circulated after the first block and will be allocated to the initial relays and the initial set of validators introduced at creation. These DE tokens are used to pay transaction fees upfront to transfer more DE tokens from the DE public chain to other chains through a cross-chain mechanism.

DE token transfer across chains will be talked about later, but for transferring, it is generally locking the DE tokens on the DE public chain from the source address of the transfer to a system-controlled address and unlocking the corresponding amount from a special contract to the target address of the transfer on the DE public chain, or vice versa, when transferring from the DE public chain to other chains, it is locking the DE tokens from the source address on the DE public chain to a special contract and releasing the locked amount on the other chain from the system address to the target address. This logic is related to the native code on other chains and a series of smart contracts on the DE public chain.

### **2) Other tokens**

DEP Standard: DEP2, DEP8 and DEP20 tokens, which are native assets that can be transferred and traded (if listed) via fast transactions and sub-second certainty. Also, since the DE public chain is Ether compatible, it naturally supports ERC731,

ERC1155, and ERC20 tokens on the DE public chain, referred to here as "DEP2E\*" (the actual name will be introduced by a future DEP, which may also cover DEP8). DEP2E can be added by adding more methods to "enhancements" to disclose more information, such as token denominations, decimal precision definitions, and the ability to determine owner addresses for cross-chain token bindings. DE public chain to ensure that a token can circulate in both formats with confirmation of total supply and for different use cases.

### **3) Cross-chain transfer**

Cross-chain transfers are the key communication between two blockchains. Essentially the logic is:

- A "rollover" blockchain locks the amount of the source owner's address into a system-controlled address/contract;
- The "rollover" blockchain will unlock the amount from the system-controlled address/contract and send it to the target address.

Cross-chain transport packet messages should allow Relayers and Oracle to verify that

- A sufficient number of token assets are removed from the source address and locked in the system control address/contract on the source blockchain. This can be confirmed on the target blockchain.
- The appropriate amount of token assets are released from the system-controlled address/contract and assigned to the target address on the target blockchain. If this fails, a confirmation can be made on the source blockchain in order to release the locked tokens back (possibly minus fees).
- After this transfer action is completed, the sum of the total circulation of pass assets of both blockchains will not change, regardless of whether the transfer is successful or not.



## 6.3 Pledge and Governance Model

Proof of entitlement brings about decentralization and community participation. The core logic can be summarized as follows. You may see similar ideas from other networks, especially Cosmos and EOS.

- Token holders, including validators, can "bond" their tokens into pledges. Token holders can entrust their tokens to any verifier or verifier candidate in the expectation that it will become a real verifier, and then they can choose a different verifier or candidate to re-commit their tokens.

- All candidate verifiers will be ranked according to the number of tokens tied to them, and the top ranked will become the real verifier.
- Verifiers can share (partially) their blocking rewards with their principals.
- Verifiers may be subject to "Slashing", which is a penalty for bad behavior, such as double signatures and/or instability.
- The verifier and the principal have an "unbinding period" in order for the system to ensure that the token remains bound in the event that malpractice is detected, during which time the principal will be forfeited.

### 1) Reward

Verifier updates and reward assignments occur every day around 00:00 UTC. This is to save the cost of frequent pledge updates and block reward allocations. This cost can be high because blocking rewards are collected and distributed to DE verifiers and principals on the DE public chain. Deliberate delays are introduced here to ensure fair distribution:

- blocking rewards are not sent to the verifier immediately, but are distributed and accumulated in the contract;
- After DE receives a verifier set update, several cross-chain transfers will be triggered to transfer the rewards to the corresponding verifier's escrow address. The escrow address is owned by the system, so the rewards cannot be used until they are committed to be assigned to the principals.

- To make synchronization easier and to allocate time for slashing, N days of rewards will be distributed on N+2 days only. After the delegate receives the reward, the remainder will be transferred to the verifier's own reward address.

## **2) Decapitation**

Cuts are part of the on-chain governance to ensure that penalties are applied for malicious or negative behavior. Anyone can submit a DE slash. Transaction submission requires slash evidence and cost fees, but also brings greater rewards when successful. So far, there are two cases where cuts are available.

## **3) Double standard**

When a verifier signs multiple blocks with the same height and parent, this is a very serious error and most likely intentionally offensive. The reference protocol implementation should already have logic in place to prevent this from happening, so only malicious code can trigger this. When a double signature occurs, the validator should be removed from the Validator Set immediately. Anyone can have a slash request with DE signature evidence, which should contain 2 block headers with the same height and parent block, sealed by the offending validator. Upon receipt of the evidence, if it is verified to be valid:

- Instance DE validator set update cross-chain update to remove the validator from the validator set;
- A predefined amount of DE will be deducted from the verifier's self-delegated DE; neither the verifier nor its delegate will receive the pledge bonus.
- A portion of the slashed DE is assigned to the submitter's address, which is a bonus that outweighs the cost of submitting the slash request transaction
- The forfeited DE will be assigned to the escrow addresses of other verifiers and distributed to all principals in the same manner as the blocking bonus.

## **4) Not available**

The activity of DE relies on proof-of-interest that everyone in the verifier set can



get out of the block in time for their turn. Verifiers can miss their turn for any reason, especially if they have problems in their hardware, software, configuration, or network. This operational instability can hurt performance and introduce more uncertainty in the system. There could be an internal smart contract responsible for recording the blocking metrics missed by each verifier. Once the metric is above a predefined threshold, the verifier's blocking reward would not be forwarded for distribution, but shared with other better verifiers. In this way, poorly-running verifiers should gradually be voted out of the verifier set, as their principals will receive less or no reward. If the metric remains above another higher level threshold, the validator will be dropped from the rotation, which will be propagated back to the DE, which will then cut a predefined number of DE validators from the self-delegated DE. Neither the validator nor the delegator will receive their pledge reward.

## **5) Governance parameters**

There are a number of system parameters that control the behavior of DE tokens, such as Slash amounts, cross-chain transfer fees. All these parameters will be determined jointly by the DE Validator Set through a proposal voting process based on their pledges.

# **6.4 Example of the circulation of the DE token**

## **1) Project Ecology**

By giving away the platform equity pass DE, it attracts fans' attention to the DE project more. In the ecology of DE project, users holding DE tokens can enjoy a series of rights and interests such as DE token appreciation, fee deduction, asset appreciation, income rebate, supervision, voting and election, etc. DE rewards DE tokens to users who contribute to the system liquidity through various incentives. At the same time, through the incentive mechanism to give back to DE community users, by holding DE tokens, so as to enjoy the community rights and interests.

## **2) On-line activities**

At the beginning of the DE online exchange, we will actively build the operation

of the community community through kol, media news, community leaders and other channels to publicize the registration and coin delivery activities, recruitment of hero partners and trading fee reduction activities. Through the community management of elite leaders, comprehensive community promotion activities, sweepstakes, Q&A and gift-giving activities, etc., the community evangelists and newcomers will see the group's determination to be the head service provider.

### **3) Ecological landing drive**

The ultimate vision of DE is to realize the anonymization of all-round value system such as payment, communication, transaction and assets, break through various key technologies of value transmission network, build global value internet, and provide basic network for various value transmission applications. With the support of DE public chain application, through the ecological model, the corresponding passwords are generated, and the incentives and circulation are realized in this value system; the token mechanism is introduced in the incentive layer to achieve the purpose of flexible consensus mechanism for the public chain, and the value of DE tokens is increased and the network effect is promoted by motivating the community to maintain the public chain and develop DApp applications on the public chain.

In the future, in the DE public chain application ecology, DE will be used for:

- Incentivize the majority of users to participate in the DE public chain network to trade assets, obtain transaction fees and notary fees, and jointly maintain the DE public chain network security; reward transaction nodes and notary nodes in a way that supports mining;
- Support all types of consensus at an early stage as an equity metric to achieve DE's original consensus system;
- Support the DE public chain ecosystem to implement advanced smart contracts, avoid the "logic bomb" contract execution to break the network performance, and provide anti-fraud mechanism;
- Play the basic currency function of DE public chain ecosystem and provide the corresponding Token characteristics and asset liquidity basis of public chain DApp sub-currency;



- As a hosting target to realize the management of DE public chain DApp products and improve DApp visibility and exposure.

#### **4) Future value mapping**

The first thing that needs to be clarified is that the purpose of DE distribution is to attract traffic for the continued prosperity of DE public chain, and to build a more robust and diversified ecology after gaining user incentives and community consensus.

We will continue to develop and optimize the application of DE tokens based on the DE public chain. Complete code open source work and reward outstanding code contributors in the community. Establish a network of developers and DApp development community, and distribute generations upon completion of certain stages as well as creation of DApps; jointly conduct blockchain technology research and development with top teams and platforms around the world, and develop relevant payment terminal devices to enable enterprises joining the chain to adopt unified and fully compatible devices, so that they can smoothly transition to the DE main chain system. The future DE ecological scenario mainly includes three major parts: digital currency, pan-financial applications, and non-financial applications.

# Chapter VII Global Teams and Project Landing

## 7.1 DE Blockchain Technology Lab

DE Blockchain Technology Lab is a non-profit incubator focused on artificial intelligence technology research and development and blockchain technology application. DE Blockchain Technology Lab has been working in the field of blockchain and artificial intelligence for many years, and has been engaged in the research of core technologies such as public chain, blockchain underlying algorithm, smart contract, intelligent voice, natural language understanding, computer vision, etc. since its establishment, and has maintained the international cutting-edge technology level; actively promoting the implementation of blockchain products and industry applications. Now we have launched intelligent products and services covering many industries, promoting deep applications in consumer, enterprise chain reform, finance, social, trade, investment, shopping mall, intelligent Internet of things, intelligent services and other fields.

DE Blockchain Technology Lab core team brings together the best experts in the industry from various fields such as computer, information security, communication, mathematics, finance, DeFi, web development and high-frequency algorithmic trading, etc. The team members have rich experience in blockchain underlying, distributed database, cryptographic algorithm, application layer construction, cross-chain technology, etc. The DE team not only has strong technical capabilities, but also DE team has not only strong technical capability but also excellent scientific research capability, and has made significant research breakthroughs in many fields such as distributed ledger and cryptography.

In terms of solutions, DE Blockchain Technology Lab offers a comprehensive blockchain, artificial intelligence platform and services. Such services provide cloud-native machine learning and deep learning technologies to address different use cases and requirements.

- Interaction Services: DE Blockchain Technology Lab's AI services provide natural language understanding (NLU), automatic speech recognition (ASR), visual



search and image recognition, text-to-speech (TTS) and machine learning (ML) hosting services in the cloud.

- **Artificial Intelligence Platform:** DE Blockchain Technology Labs recommends using Deep Learning Library as a deep learning framework for a highly scalable, flexible and fast model training experience. deep learning AMI and CloudFormation templates optimized for CPU and GPU EC2 instances are available from DE Blockchain Technology Labs.

- **Blockchain Infrastructure:** The DE Blockchain Technology Lab EC2 P2 instance provides powerful Nvidia GPUs, which significantly reduces the time required to complete these calculations.

Backed by its core strengths, DE Blockchain Technology Labs has also gained the attention of giants with shareholders behind it: AIBrain, Amazon, Oxdata and Salesforce, dominating the global AI technology development and application space. In addition, the company has also secured the attention of Interchain Foundation, Binance Labs, Maven 11, KR1, Signature Ventures, Divergence Ventures, Dokia Capital, P2P Capital, Tokonomy Cryptium Labs and a number of individual investors.

At a time when the blockchain and digital currency market is exploding, DE Blockchain Technology Lab is actively laying out the construction of blockchain underlay and trading platform, and has become one of the industry benchmarks.

- DE Blockchain Technology Lab is one of the first institutions to study digital currency transactions and is far ahead in the field of digital currency storage, payment and transaction. Dedicated to let the general public will have the opportunity to enjoy the financial value contained in their financial assets, financial business users also have the opportunity to enjoy the services at a lower cost, and the operational efficiency of the whole financial system is greatly enhanced while the cost is greatly reduced.

- DE Blockchain Technology Lab has participated in or independently developed the blockchain underlying service system, which has served more than 10 million users in more than 80 countries around the world. The digital currency storage and exchange of DE Blockchain Technology Lab's related projects can realize the unified management of multiple blockchain assets, one-stop management, decentralized services, multiple security guarantees, and

multi-language support functions.

## **7.2 Promotion Cooperation**

In order to drive the increment of DE token market value and the development of DE public chain users and developers, DE Blockchain Technology Lab will realize all-round publicity through the channels of community, media and exchange.

### **1) Community**

As a community-driven social project, DE comes with decentralized values in its genes. Currently, we have partners all over the world, especially in the community sector, which is highly influential, and we will promote it through community channels. With Singapore as the base, we will lay out many countries such as UK, Australia, USA, Dubai, Japan, France, Korea, etc. 120 communities at the same time.

### **2) Media**

As more application features of DE tokens and DE public chain are launched, we will also promote them in global media. For example, Golden Finance, Non-Small, Coin World, Mars Finance, Babbitt, Wall Street Journal, Yahoo Finance, Google News, Meta, Bloomberg, etc.

### **3) Star partners**

To help secure the DE token and the DE public chain, we have recruited a group of all-star partners from the math, computing, public chain, DeFi, NFT, and Web3 fields to serve as validators for our network.

### **4) Exchange**

DE token is firstly online on Coinbase exchange, sharing the publicity channel of the exchange. And it continues to go online on global mainstream exchanges including Coinbase, Firecoin, OuYi, etc. With the circulation of DE tokens in more scenarios, it will surely become a new 10,000 times coin in Web3.0 era.



In the future, DE aspires to develop more application ecologies and DE token incentive models based on public chain business with the support of communities, media, exchanges and investment partners, join hands with global users to create brilliance and continue to improve the decentralized public chain infrastructure and DE token value consensus for all global users.

## **7.3 Project landing advantages**

Thanks to the advantages of continuously evolving and innovative blockchain technology, extensive business applications, and refined governance, the DE public chain is competitive in the following areas:

### **1) Technology**

DE has very mature and strong technical support, and has accumulated rich industry and technical experience in many fields such as blockchain underlay, cryptographic communication, mathematics, Web3, and information technology, and has made industry-leading breakthroughs in blockchain technology development and application.

### **2) Industry resources**

DE team brings together senior people with many years of practical operation experience and deep insight into the industry development. Moreover, the team will sign strategic cooperation agreements with top leading companies in target industries, which will provide strong support for DE's entry into applications, thus truly promoting DE's public link to more projects and developers.

### **3) Business Governance**

Unlike general public chains, DE has a clear and explicit strategic plan for the target industry. It is more focused and professional to leverage the distributed decentralization, tamper-evident and cryptographic security and peer-to-peer transfer of value of blockchain technology to penetrate the target industry and gain market share quickly.

#### **4) Funds Management**

DE's fund management will strictly adhere to the principles of fairness, impartiality and openness, and the development of the project will be the primary objective. DE team will keep the funds exclusively and ensure the security and sustainability of the funds. All funds used by DE and DE Blockchain Technology Lab will be disclosed to all investors regularly to ensure the openness of the use of funds.

#### **5) Space for development**

DE's target industries are all trillion-dollar public chain infrastructure and application services markets. The development team ensures sustainability by drawing up a sound governance structure to effectively manage matters such as general deliberation, code management, financial management, compensation management and privileged scope of operation.

DE perfectly inherits the characteristics and advantages of traditional blockchain ecosystem technology and solves the current technical bottleneck of blockchain, truly combining blockchain with business applications. Moreover, DE Blockchain Technology Lab has vigorously and continuously invested in the research, development and innovation of business technology represented by blockchain technology, applying it to enhance the value of traditional industries and promote the flourishing development of blockchain technology in various industries on the ground, complemented by a clear strategic development direction to create a mutually beneficial and win-win blockchain public chain ecosystem in the future.

### **7.4 Investor Protection**

In order to achieve protection for investors in DE projects, we will establish an investor protection foundation in conjunction with top global communities with the support of DE Blockchain Technology Lab. To avoid events that are contrary to the blockchain design concept, the foundation will help manage general and privileged matters of community projects by developing a good governance structure and system. The foundation will be set up with reference to the operation of traditional entities and will have various functional committees, including a strategic



decision-making committee, a technical review committee, a compensation and nomination committee, and a public relations committee, among other components.

The Strategic Decisions Committee is the highest decision-making body of the Foundation. It was established with the primary goal of deliberating and addressing important decisions facing the community in its development, including but not limited to:

- Revision of Foundation Governance Structure.
- Formation and rotation of the decision-making committee.
- Resolution on the appointment and rotation of the Foundation's Secretary General.
- Appointment and dismissal of executive officers and heads of functional committees
- Review and amendment of the Foundation's bylaws.
- DE's development strategy decisions.
- DE core technology changes and upgrades.
- Emergency decision-making and crisis management agenda, etc.

The term of office of the members of the Strategic Decision Board and the President of the Foundation is two years, and the President of the Foundation may not serve more than two consecutive terms. At the end of the term, the community will vote for community representatives based on the consensus of the next generation of DE, and then elect the core members of the decision-making committee. The elected core members will make important and urgent decisions on behalf of DE, and will be subject to credit checks and public compensation during their tenure.

The above-mentioned important matters are subject to voting by the Decision-making Committee by secret ballot, with each member of the Decision-making Committee having one vote and the President of the Foundation having two votes. Resolutions made by the Decision-Making Committee must be

approved by a majority of all members of the Committee in office. In addition, the Executive Director shall convene a temporary meeting of the Decision-Making Committee within five working days when one of the following situations arises.

- When deemed necessary by the Secretary General of the Foundation.
- When more than one-third of the members of the decision-making committee jointly propose.

The meeting of the decision-making committee shall be attended by the committee members themselves. If you cannot attend for any reason, you can appoint other members of the committee in writing to attend on your behalf. Those who do not appoint a representative shall be deemed to have abstained from voting at that meeting.

## **7.5 Compliance Exploration**

DE has over 40 security personnel, including veterans who assess peripheral risks and PhDs in cryptographic attack analysis. DE also has nearly 100 compliance personnel who comb through money laundering by examining transactions. In addition, DE also cooperates extensively with law enforcement. It follows strict identity verification procedures to comply with regulations such as KYC (Know Your Customer) and AML (Anti-Money Laundering), and tracks and monitors crypto assets sent to and from its website.

DE has established a project review committee composed of renowned institutions and professionals. There are several functional departments under the committee, while DE introduces authoritative third-party rating agencies to independently review the compliance risks in the project. The third-party authorities participate together to ensure that the review results are true and objective, reasonable and credible. In this way, the safety of users' investment and income is guaranteed.



## Chapter VIII Disclaimer

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⊗ You acknowledge, understand and agree that Tokens may not have any value, are not guaranteed and do not represent any value or liquidity attributes, and may not be used for speculative related investments.

⊗ Neither the Community nor its affiliates nor the Team Members are responsible or liable for the value, transferability, liquidity of Tokens or any market for DE offered through third parties or otherwise.

⊗ You acknowledge, understand and agree that you will not be eligible to purchase any Token if you are a citizen, national, resident (for tax or other related purposes), resident or national green card holder of a geographic area or country that meets the following conditions:

i. The sale of Tokens may be defined or interpreted as the sale of securities (however named) or investment products;

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