

**TRX.MEDIA**

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# Chapter 1 Background of the project development

## 1.1 Blockchain and Gaming Applications

Blockchain is a bookkeeping technology that is jointly maintained by multiple parties and uses cryptography to secure transmission and access, enabling consistent storage of data, making it difficult to tamper with and preventing repudiation, also known as Distributed Ledger Technology.


Blockchain technology is a new distributed infrastructure and computing paradigm, thanks to its features and advantages: a blockchain data structure to validate and store data, a consensus algorithm of distributed computer nodes to generate and update data, cryptography to secure data transmission and access, and smart contracts composed of self-scripting code to program and manipulate data. In addition, blockchain technology is able to establish reliable trust between peers in the network, making the process of value transfer free from reliance on intermediaries, making information public while protecting privacy, making joint decisions while protecting individual rights.



With the rise of the NFT model, blockchain, digital currency and gaming will collide with new sparks, especially the NFT-led DeFi ecosystem, driven by pledged lending and liquidity mining models, the whole market landscape is undergoing profound changes and the future advantageous market is full of opportunities. Gaming is one of the earliest and largest blockchain application areas. Blockchain+gaming is exciting because it empowers players and enhances their experience. Through blockchain gaming, players can enjoy several key benefits, such as

#### 1) Ownership of game items

All props and elements in the game can be chained. Whether it is scarce resources, rare props, coveted loot, as well as characters and avatars, any entity in the game environment can exist as a crypto asset. Typically, this is represented on existing blockchain networks as homogeneous tokens (in the form of game tokens) or non-homogeneous tokens (in the form of props and avatars). The core component of a blockchain is that it provides users with ownership of its value. When game elements are on the chain, they can interact directly with the player. When avatars and accounts are linked to the player's wallet, players can



send their collected loot, accumulated currency to their wallet, which they have earned during the game. In such a system, players can harvest what they have sown. They have a variety of items that are rare and will always belong to the player. The developers have no right to take back anything the player has won, and even if the game is closed, these items still belong to the player. They can send props etc. to other wallets and sell them to others for a realistic profit. The player's ownership of their items allows them to pick up tangible fruits of their efforts and successes.

## 2) Demonstrable fair gameplay


Bad game play is bad. When players cheat their opponents, or when the game doesn't work the way people expect it to, the experience is very bad for every player. Blockchain games allow for "provably fair gameplay". When a game is on the chain, the game logic and gameplay elements are also shared. The consensus mechanism that secures the blockchain network also secures the game. This means two things for players. One, cheaters or anyone else who tries to violate the player cannot succeed. If their actions contradict the game logic, their activity will be rejected; and two, the game is transparent.

### 3) Cross-game communication

What do players do when they stop playing their favourite games? Either they quit, or the game disappears. That is, either the community leaves or the developers stop running it. Unfortunately, there's not much they can do about it other than find the next game and start from scratch. Games exist in suspended independent universes. As far as the industry is concerned at the moment, there is no continuity between different games. With blockchain, this will change. When games and game assets exist on the blockchain, they can communicate with any other environment that is on the same blockchain. If a developer makes a sequel to a game, then props from the previous game can be carried over to the second game. Incarnations can be used in multiple games. Quests or events can be carried out across games. What's more, the player may never have to start again from the beginning. Ideally, the player has a single generic avatar that follows the player across games. The player's virtual currency and props can be used across games.

### 4) Reduce costs

The game development industry has a low payout rate and the associated costs can be higher than the revenue. Without a



good revenue model, even if the game has a certain user base, expenses such as game distribution, server maintenance, and player services may be a burden that developers cannot afford. By building games on the blockchain, all of these costs can potentially be outsourced to miners or validators. Online games Publishing and distribution could be a zero-cost affair.


#### 5) Enhancing the player base

Existing and future players in blockchain games are an interesting subset of the consumer base. These players take a keen interest in their gameplay and gain more attention through game revenue. Blockchain gaming connects developers with a community of 'super players' that have more resources and investment in gaming. This allows for a more positive, productive and beneficial relationship than traditional gaming rivals.

## 1.2 DeFi and the development of NFT

With the introduction of ethereum smart contracts, the concept of DeFi, or distributed finance, emerged in 2018, in the sense that it has the ability to build financial scenarios through contracts that allow people to complete financial services without intermediaries, such as lending, stable coins, token trading,





derivatives trading, insurance, forecasting, etc. It presents a different approach to what has been done before. It presents a different set of financial services to those previously completed. For example, it has a tamper-evident and transparent ledger, non-human controlled contracts, even the developers of the contracts, the developers of the protocols, have no control over the operation of the contracts, it is a new financial ecology with many possibilities.

DeFi offers unprecedented liquidity to the entire crypto world through liquidity mining, pledged lending, automated market making, etc. In 2021, DeFi becomes a more mature financial marketplace and may even become part of central finance. In addition, NFT is also experimenting with possibilities in various areas.

The concept of NFT has since originated from a pop-up app, CryptoKitties, which stands for Non-Fungible Token, meaning non-homogenous tokens, mainly issued by the ERC-721 standard. In simple terms, each NFT is a unique digital currency asset that can be circulated, traded and purchased, with different values and properties from each other, and is not interchangeable.

NFT non-homogenised tokens are unique, non-detachable




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Tokens, such as Tokenised game props, tickets, artwork, etc. NFTs are based on the ERC721 standard and later the ERC1155 protocol, where each ID represents not a single asset, but a class of assets, allowing multiple tokens to be created in bulk at once. Overall, a non-homogenised token is a unique digital asset. Assets like Bitcoin are fungible, meaning that all Bitcoins are identical and interchangeable.

Currently, we can now clearly see that the main application areas for NFT include games, artwork, domain names, collectibles, virtual assets, real asset pass-throughs (STOs) and other areas, with artwork and games in particular receiving more attention in the market. Some game props and artworks are naturally unique and indivisible, which makes them suitable for coupling with NFT, and therefore NFT can effectively prevent counterfeiting and fraud of such items.

The NFT market has been growing rapidly since the end of 2020. There is growing interest from traditional companies looking for new business. In addition, as the technology continues to evolve, more money is coming into the sector. We have seen a dramatic rise in interest in NFT in the crypto market in just the past few months, with total transaction volume already exceeding




billions of dollars. with a market cap of over \$30 billion and 24-hour trading volume of over \$34, NF represents 0.7% of total cryptocurrency transactions. While the current NFT share figure may seem modest, its huge potential has caught the industry's attention.

In the context of global digital transformation, NFT will play an irreplaceable role in the future blockchain ecosystem, and may even become a key driver and cornerstone for many industries to achieve digital economic transformation. For exchanges, it is worthwhile to think deeply about how to seize the opportunity under the new windfall and use it to promote the development of the digital economy.

### 1.3 The rise of the Metaverse

The Metaverse is a concept that originated in science fiction or points to the 'ultimate form' of the internet, the term Metaverse is derived from author Neal Stephenson's science fiction novel Snow Crash, which describes a world where people interact with software in three dimensions as avatars. The Metaverse

Conceptually, the term Metaverse is made up of Meta and Verse, with Meta standing for transcendence and verse standing




for universe, which together usually denote the concept of 'beyond the universe': an artificial space that operates parallel to the real world. Looking back at the development of the Internet, from the PC LAN to the mobile Internet, the immersion of Internet use has gradually increased and the distance between the virtual and the real has gradually decreased. In this trend, the Metaverse, where immersion and engagement are at their peak, is the 'ultimate form' of the Internet.

Technically, the metaverse will be supported by a number of independent tools, platforms, infrastructures, protocols and so on, as the traditional Internet demands more immersion, participation and permanence. As the maturity of technologies such as AR, VR, 5G and cloud computing increases, the metaverse is expected to gradually move from concept to reality.

Meta-universe: virtual and reality are highly interoperable, with a closed-loop economy attached to an open source platform. Although there is no detailed description of the final form of the metaverse in the industry, we can still identify four core attributes of the metaverse by refining its characteristics.

-Synchronisation and anthropomorphism. The virtual space is highly synchronised and interoperable with the real world, and



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the interaction is close to real. This means that everything that happens in the real world will be synchronised with the virtual world, and that users will get near-real feedback when interacting in the virtual metaverse.

-Open source and creativity. Open source means both open source technology and open source platform. The meta-universe sets up "standards" and "protocols" to encapsulate and modularise the code in different ways, so that users with different needs can create in the meta-universe, forming a native virtual world and continuously expanding the Meta-universe Edge.

-Perpetual. The Meta-Universe platform does not "pause" or "end", but runs as open source and continues indefinitely.

A closed-loop economic system. Users' production and work activities will be recognised with a unified currency that players can use to spend content within the platform, or exchange for real currency at a certain rate. The economic system is the engine that drives the metaverse forward and forward.

## 1.4 The birth of TRX gs

TRX gs was developed by the IABNI Foundation technology development team in Singapore and is completely decentralised.



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The team sees the game as the primary form of the metaverse.

In terms of product form, games are the prototype of the metaverse. As virtual worlds built by people based on simulations, extensions and pie-in-the-sky imaginations of reality, games have a product form similar to the metaverse in that.

1) In terms of synchronisation and anthropomorphism, games give each player a virtual identity, such as a username and a game image, and can form social relationships and meet new partners in the game community by virtue of this virtual identity; at the same time, games constitute a cognitively demanding environment through a rich story line, frequent interactions with players, anthropomorphic graphics and coordinated sound effects, so that players must use a lot of mental resources to focus on This results in what is known as 'immersion'.

2) The open source and creative aspects, where the player has full freedom within the framework and rules set by the game to simply enjoy the graphics and sound effects, but also to pursue the ultimate in equipment and manipulation, etc.

3) In terms of economic system, each game has its own in-game currency in which players can shop, sell, transfer money and even withdraw cash. In summary, several basic needs of the



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meta-universe are integrated in the game, making it the most likely track to build the prototype of the meta-universe.

Based on the convergence of Web 3.0, holographic internet technology, blockchain and NFT, the values presented by the metaverse concept are in line with the core values of the internet. TRX gs believes that the metaverse may be the ultimate form of the internet. Therefore, we have taken the game as an entry point to create TRX gs - a virtual life blockchain game based on NFT + meta-universe to make the link between reality and virtual more efficient and the circulation of value more abundant.

## chapter 2 overview of the trx gs project

### 2.1 Introduction to the TRX gsproject

TRX gs combines the three blockchain categories of NFT, Metaverse and DeFi, aiming to create a decentralized online virtual reality-based gaming platform that incorporates characters, props and life storylines into a virtual social, where players can purchase weapons, battle armor, props and gems in the virtual world. Engage in different collection raising virtual, life, action and other games. TRX gs is therefore the first and only project to cross the metaverse and NFT domains. all the benefits that TRX



gs brings will be presented in the form of a native in-game token, TRX gs.

The TRX gs game ecosystem combines strategy, collection and development with strong gameplay. It is also the main body of the NFT metaverse ecology at this stage. TRX gs uses the game as a diversion to create traffic for TRX gs in the early stages, giving the token real circulation value, opening up the transaction channel between users and the platform, providing a broader traffic support for TRX gs ecology 2.0, and thus building a consensus base for TRX gs.

The TRX gs Virtual Life blockchain gaming system is decentralised, transparent and pass-through incentivised. TRX gs has quickly gathered a large group of top international blockchain talents, aiming to use the online gaming industry as an opportunity to drive industry change and create the world's top blockchain gaming infrastructure and NFT, meta-universe ecological application system. trx gs integrates third-party resources through blockchain network and token mechanism, making the online virtual environment and physical environment become one, creating a borderless The TRX gs is a unique and unique platform for users around the world to create an





unprecedented entertainment experience.


In the future, TRX gs will continue to expand its diversified ecology including storage cloud platform, game distribution platform, game prop trading platform, NFT prop asset exchange, advertising platform, meta-universe mining and incubator to provide complete gaming solutions for players, miners, R&D and channel operators. Developers can also create blockchain applications through the TRX gs toolset, as well as access comprehensive DeFi and NFT service support through other platforms.

## 2.2 Platform ecology building

As a blockchain game underpinned by the NFT, metaverse and DeFi concepts, TRX gs contains the following core components in terms of platform ecology building.

### 1) NFT game system

With the support of TRX's underlying technology, TRX gs can provide developers on the Dapp with an easy-to-use and complete blockchain game infrastructure, including a visual development kit and on-chain ecological environment, so that developers do not need to focus on the implementation of



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blockchain technology, but can directly complete the development of blockchain games in a graphical way, with a low threshold and fast and efficient. A fair, just and open gaming environment with transparent data, transparent rules, no backend manipulation of prop drop rates and malicious induced spending, and a long-lasting, secure and decentralised preservation of gamers' assets. At the same time, TRX gs hopes to carry the value fission of the digital asset economic model through the NFT model, helping developers and players to achieve a better alignment of interests by.

- an application development framework for multiple operating systems and multiple blockchain environments, supported by the TRX underpinning.

- Provides fully scripted, component-based and data-driven application development tools.

- A high performance application oriented, leveraging the existing toolset, tightly integrated with the blockchain interface layer, allowing all games to easily support blockchain.

- Enables the NFTification of game assets and props, allowing anyone to participate in the generation, production, investment and collection of NFTs, giving better value to every subject



involved in the game.


In addition, TRX gs is able to support third party developers in programming, debugging and publishing decentralised gaming applications and hybrid architecture gaming applications for blockchain environments. At the same time, TRX gs integrates a distributed blockchain-based user account system, wallet and NFT digital asset circulation, enabling the off-chain permanent storage and cross-chain use of in-app game asset NFT. This results in.

- helping aspiring game product derivative developers to asset the content they produce, enabling them to continuously earn revenue from the use, management and circulation of their assets, and providing a convenient, decentralised distribution channel for their games

- Helping fans and players to transform the data formed by their time and energy consumption and the props obtained by their consumption into assets that can be safely stored and circulated, and giving players the right to manage and commercialise them.

## 2) Meta-universe game ecology

TRX gs believes that in the internet world created by the



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metaverse, people are both participants and creators. The experience people have with virtual games now is unmatched by the unparalleled excitement and tremendous explosive power that the metaverse brought at that time. In the future, as VR and AR technologies continue to develop and blockchain technology supports transactions, this blockchain-based decentralised platform, Metaverse, is expected to move from a certain gaming crowd to a larger audience. Within the crowd, the line between reality and gaming will become more blurred, with the virtual coming closer to reality.

As far as current technology is concerned, the most likely way to realise the metaverse concept is through gaming. The virtual reality requires a large amount of technology to recreate reality, which is what the gaming sector specialises in, and can even be supplemented with VR and AR technologies to enhance the user experience in order to increase immersion, which is something that games can achieve. to build its own metaverse model.

In TRX gs's Virtual Life blockchain game, the metaverse concept has the following key features.

- Identity

- Friends



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-Immersiveness

-Anywhere

-Variety

-Low Friction

-Economy

-Civility


The TRX gs metaverse game ecosystem builds game worlds that enable gamers to use specific blockchain assets in each game of the game multiverse, a truly user-owned virtual world where users have full control over the content environments and applications they create, which can range from any static 3D scene to applications or games with more interactive features.

The TRX gs metaverse gaming ecosystem also aims to create a deeply immersive virtual world in which players can collaboratively create virtual worlds and games without the need for central authority management, disrupting existing game makers and allowing players to build, own and monetise gaming experiences in the blockchain using the platform's utility token TRX gs.

### 3) TRX gsSWAP Exchange

TRX gsSWAP is a decentralised exchange that supports multiple chains, and the multi-chain cross-chain solution provides a solution for asset circulation, transfer and trading across different channels. The platform token TRX gs incorporates the NFT concept, increasing its resilience to external volatility and reducing the magnitude of fluctuations in the value of the pass. This further completes the V decentralised infrastructure and creates a decentralised virtual world in line with the blockchain's mission.

TRX gsSWAP will build the most secure, stable and efficient digital currency value network for global users and provide the best quality digital currency services. TRX gsSWAP has developed its own aggregation system, which is capable of handling millions of transactions per second. In addition, in order to meet the diversified needs of users, TRX gsSWAP has not only developed an advanced aggregation system for coin exchange, but also opened up a secure and efficient C2C trading service to build a continuous, transparent, low-friction and non-discriminatory trading environment for users using blockchain technology and the pass-through economic model.



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In the future, TRX gsSWAP will continue to upgrade the platform technology and improve the ecological system while focusing on improving the user experience, and accumulate distributed ecological resources and energy with scientific and efficient management and operation, and export this energy to the whole industry. This will create a trustless and highly decentralised financial infrastructure for global users.

### **2.3 Core Business Value**

With the concept of applying the NFT, Metaverse and DeFi concepts to the gaming ecosystem, TRX gs will open up a new era of the Internet of Value, supported by the core ecosystem of the NFT gaming system, the Metaverse gaming concept and the TRX gsSWAP exchange. Thanks to the advantages of continuously evolving and innovative technology, extensive commercial applications and refined governance, TRX gs is competitive in the following areas.

-Technology: TRX gs has a very mature and strong technical support, and has accumulated rich industry and technical experience in various fields such as blockchain, gaming, artificial intelligence, NFT, metaverse, VR/AR, etc. It has made industry-leading breakthroughs in the development and



application of the underlying blockchain technology.

-Industry resources: The TRX gs team is a perfect combination of senior people with many years of practical operational experience in multiple industries and deep insights into industry development. In addition, TRX gs will sign strategic cooperation agreements with top leaders in the target industry, which will provide strong support for TRX gs's entry into the target industry, thus truly driving the practical implementation of the TRX gsNFT+ metaverse game application.


Business Governance: Unlike typical gaming projects, TRX gs has a clear and well-defined strategic plan for the target industry and a self-governing community model that continues to empower a free, fair and high-value ecosystem to flourish. value to penetrate and rapidly gain market share in targeted industries.

TRX gs's funds will be managed under the auspices of the TRX gs Eco-Development Foundation, in strict compliance with the principles of fairness, impartiality and openness, and with the development of TRX gs as the primary objective. The use of TRX gs's funds will be disclosed to all investors on a regular basis to ensure that the funds are used openly.

-The trillion dollar gaming market is the target industry for







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TRX gs. The development team has developed a sound governance structure to ensure sustainability through the effective management of general proceedings, code management, financial management, compensation management and privileged scope of operations.


In summary, TRX gs has a clear commercialisation logic supported by its core competencies, and based on the TRX framework system, each technical aspect and organisation of TRX gs has a strong specific and logical DNA, and on this basis, numerous modular and transformative technical solutions or mechanisms are proposed.

1) User ecology

-TRX gs will create a unique pass for all users of digital encryption - TRX gs.

-Provide users with a low threshold and high security wallet, becoming a secure payment platform for players to participate in the chain game.

-Create a digital token that circulates in the global gaming scene: TRX gs supports transactions and settlements across the ecosystem.



-Build a virtuous and sustainable ecology around users, including NFT games, pledge mining, etc.

## 2) Technical aspects

-Blockchain functions are modularised and integrated into the TRX engine and its front-end development tools, directly covering DAPP third-party developers, penetrating TRX ms tokens into hundreds of thousands of games and applications, covering more than one billion users worldwide.

-Integrating blockchain technology into the back-end service logic, using node servers around the world to provide developers on DAPPs with a fast communication solution and a trusted smart contract server logic.

-We will build a complete development toolset, documentation and development community around developers to provide the most complete and convenient developer ecosystem.

## 3) Operational level

-TRX gs will work with professional global distribution teams for games and applications, integrating the content of the TRX gs payment system for global operations, ensuring the


global circulation of TRX gs.

-TRX gs will continue to improve the DAPP chain game platform and will enter into strategic partnerships with top global media giants to promote games and products based on TRX gs technology.

#### 4) Incentive level

At TRX gs, users can order games through a special interface. The brand commercial can choose a number of settings for the games and slots. The interface then calculates the cost of the game. Anyone wanting to play the game forms a smart contract when the campaign is ready. Any participant who wants to play the game must pay a fee. There are several ways to get TRX gs tokens and be able to join the game. During registration, users use the social network to confirm their identity. In order to join, they will receive tokens. Firstly, these tokens can only be used to check the game. Only after receiving the reward can the user exchange the tokens for prizes or cash them in.

Redeeming tokens for prizes or cashing in. When an existing user invites a friend to join TRX gs, they will receive a token reward. Once an invited user joins at least one game, tokens become available. Another way to obtain tokens is to buy them



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from an external exchange. Each user account is connected to a wallet address. Users can add tokens they have purchased outside the system to this wallet.

Finally, each time a user wins a game, they receive tokens as a reward. Some games have only one winner who can receive more tokens. In others, the reward fund is shared by many people who complete the game. Users can exchange their tokens for goods from TRX gs partners.

## Chapter 3 TRX gs Technical System


### 3.1 Blockchain API

#### 1) APIs

For blockchain technology, APIs are crucial. TRX gs will formally open up blockchain technology through the API (Application Programming Interface released on the BSC developer platform, providing a new mode of access to application scenarios for participants in various industries.

TRX gs

TRX gs's API allows applications to register users, query the blockchain, and publish transaction-related signals, allowing



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developers to quickly test chain codes or query the status of transactions. Thus, TRX gs will be built as a pan-business vertical application platform dedicated to aggregating global enterprises and service providers from various industries to provide quality multi-disciplinary services.

## 2) Collaborative open interfaces

TRX gs's pan-game commercial platform is a cross-industry service platform that is integrated and developed based on actual conditions, with open support and high selectivity. Therefore, in order to facilitate business system interfacing with participating institutions, TRX gs's blockchain system provides an independent API gateway, which provides the business functions provided by TRX gs's blockchain system to the public in the form of REST APIs to achieve a collaborative operational interface. On the one hand, collaborating third parties can quickly access the TRX gs blockchain system and integrate it with their other internal systems, and gain access to real-time user data through the platform. On the other hand, when the partner third parties own the data model, the unique user information is less likely to be stolen or accessed by other operators due to cryptographic identification, making it more anonymous, secure, reliable and

unique.


## 3.2 User service layer

### 1) TRX gs Smart Wallet

TRX gs will develop an exclusive TRX gs smart wallet in the ecology. Users can make more than 100 kinds of chain payments and more than 30 kinds of traditional payments through the TRX gs smart wallet, connect to the ports of major exchanges, make payment transactions based on real-time exchange rates, deduct the equivalent amount of TRX gs, achieve second-level transactions, and arrive in real time.

One-stop management: The TRX gs smart wallet unifies the management of multiple digital currencies, supporting not only the storage and management of mainstream assets such as bitcoin and ethereum, but also the standard protocols of smart contract platforms such as ethereum and BSC, and quickly adding tokens issued based on each platform. While alleviating the burden of management for users, it also provides wallet service support for new user blockchain projects, allowing project teams to focus more on core services.

-Decentralised services: TRX gs smart wallet upholds the




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core tenets of blockchain, providing users with a decentralised digital currency storage solution where the wallet key and private key information for all types of currency addresses are stored in the user's local system. The TRX gs smart wallet also offers a convenient key backup solution - users simply make a single backup, write down 12 words and save them in a safe place. Even if a digital currency category is subsequently added, all categories of digital currency assets can be restored using the 12 words backed up.

Multiple security: In addition to giving users full control over their wallet keys, the TRX gs smart wallet also offers multiple signature technology security and two-step authorisation verification for digital asset management of different sizes, giving users the option of mobile phone verification codes, fingerprints and live verification when transferring transactions, ensuring all-round security of digital currency assets.

-Multi-language support: The TRX gs smart wallet initiative will support multiple languages in the mainstream digital currency markets such as Chinese, English, Japanese and Korean, clearing language barriers for the creation of a world-class wallet application.



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Blockchain wallets are software programs that store cryptocurrencies, and each registered user of TRX gs has a private key (secret number to their wallet. This key is the only way to access their digital currency address, and therefore the only way to receive or send credit.

Within the wallet, users retain their application passes in the TRX gs ecosystem, and changes in application passes correspond to changes in the TRX gs mainnet ledger information. The essence of managing a wallet is managing the private key, which has little chance of being recovered if it is lost.

## 2) Privacy protection

In order to solve the problems of information mismatch and evaluation falsification, TRX gs will encrypt and save the identity information into the system through asymmetric encryption technology. To ensure that the information on the chain is valid, authentic and secure. The application principle is as follows: each user of TRX gs needs to register on the system, after registration, the user has a unique private key to prove the real identity information. Each user with a private key can record information on the blockchain, and can also view information within their rights.



The TRX's privacy protection mechanism is as follows.

-The public key and private key are generated: the user first generates a 256bit private key (yellow key from the cipher text using the SHA256 (Security Hash algorithm; when the HASH function is used, the Data length changes and the hash value length remains the same; each Data character corresponds to a unique hash value, which can be used as a data Fingerprint. This private key is encrypted using the elliptic encryption algorithm to generate a public key (light purple key), which can be known to everyone. Everyone can use this public key to get the user's address via the HASH function. Due to the one-way nature of the HASH function

i.e.  $\text{Hash}(x = y)$ , it is very difficult to find  $x$  through  $y$ . It is almost impossible to crack the public key through the address, or to crack the user's private key through the public key.

-Encryption and decryption: Encryption - if someone (e.g. the user wants to encrypt the data, they encrypt it using the public key. Decryption - the private key is needed to decrypt it, this is known only to the user.


## 3.3 Blockchain Underlying Services

### 1) Distributed systems

Distributed computing is a computer science that studies how to divide a problem that requires a very large amount of computing power to solve into many small parts, then distribute these parts to many computers for processing, and finally combine the results of these calculations to get the final result. A distributed system is a system in which components are distributed across a network of computers and communicate and coordinate their actions through messaging. In simple terms, a distributed system is a number of computers connected by a network and working together. Collaborative working requires the solution of two problems.

-Task decomposition: breaking a problem into a number of independent tasks, each running on a single node, to enable concurrent execution of multiple tasks.

-Node communication: Nodes communicate with each other, and a specific communication protocol needs to be designed to achieve this. The protocols can take the form of RPC or Message Queue.



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One of the engineering challenges of TRX gs in the field of transaction payments: high concurrent transactions and large amounts of data can be solved using distributed systems. Depending on the hierarchy and organisation of the application, distributed systems can be divided into two-tier C/S structures and multi-tier structures (three-tier C/S structures . The former is a traditional and mature application technology, while the latter is becoming increasingly popular and evolving.

TRX gs is a distributed system with a multi-tier architecture as required. A multi-tier application architecture is a traditional two-tier structure with an intermediate layer between the client and the database server and a clear division of labour between the layers.

The multi-tier architecture has many technical advantages over the traditional two-tier application model, which can be seen in the following aspects: ease of maintenance. The distributed application uses a multi-layer architecture, which distributes the logical structure of the application in a reasonable way. The client program is basically unchanged.

-Fast execution: the thin client reduces the workload on the client side. The high performance of the application is enhanced


by load balancing and the data caching capabilities of the middle tier. - High security: The middle tier isolates direct client access to the database server and protects the database.

-Stability: The middle tier buffers the actual connections between the client and the database so that the number of connections to the database is smaller than the number of clients, making the database server more stable. The quarantine mechanism transparently transfers client work to other servers in the event of a server failure. Scalability is based on a multi-tier distribution system, so that when business increases, more application servers can be deployed in the middle tier to improve response to clients, and all changes are transparent to clients.

## 2) Distributed Database System (Hbase)

HBase is a highly reliable, high-performance, column-oriented, scalable distributed database designed to address the limitations of TRX gs relational databases in handling large amounts of data.

The HBase cluster consists of two to three HMaster and a large number of HRegionServer, which is responsible for the management of Table and Region, such as adding, deleting, changing and checking the metadata of Table, managing the load



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balancing of HRegionServer, and adjusting the distribution of Region. It is also responsible for managing the load balancing of HRegionServer and adjusting the distribution of Regions.

The HRegionServer is mainly responsible for responding to user I/O requests.

### 3) Ledger structure

TRX gs's ledger structure is a distributed ledger, which is a database that is shared, replicated and synchronised between network members. The distributed ledger records transactions between network participants, such as consumer payment transactions for hotels and travel. Each record in a distributed ledger has a timestamp and a unique cryptographic signature, which makes the ledger an auditable history of all transactions in the network.

One implementation of distributed ledger technology is the open source Hyperledger Fabric blockchain. In order to keep the ledger abstract and contain only valid and committed transactions, in addition to the state and ledger, peers can maintain a validation ledger. This is a hash chain derived from the ledger by filtering out invalid transactions.



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The structure of the TRX gs ledger is constructed as follows. Since PeerLedger blocks may contain invalid transactions (i.e. transactions that are invalidly recognised or have invalid version dependencies), such transactions are filtered out by the peer before adding transactions from the block to the vBlock. Each peer performs this operation itself (e.g. by using the bitmask associated with the PeerLedger).

A vBlock is defined as a block with no invalid transactions that have been filtered out. Such a vBlock is dynamic in nature and may be empty. vBlock constructs are illustrated in the following diagram.


Each peer links a vBlock to a hash chain. More specifically, each block of a verified ledger contains: a hash of the previous vBlock + vBlock number. The hash of the corresponding block (in PeerLedger of the current vBlock) is derived by computing an ordered list of all valid transactions committed by the other party since the last vBlock (i.e. the list of valid transactions in the corresponding block). All this information is concatenated and hashed by the peers to produce a hash of the vBlock in the authentication ledger.

### 3.4 Security mechanisms

TRX gs uses a combination of asymmetric encryption (RSA) and symmetric encryption (AES) to meet the needs of data security and privacy protection without losing overall performance. Asymmetric encryption is also a digital signature technique, based on the elliptic curve cryptography of the public and private keys to achieve, involving a hash function, the sender's public key, and the sender's private key. The public and private keys are differentiated and correlated, and the public key can be generated based on the private key. The content encrypted by the public key can only be decrypted by the corresponding private key.

The content encrypted by the private key can only be decrypted by the corresponding public key. The transaction information stored on the blockchain is public, but information such as user identity and assets involves the privacy of the data subject.

To protect privacy, TRX gs performs secondary encryption and authorisation processing on this private information, which can only be accessed by the other party holding the query key, thus ensuring data security and personal privacy.



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By using homomorphic-like encryption technology, TRX gs can effectively solve the privacy problem of public blockchain. The technology can balance the transaction information and private information of the stored data subjects in the blockchain, so that the public blockchain has the privacy effect of the private blockchain without changing the properties of the common blockchain.

### 3.5 Cross-chain communication protocols

Communication protocols between blockchains are similar to those used in traditional networks, such as TCP/IP, in that messages are passed through the establishment of a reliable connection. The message is divided into two parts: the message header, and the communication information (Data). The message header records the source, destination, length, category, etc. of the message. During delivery, the message header is stripped and modified layer by layer, and the message is passed on to the message destination. In addition, the delivery of the message is stateful, so that the sender can understand the current state of the communication and react correctly based on feedback from the receiver.

The TRX gs Cross Blockchain Communication Protocol





consists of two main components, the communication address and the communication packet. The communication address consists of the chain ID of the chain from which the message originated and the current chain height. The communication packet consists of a part, the communication packet header and the communication message (Data). The communication state corresponds to the communication state mechanism in the network communication protocol.

When a communication packet is sent, the communication status is "Receiving Pending". When the receiver receives the message, it returns a communication packet to the sender with the communication status "Sent successfully". If the sender receives a packet with the "Receive Success" flag, the sender will reply with a packet with the "Receive Success" flag.

This is a successful communication. If, during the process, a communication packet fails to be received, e.g. the receiver never replies with a "sent successfully", the sender will resend the transaction after a certain period of time in an attempt to establish communication again.


## 3.6 Big data operational observations

TRX gs uses big data analysis to advise players on reasonable choices. In addition, the user data collated by the data runtime platform is sorted into categories and centralised in the observation platform, which allows partner merchants to observe the trajectory of their customers' payment transaction behaviour.

The collection and aggregation of all this data will enable the observation of complete user behaviour and user profiling, which on the one hand can drive product and operational decisions. For example, in marketing, the promotion of advertising effects, promotional activities and how to send red envelopes to users for the cooperative yo-yo system merchants are all based on data analysis. On the other hand, it can be used to push users to the pan-life information that they subscribe to. Personalised services, personalised entertainment services, for example, all require user data analysis. Based on the analysis of customers' favourite characteristics, payment trajectories, points of interest, etc., TRX gs can be used to provide even more intelligent services.

## 3.7 Basic Underlying Support

- 1) Transaction structure



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The state is the atomic unit of information in TRX gs. The state does not change: it is either in circulation "unspent" or not validly consumed "spent". A transaction consumes 0 or more states (inputs) and creates 0 or more new states (outputs) .

Since state cannot exist outside of the transaction that created it, whether state is consumed or not can be identified by the identifier of the transaction that created it and its index in the list of transaction outputs. Transactions consist of the following components:

- Instruction: an input state allows for multiple output states. For example, an asset can be issued, transferred to an account .

- Timestamp: If provided, then a timestamp fixes the time frame in which the transaction can be considered to have occurred by the new owner, or at the time of redemption by the owner.

Since the signature is added at the end of the transaction and the transaction is identified by the hash used for the signature, the extensibility of the signature is not an issue. It is never necessary to use hash to identify a transaction including the signature information. Signatures can be generated and checked in a parallel manner and they are not directly exposed to the contract



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code. In fact, the contract checks that the set of public keys specified by the instruction is appropriate, because a transaction is only valid if every public key listed for each instruction has a matching signature. The structure of the public key is opaque. In this way, the flexibility of the algorithm is preserved: the new signature algorithm is deployed without the need to adjust the code of the smart contract itself.

- the details of the cash being issued - the total amount, the currency, the issuer, the owner, etc.

- the contract code, whose verifyingO functionaries are responsible for verifying that issue transaction and future transactions that consume that state

- a hash of a file containing the important legal text that provides the basic legal regulatory environment for the behaviour of this state and its contract code.

The transaction also contains an instruction specifying that the purpose of the transaction is to issue cash. The directive also specifies a public key. The check function of the cash state is responsible for checking that the public key specified in the instruction belongs to the participants in the transaction, who are required to provide their own signatures to make the transaction




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valid. In this example, amnesia means that the verify function must check that the instruction specifies a public key corresponding to the issuer of the cash state. the TRX gs framework is responsible for checking that the transaction has been signed by all the public keys listed in the instruction. In this way, the verify. function only needs to ensure that all the participants to be signed have been specified by the instruction, while the framework is responsible for ensuring that the transaction has been signed by all the participants listed in the instruction.

## (2) Composite keys

The term "public key" in the above description actually refers to a composite key. A composite key is a tree whose leaves are regular cryptographic public keys with algorithm identifiers attached. A node in the tree specifies both the weight of each of its children and the weighting threshold it must reach. The validity of a signature set can be confirmed by travelling up the tree from the bottom, summing the weights of all keys with valid signatures in it and comparing them to a threshold value. By using weights and thresholds, a variety of cases can be encoded, including Boolean expressions using ANDs and ORs.

Composite keys can be used in a variety of scenarios. For



example, assets can be under the control of a composite key: one key belongs to a user and the other to a separate risk analysis system. When a transaction appears suspicious, for example if too much value is transferred in a short time window, the risk analysis system will refuse to sign the transaction. Another example involves encoding the cooperation structure into the key, allowing CFO to sign a large transaction on its own, but its subordinates needing to co-sign to complete it. Composite keys are also very useful for notaries.

Each participant in a distributed notary is represented by a leaf of the tree, and a specific threshold can be set so that in the event that some participants are offline or refuse to sign, the key can be used to sign the transaction.


A specific threshold can be set so that if some participants go offline or refuse to sign, the signature of the whole group remains valid. Although there are threshold signature schemes in the literature that can precisely produce composite keys and signatures, an explicit form with low space efficiency has been chosen in order to allow the use of different algorithms to mix keys. In this way, it is not necessary to require all participants in the group to upgrade simultaneously as the old algorithm is

phased out and the new algorithm is adopted.

### 3) Timestamps

A transaction timestamp specifies a window of time within which a transaction can be determined to have occurred. The reason that timestamps are represented as windows is that there are no exact points in time in a distributed system, only a large number of clocks with no co-occurrence. This is influenced not only by the laws of physics, but also by the nature of shared transactions - especially if the signing of a transaction requires multiple authorisations, the process of constructing a federated transaction can last for hours or days.

It is worth noting that the purpose of the transaction timestamp is to communicate to the contract code the position of the transaction on the timeline in order to satisfy the logical compulsion of the smart contract code. While the same timestamp may also be used for other purposes, such as regulatory reporting or event sequencing on the user interface, there is no requirement to use the timestamp in that way, and although it may not precisely match the time observed by its other participants, using the locally observed timestamp is sometimes a better option. Alternatively, if an exact point on the timeline is required and this



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point must be agreed upon by multiple participants, then the middle point of the time window can be agreed upon. Although this will not correspond precisely to an event (such as a keystroke or verbal agreement), this approach can still be useful.

The timestamp window can be open and used to communicate that a transaction occurred earlier or later than a specific time, but it does not matter how early or late. Timestamps are checked by a notary service. Since the participants in the notary service themselves do not have precisely synchronised clocks, it is also unpredictable whether a transaction submitted at the boundary of a given time window will be considered valid at the moment it is submitted. However, from the point of view of other observers, the notary's signature is decisive.

If a transaction has a notary's signature, it is assumed to have taken place within a given time frame. Note that the Java timeline used by TRX gs is expressed in UTC time and leap seconds are included in the last 1000 seconds of the day, so that each day contains exactly 86,400 seconds.

Special care needs to be taken to ensure that changes to the leap second counter in GPS are handled correctly so that they can be synchronised with Java time. When setting the time window for





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transactions, care must be taken to deal with the network propagation delays between the user and the notary service, and within the notary service for messaging.

#### 4) Attachments and contract u-symbols

Transactions can have a number of attachments, and attachments are identified by file hash. New attachments that have not previously appeared are saved and transmitted independently of the transaction data and are only available via standard parsing streams. The attachments are a series of zip files and cannot be referenced separately by the contract code. files in the zip package are folded together in a single logical file system and duplicate files are only parsed the first time they are mentioned. It is no coincidence that this is the mechanism used by the Java class path.

The smart contracts in TRX gs are defined using the JVM bytecode as specified by The Java Virtual Machine Specification SE 8 Edition. A contract is simply a class that implements the Contract interface, which in turn exposes a single function called verify. verify is passed a transaction and throws an exception if the transaction is deemed invalid; otherwise the function returns with no result. The set of verify functions used is a concatenation of the




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contracts specified by each state.

The Java specification is embedded in the TRX gs wallet specification, enabling developers to write code in many different languages, use well-developed toolchains, and reuse code already written in Java and other JVM-compatible languages. decimal calculations can use both portable floating-point algorithms and the provided bignum library, and so on. These libraries have been carefully designed by the commercial Java community over many years and it makes sense to base the functionality on this resource.

The contract bytecode can also define its own state which can be any object graph. As JVM classes are not a convenient form of collaboration from non-JVM platforms, the types that can be used are restricted and a standardised binary encoding scheme is provided.

State can be labelled with a small collection of standardised annotations for its properties. These will facilitate the control of how state is serialised into JSON and XML (using JSR367 and JSR222 respectively), the expression of static validation constraints (JSR349), and the control of how state is inserted into relational databases (JSR338).




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Attachments may also contain data files provided to the contract code. These files may be in the same zip package as the bytecode files, or they may be in another zip package that must be provided to the transaction being validated. Examples of such data files might include currency type definitions, time zone data and public holiday calendars. Any public information may be referenced in this way. Attachments are deliberately intended for data that will be used repeatedly by many participants on the ledger.

The data files are accessed by the contract code via APIs that are the same as those used to access the files on the class path. The platform imposes mandatory constraints on the type and size of data that can be included in attachments to avoid artificially placing inappropriate files (videos, PPTs, etc.) on the global ledger.

Note that it is the creator of the transaction who chooses the files to be attached. It is therefore typical for states to set limits on the data they are happy to accept. The attachment provides the data but does not validate it, so when there is a risk that someone could gain financially by providing malicious data, there must be a constraint that can prevent this from happening.




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This is rooted in the contractual constraints encoded within the state itself: a state cannot just specify a class that implements the Contract interface, but should also set constraints on the zip/jar file provided to it. This constraint in turn can be used to ensure that the contract checks the reliability of the data - either by directly checking the hash of the data, or by requiring that the data be signed by a trusted third party.

#### 5) Hard forks, specifications and dispute resolution

Different distributed ledger systems typically differ in their underlying political philosophy and choice of technology. The ethereum project initially promised "unstoppable applications" that would enable "code as law". After a major smart contract was hacked, the lack of a non-code specification of what the program was intended to do led to a debate about whether the event could be described as a hack or not. The disagreement eventually led to a split within the community.

Because the TRX gs contract is a simple zip file, it could easily contain a PDF or other formatted document describing the actual intent of the contract. There is no requirement to use this mechanism, nor is there a requirement that these documents have legal effect. Nevertheless, in financial use cases where




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disagreements occur, it is more important to include them in the legal sense of a contract than in the software implementation they contain.

It is technically possible to write a contract that is not scalable. If such a contract manages an asset that exists only on the books, such as a cryptocurrency, then this could provide an approximation of 'code as law'. We leave the discussion of the wisdom underlying this idea to political scientists and reddit.platform logs There is no direct equivalent to a "hard fork" of the blockchain in TRX gs, so the only way to abandon problematic or fraudulent transaction chains is to agree out-of-band on discarding a complete subgraph of transactions. Since there is not a global visibility, this agreement need not include

all participants in the network: only those who may have received and processed the relevant transactions need to be included. Another consequence of the lack of global visibility is that there is no single point at which to record exactly who has seen which transaction. Determining the set of entities that must agree on the abandonment of a subgraph means that the activity logs of the associated nodes are needed.




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TRX gs nodes record sufficient information in logs to ensure that such an association can be achieved. The platform defines a flow that is available to anyone to assist in this process.

TRX gs provides a tool that generates a 'survey request' and sends it to a seed node. The stream informs the node administrator that a decision has been requested and sufficient information is passed to the node to try to convince the administrator to participate (e.g. a signed court order). If the administrator accepts the request via the node browser, subsequent jumps in the transaction chain are returned. The tool crawls the network semi-automatically in this way, finding all participants who would be affected by the proposed rollback operation. The platform is not involved in determining what type of transaction rollback is justified, and only provides minimal support for implementing the rollback operation beyond locating the participants who must agree to it.

Once the participants involved have been identified, there are at least two strategies for modifying the ledger. One is to extend the transaction chain using transactions that simply amend the database to match the expected reality. In order for this approach to be possible, the smart contract must be written in




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such a way that it can be arbitrarily modified outside of normal business logic when the submitted signature reaches a sufficient threshold. This strategy is simple and makes the most sense when the state contains a small number of participants, none of whom have an incentive to leave harmful information on the ledger.

For asset states generated by theft or fraud, the participants included in the state will resist all attempts to fix it in the way described above, as they can reap the benefits of the real world in the time lag between the error in the ledger and the return to the actual state. A more sophisticated approach to this situation would require the use of a more complex method in which all participants, excluding the non-cooperative ones, agree to mark the relevant state as no longer being consumed or as having been spent. This is essentially a restricted form of database rollback.

### **3.8 Non-homogeneous digital asset (NFT) data structures**

Non-homogeneous digital assets (NFT) are a type of digital asset used in distributed bookkeeping networks where asset instances are unique and can be made more flexible to serve the blockchain network by optimising the NFT structure.



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TRX gs redesigned the data structure by adding custom data stores to accommodate possible data and extended content. Key processes such as consensus, witnessing and block out are also adjusted accordingly to match the new data structure. prop data in TRX gs is only recorded in full in the block data during generation and attribute changes, while only hash pointers are recorded during normal transactions and flows, ensuring that the size of the block data does not grow too quickly due to long term transactions.

Separation of asset and contract data: Homogeneous and non-homogeneous assets (NFT and smart contract data are stored separately on the chain; TRX gs's network will have a large number of ongoing transactions and the computational cost of parsing and flowing assets needs to be minimised, so separating assets from contracts enables separate parsing and execution of contracts and uploading of necessary results to the chain.

With the separation of asset and contract data storage, the owner of the asset has full access to the asset and the operation of the asset can only be completed by the owner's authority. The separation of asset and contract is a more secure design as it



avoids the possibility of destroying asset properties or invoking other assets by modifying the content of the contract, and it is easier to achieve cross-chain redemption of non-homogeneous assets (NFT) without considering the constraints of the contract.

## Chapter 4 TRX gspass-through economic model

### 4.1 The issuance and distribution of TRX gs

TRX gs is a value token circulating in the TRX gs ecosystem with a blend of DeFi, NFT and meta-universe value attributes.

TRX gs is also is a functional token used on the TRX gs platform. It is a fun, practical, virtual currency designed to be widely versatile for the circulation of all types of value assets.

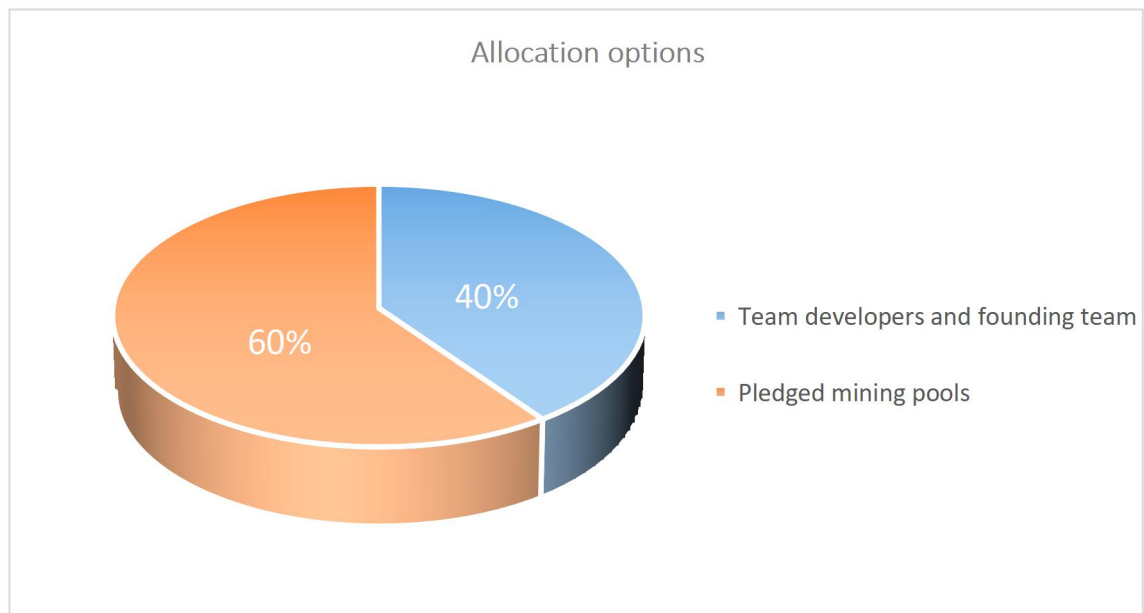
The TRX gs token also provides support for exchange, trading and auction of NFT items or props, and provides superior liquidity for the ecology through pledges and liquidity, enabling the incentive of pass-through of data and assets, creating a new high-value pass-through for players and investors worldwide.

Total number of TRX gs issued: 21,000 pieces

The TRX gs allocation scheme is as follows.

-40% team developers and founding team

-60% pledged to the mining pool



TRX gs will be the core medium in the TRX gs ecosystem.

-NFT+ meta-universe mining: expanding the ecological consensus.

-TRX gs token uses: fuel, metaverse value circulation, community autonomy tokens.

-TRX gs token deflation mechanisms: fuel destruction, fee destruction, etc.

## 4.2 Incentives and circulation of TRX gs

TRX gs can be obtained from official mission rewards, resource rewards, from the exchange of secondary assets, or through mining. TRX gs can be used to purchase props, acceleration services, companion services, etc., and can also be exchanged for other secondary assets. TRX gs can be incentivized in ways including, but not limited to.

-Value creation: including (A) contributions for the act of creating digital assets, i.e. developing games, making props. For a single digital asset (including games, apps and in-game/in-app props), the amount of incentive awarded is proportional to the value of the asset created by the participant and inversely proportional to the duration of the TRX gs platform and the total value of the system's assets, with a cap on the total amount of incentive; (B) contribution to the value of the digital asset created, i.e. the creation of assets up to a certain fee and asset circulation size to receive TRX gs. for a single digital asset (including games, apps, in-app props), the amount of incentive awarded is proportional to the total asset circulation of that asset created by the developer; and

-Platform contribution rewards: TRX gs will be awarded to



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users who contribute to the TRX gs community. initially, we award TRX gs based on the historical contribution of the developer community. Later on, the platform will use various forms of bounty tasks and free assets (e.g. free developer personas to incentivise developers to develop new features, upgrades, bug fixes, testing and other community actions to the platform. This will be allocated from the asset set-aside and platform share portions of the platform foundation.

-Asset circulation: acquired prop assets receive TRX gs. the incentive of this part is related to the gameplay and economic system and is determined by the developers and the laws of the market, the platform in principle does not make rules and quantity limits

-Behavioural incentives: a variety of valid behaviours on the TRX gs platform, in the community and within the platform will be redeemed for TRX gs according to a certain degree of contribution; for example, users registering for an account on the platform and participating in various interactions in the community to obtain TRX gs. The platform will analyse the validity of the user's visit, the completeness of the information and the reasonableness of the user's behaviour to confirm the


validity of the user's behaviour, and to provide incentives for TRX gs. The number of incentives is proportional to the content of the interaction (e.g. posts, likes, replies, etc. and inversely proportional to the total number of users and the duration of the platform, with a cap on the total number of incentives.

-TRX gs consensus work contribution incentive.

TRX gs can be exchanged with all digital currencies at TRX gsSWAP, and TRX gs can be settled with global fiat currencies.

TRX gs is used as a medium for all transactions such as payments, transfers, fiat currency transactions, coin charging, coin withdrawals, upvoting, STO gateway, coin matching, collateral, public interest, shopping mall, etc.

In addition to the circulation within the TRX gs ecosystem, it will also be circulated within third party applications developed on the TRX public chain and will exist as a unique value pass. This will accelerate the circulation rate of TRX gs, add more circulation value attributes to the scarce TRX gs and drive up the overall value and price. For players, TRX gs can be used to make purchases. It can also be used as a base means for cross-border payments, thus bringing more benefits to themselves. When TRX gs is connected to mainstream global platforms, players can



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enjoy the wider global convenience of entertainment and leisure that TRX gs brings.

Scenarios for the use of TRX gs include, but are not limited to.

- Redemption of development resources (e.g. character images, etc. from third party developers.

- redeeming value-added services such as developing functional components from the platform

- Posting bounty tasks in the community and initiating and participating in votes on community matters.


In the future, TRX gs will adapt to more diverse business needs by continuously refining its application business model exploration to meet data sharing along the business chain, which means that TRX gs has enough common and standardised ways of recording data to represent a wide range of structured and unstructured information and to meet the cross-chain requirements needed as the business scope expands. And this provides an additional value flow basis for the versatility of TRX gs.

### 4.3 POA mining mechanism

POA (Proof of Assets), or Proof of Assets. With the Proof of Assets (POA) protocol, TRX gs provides a use case for tokenising and documenting physical assets. block data in POA consensus differs somewhat from POW, mainly in the header structure.

POA has the advantage that, similar to POS, it does not require high energy costs or expensive dedicated hardware, but because it does not require "presentation of interests", "spending" is more incentive than "hoarding" is more motivating (which means it should lead to more economic activity).

TRX gs's POA-based network, transactions and blocks are authenticated by a number of accredited accounts called "Validators". The Validator runs software that supports the Validator in placing transactions in blocks. The process is automatic and does not require the validator to constantly monitor the computer, but requires the computer (authority node) to be maintained uncompromised. trx gs uses POA, where each individual has the right to become a validator, so there is an incentive to maintain the validator's position once acquired. By attaching a reputation to the identity, the verifier can be



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encouraged to maintain the transaction process. This is because the verifier does not want to give themselves a negative reputation, which could cost them their hard-earned verifier status.

In the TRX gsPOA mining mechanism, there are three basic requirements to be a POA verifier.

- The verifier must have formally verified their identity on the network and be able to find it in the public domain.


- The validator must first have the right to confirm the proceeds and evaluate the block before it can be empowered

- The checks and procedures for establishing authority should be consistent.

Thus, under the POA algorithm, it is possible to become a verifier by obtaining verifier rights, so those who succeed in becoming verifiers want to hold on to their hard-earned seats. To avoid damaging the reputation of the validator, there is an incentive for the validator to maintain a normal trading process. As a result, most participants value their hard-won status as validators.

Miners under the TRX gs POA mechanism do not earn





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rewards by mining, as POW miners do. Recognised and influential miners can participate in validating transactions and blocks. In other words, miners who participate in validation can validate and be rewarded for all operations of the transaction. This significantly reduces the cost of maintaining the network. Because the TRX gsPOA network does not rely on electricity consumption to earn rewards, TRX gs miners using PoA are more energy efficient than those using PoW and PoS, and have the Y advantage of being more efficient and highly rewarding.

#### **4.4 Project development plans**


In the fourth quarter of 2021, the initial goal of TRX gs is to recruit blockchain enthusiasts and investors worldwide and establish independent community nodes in 56 countries and regions.

First quarter of 2022, the decentralized exchange TRX gsSWAP goes online, aiming to create the largest DEX in the NFT+ meta-universe.

the launch of TRX gs Virtual Life in Q2 2022, ushering in the era of NFT mining.

Third quarter of 2022, TRX gs completes its 2.0 upgrade,





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opening up the community chat and friendship function to 10,000 people online at the same time.

In the fourth quarter of 2022, TRX gs achieves a stable online population of 50,000, a DEX trading volume of US\$500 million and 300,000 community members.

In the first quarter of 2023, TRX gs aims to have a stable population of 100,000 and a DEX transaction volume of US\$1 billion. Development of a super public chain for the meta-universe application scenario, developed and operated by the technical team of the IABNI Foundation in Singapore as a wholly-owned service (NFT + meta-universe application scenario + DeFi, with TRX gs leading the mining of tokens for the super public chain, which will go live on the top three global blockchain exchanges for trading circulation .

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# Chapter 5 Global Teams and Community

## Building

### 5.1 The Global Team

TRX gs is developed and solely issued by the technology development team of TRX gs Foundation in Singapore, and the core members are composed of the first batch of teams developing smart contracts in Ether and BSC. At the same time, the project brings together a large number of core developers and top talents in blockchain, big data, cloud computing, blockchain and other technical fields, with a globally competitive and comprehensive R&D strength.



Joyce - an internationally renowned data engineer who has held key positions in several world-renowned Internet big data research centres, responsible for the research and development of basic Internet technology applications, participated in many internationally renowned projects, and is a pioneer in the field of

blockchain technology.



Algernon - PhD in Computer Science and Big Data, architect, database expert, exchange building technology expert, long-time database application, data warehouse, big data and blockchain development in the trading industry, with rich experience in blockchain project development.



Michell - a world-renowned blockchain application expert and a global leader in the commercial application of blockchain technology. A former member of the EU Business Council, PhD in sociology from Columbia University, a researcher at the Center for Financial Studies, he is a global authority on the application of smart and entertainment technology.



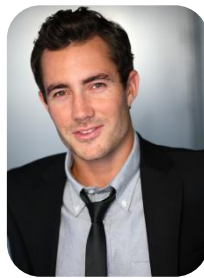
Paddy - an influential authority on the development of blockchain underpinnings technology, has a career spanning both academia and the corporate world, and is a researcher, engineer and leader. He has held a number of engineering management positions at Google and Amazon.



Bradley - Bradley's research focuses on big data parallel computing and distributed algorithm optimization, and has extensive experience in blockchain, cryptography, and data mining. He will provide in-depth algorithmic support.



Wesley is well versed in the principles and implementation of mainstream blockchain technologies such as Bitcoin, Ether, HyperLedger, etc. He has a deep understanding and rich practice in blockchain consensus mechanism, smart contracts, cross-chain technology, sidechain technology, privacy protection, etc.



Minkevich - Technical Advisor, a world-renowned computer technology application development expert, has worked for Apple, SGI, Microsoft and Google, and has over 15 years of global IT development and operation experience.



Colbert - Legal Director, graduated from Harvard University Law Department, has more than 10 years of legal research experience, good at for business structure, facilitate the development of financial regulations, for blockchain alliance


financial control has a basic legal direction control, can well carry out project development and promotion, and friendly organization and control of financial and legal thinking.



Donovan Mitchell - Global Marketing Consultant. With decades of experience, he provides ongoing guidance on marketing aspects of projects.

## 5.2 Community building

There is a strong consensus in the TRX gs community to build a DAO self-governed community that is 100% community owned and managed. Once the project is live, the community will vote to develop their own decentralised applications and DAPPs. the global community building of TRX gsDAO follows a highly decentralised, through a combination of on-chain and off-chain models. once all the programs of TRX gsDAO are set up successfully, it can start operating according to the original rules. In the course of its operation, it can also maintain and upgrade



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itself according to the actual situation. Through a continuous self-improvement mechanism, it not only eliminates trust issues, but also achieves an unprecedented level of collective coordination, thus forming the technical basis of TRX gsDAO.

-Smart contracts allow for the technical implementation of the rules of TRX gsDAO.

-The pass-through economic model gives a realistic incentive basis for the distribution of the benefits of TRX gsDAO.

-The blockchain itself is connecting individuals or organisations around the world, allowing the expansion of TRX gsDAO to break through geographical limitations.

The TRX gs token is used as proof of value and incentive, and then a smart contract is used to determine the collaboration and benefit distribution model of the members. There is no clear division of identity between members, such as investors, developers, collaborators, operators, consumers, etc., all become part of the community by holding TRX gs tokens. The members themselves can continuously seek the shortest path through the continuous optimisation of the contract structure to maintain efficient synergy and better development direction.




# Chapter 6 TRX gsEco-Development Foundation

## 6.1 Foundation structure

To achieve the rapid development of the TRX gs project, we will use the TRX gs Ecological Development Foundation as the project management body, dedicated to the development and construction of the TRX gs project and governance transparency advocacy and promotion work, to promote the safe and harmonious development of the open source ecological community.

The TRX gs team has commissioned a credible third-party organisation to assist the team in setting up the operations centre entity and maintain the day-to-day operations and reporting of the entity structure on its behalf. Through the Foundation, appropriate community engagement members are selected to sit on the Foundation's functional committees and participate in practical management and decision-making. The Foundation will be set up with reference to the operation of a traditional entity and will have various functional committees, including a strategic decision making committee, a technical review committee, a



remuneration and nomination committee and a public relations committee.

The Strategic Committee is the highest decision-making body of the Foundation. Its main objectives are to deliberate and address key decisions facing the community as it develops, including but not limited to.

- Revision of the Foundation's governance structure;
- The formation and rotation of the Board;
- The appointment and rotation of the Foundation's Secretary General;
- Appointment and dismissal of the Executive Director and Heads of Functional Committees
- Review and amendment of the Foundation's statutes;
- Decision on the development strategy of TRX gs;
- Changes and upgrades to TRX gs's core technologies;
- Emergency decisions and crisis management agenda.


The term of office of the members of the Strategic Decisions Committee 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 mechanism of the next generation of TRX gs, and then select the core members of the decision making committee. The selected core members will make important and urgent decisions on behalf of TRX gs, and will be subject to credit checks and public remuneration during their term of office. These important matters will be voted on by the Decision Making Committee by secret ballot, with each member of the Decision Making Committee having one vote and the Chairman 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 an ad hoc meeting of the Decision-Making Committee within five working days when the following circumstances arise:

-When the Secretary General of the Foundation deems it necessary;

if more than three-fourths of the members of the decision-making committee jointly propose it;

The members of the decision-making committee shall attend




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the meeting in person. If they are unable to attend, they may appoint in writing another member of the Committee to represent them. If no proxy is appointed, he/she shall be deemed to have waived his/her right to vote at the meeting.

The Secretary General is elected by the Strategic Decisions Committee and is responsible for the general management of the Foundation, the coordination of the work of the committees and the chairing of the meetings of the Decisions Committee. The Secretary General is the highest level of responsibility for the administrative affairs of TRX gs, providing unified direction and coordination of the Foundation's day-to-day operations, technology development, community maintenance and public relations, and linking the business units to the functional committees at the governance structure level. The Secretary General reports regularly to the Decision Making Committee.

Technical Audit Committee: Composed of core developers from the TRX gs development team, the committee is responsible for making decisions on the direction of blockchain technology development, underlying technology development, open port development and review, and technology patent development and review. In addition, members of the Technical




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Review Committee regularly keep abreast of community and industry developments and hotspots, communicate with participants in the community, and hold technical exchange sessions from time to time. Examples include corporate customers, suppliers, regulatory bodies and third party service providers.

The Remuneration and Nomination Committee is responsible for deciding on the selection and appointment of key management personnel for the Foundation. The committee sets the rules of procedure, assesses the competence of managers and authorises their appointment. The Committee also sets the remuneration system and provides incentives for those who make a significant contribution to the Foundation. The Remuneration and Nomination Committee conducts regular performance evaluations of all members of the Foundation. It proposes adjustments to the human resources structure and proposes different incentives to attract and retain talented specialists.

Public Relations Committee: The objective is to serve the community and is responsible for the promotion of TRX gs technology, the establishment and maintenance of TRX gs and business alliances, the collaboration and exchange of resources between TRX gs participating alliance parties, the commercial



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promotion and publicity of TRX gs, as well as community crisis communication and social responsibility. The committee is responsible for regular press conferences, external announcements on important matters and answers to queries, etc. In the event of an incident affecting the Foundation's reputation, the Public Relations Committee will act as a unified communication channel and issue authorised responses.

The Supervisory and Management Committee is a highly independent and autonomous body set up within the Foundation to provide independent oversight and risk management of the Foundation's overall operations. The Supervisory and Management Committee provides day-to-day guidance to the Foundation's legal and compliance departments. At the same time, the Foundation has a transparent and open whistleblowing mechanism, with the Supervisory and Management Committee receiving internal and external reports directly and taking appropriate action to investigate and improve the handling of matters to ensure that the Foundation as a whole is operating at a sound level of compliance and legality and moving forward within acceptable risk levels. The Supervisory and Management Committee reports directly to the Strategic Decisions Committee and does not have any conflict or overlap with other functions of



the Foundation.


Other functions: The Foundation has established day-to-day operational departments, such as human resources, administration, finance, marketing, research and development (or laboratory) units, taking into account the corporate structure. The functions are set up to maintain the proper operation of TRX gs and to deal directly with the relevant parties in the business community.

## 6.2 The Foundation's governance system

The Foundation's governance structure is designed with the objectives of sustainability of project development, effectiveness of strategy development, management effectiveness, risk management and efficient operation of the project in mind. The Foundation proposes the following principles for its governance structure.

- 1) Integration of centralised governance and distributed architecture

Although there have been arguments advocating that blockchain is a system of autonomous communities with "decentralised" or "distributed" as the core, we believe that



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complete decentralisation may bring absolute "fairness" and may also bring more "fairness". "or more "inefficiency". Therefore, the Foundation will still incorporate certain core ideas of centralised governance in its management structure, including the supreme decision-making authority of the strategic decision-making committee and the centralised power of deliberation on major matters, in order to improve the efficiency of the overall community operation.

## 2) Coexistence of functional committees and functional units

Under the day-to-day affairs of the Foundation, resident functional units, such as R&D, Market Development, Operations, Finance and Human Resources, will be set up to deal with regular matters. At the same time, specialist functional committees will be set up to make decisions on important functional matters of the Foundation. Unlike functional units, functional committees exist in a virtual structure and can have members from all over the world and are not required to work full time. However, they must meet the requirements for committee expertise and be able to commit to attend and contribute to committee deliberations as and when they are required. Functional committees will also have a system of regular meetings to ensure that major decision matters are





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effectively progressed.

### 3) Risk-based governance principles

Risk management will be set as the first important element in the study to determine the strategic development and decision-making process of the Foundation and the project. As a significant and transformative computer technology, the development of blockchain is still in its infancy and therefore it is particularly important to grasp its direction. The principle of risk management ensures that the Foundation takes into account risk factors, risk issues and the likelihood and impact of their occurrence when making important decisions, and that it develops strategies to deal with them. This ensures that the development and iteration of the TRX gs project is on the right path.

### 4) Technology and business go hand in hand

The TRX gs project aims to promote the change and upgrade of blockchain technology by closely integrating technology and business. The foundation is set up with the same aim in mind. Even though the Foundation is a non-profit organisation, it hopes to gain maximum recognition from the commercial world and to generate revenue from commercial



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applications, which will be fed back to the Foundation and the community to further develop and upgrade the Foundation and the TRX gs project.

#### 5) Transparency and oversight

In line with the governance experience of the traditional business world, the Foundation also proposes to establish a dedicated monitoring and reporting channel. A designated member of the Strategic Decision Making Committee will act as a window where community participants are welcome to participate in the management and oversight of operations, and will be able to report 'findings' quickly and confidentially. These include, but are not limited to, new breakthroughs or proposals that have a significant impact on the Foundation or blockchain technology, issues with community operations, crisis information, reports of fraud or malpractice, etc.

## Chapter 7 Risk Warning and Disclaimer


Nothing in this White Paper constitutes legal, financial, commercial or tax advice and you should consult your own legal, financial, commercial or other professional advisers before engaging in any activity in connection with it. The Foundation's



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