

G A M E W O R L D W H I T E P A P E R



GAME WORLD WHITE PAPER

NEW DIGITAL GAME ENTERTAINMENT
AGGREGATION PLATFORM



DIGITAL GAME ENTERTAINMENT AGGREGATION PLATFORM



CONTECTS

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Preface

The concept of the metauniverse was first proposed by Neal Stephenson in 1992. In his science fiction avalanche, he created an online world in which people use digital avatars to explore and roam and escape from the real world. Decades later, technology giants have begun to build a meta universe full of a sense of the future.

Metaverse is a digital reality that integrates the elements of social media, online games, augmented reality (AR), virtual reality (VR) and cryptocurrency. Users can conduct virtual interaction. According to Zuckerberg's description, in the future, you can do almost anything you can imagine in the metauniverse, gather with friends and family, work, study, entertainment, shopping and creation, as well as a new experience completely beyond the boundaries of the current computer or mobile phone.

Metauniverse is a concept of 3D digital world, which is composed of virtual space. Individuals can explore and roam through the virtual avatar they create. People can play games and shop in the metauniverse, hang out with friends in a virtual coffee shop, collaborate with colleagues in a virtual office, and so on. Some video games and office social tools have adopted certain meta cosmic elements in their ecosystems.

At the same time, with the spread of the global epidemic, the development process of the meta universe has been accelerated. More and more people are starting to work remotely. Therefore, the public's diversified demand for ways to contact and interact with each other is also increasing. The virtual 3D space used by colleagues to participate in meetings, follow up work progress and cooperate with each other is becoming more and more popular. Microsoft mesh, which appeared in November 2021, is a good example. Users use virtual avatars to communicate and collaborate in this immersive space, making remote team meetings more interactive and fun.



Some online games are also open to the meta universe. In the face of so many game entertainment platforms, the new digital game entertainment ecosystem game world takes the lead. Combined with blockchain technology, token economic model, and the latest virtual digital human technology, create a new digital game entertainment ecosystem that is decentralized, distributed, trusted, and rights sharing, actively promote the grand ecosystem of meta universe game entertainment, and redefine and distribute wealth for value creators!





Industry background

1.1 Current situation of game and entertainment market

As one of the entertainment activities of human beings since ancient times, the concept of games has been developing with the development of the times. Video games are also one of them. Video game "space war" released since 1962 At the beginning, electronic games began to develop from simple to complex. From types to playing methods, electronic games have been greatly enriched. Along with them are the upgrading of game consoles and the influx of capital.



Since Games officially entered people's lives in the 1970s, it took more than 35 years for the global game market to grow to a market size of US \$35 billion in 2007. It is expected that this year the market will create a market size of US \$137.9 billion. In just 11 years, it has created an amazing US \$100 billion in market added value, officially announcing that the game market has entered a stage of accelerated growth. According to the report, from 2017 to 2021, the global game market will grow at a compound growth rate of 10.3% and reach US \$180.1 billion by 2021.



The total revenue of the mobile game market will reach US \$106.4 billion in 2021. Benefiting from the development of competitive and immersive mobile games, more and more smart phone users and the gradual improvement of mobile infrastructure and hardware, smart phone games will grow to a market size of 88.5 billion US dollars in 2021 with a compound annual growth rate of 19.3% (2017-2021).

Tencent data shows that its representative work "the glory of the king" has 70million daily users. At present, the registered users have exceeded 200million, and the penetration rate has reached 22.3%, which means that there is one registered user of "the glory of the king" among every seven Chinese, more than A-share investors. The average daily use time of users in this game is as long as 97.7 minutes! The game has earned Tencent more than 30billion yuan of excess profits in less than three years. In february2021, "glory of the king" achieved abnormal results of more than 3billion yuan per month, and the most popular skin sold a record 150million yuan a day. With amazing data, Tencent once ranked fifth in the world in terms of market value.

1.2 Game platform profit channel

1.2.1 In game advertising

Game built-in advertising has been a common practice in the industry. When most users are unwilling to pay for internal purchase, cashing in through built-in advertising is a shortcut to increase revenue. Many independent games lack the attraction to big r due to the game style and type. Therefore, most of them will choose the way of advertising + internal purchase. Generally, the ECPM for shooting and Parkour games (revenue per thousand displays) is generally \$10~20, the ECPM for consumer goods, consumer goods and consumer goods is \$20~30, and the ECPM for gambling games can reach \$50~80.



For example, for a game with 100000 daily live monthly users, assuming that each user sees an advertisement once a day and ECPM (revenue per thousand displays) is \$10, the daily revenue will be \$1000. If ads are set as incentive videos, many users will watch ads more than once a day. Encouraging the realization of video advertising is almost a virtuous circle: watching video players get props, which helps to improve the retention of players; Improving retention means watching more advertisements and the possibility of internal purchase.

1.2.2 accurate advertising

Since around 2000, with the rise of the domestic Internet, marketing advertising has gradually evolved from the traditional era to the Internet era. The advertising search and display mode has undergone in-depth changes from the content and creative level to the technical level. In the big data application scenario, the precise delivery of advertising has a more urgent need for advertisers, service platforms and potential users to improve efficiency and commercial benefits. The premise of accurate delivery is to classify the tag attributes of users. The most common classification method is to screen and deliver them through IP (such as university users) or the integration of browsing and search behaviors.

For example, before a game player opens our mobile game, the system will judge the user attribute within a few milliseconds according to the user's browsing data. After the judgment, he will go to the system he has built, pull the material corresponding to his attribute, and carry out accurate advertising for him. The effect of such accurate advertising is obvious after the system screening, so the charge for advertisers will be greatly increased to a certain extent.

1.2.3 sale of game props



At present, most game platforms have their own gold coin system, which will give players a certain amount of gold coins during publicity and login. During the game experience, we can see that there is "pumping" in every game, and most of the game coins given every day are lost. If you want to continue the game experience, you can only come back tomorrow or recharge directly. However, most people will choose to come back tomorrow in the early stage. After obtaining a high sense of experience in the game, they will recharge directly in the game for entertainment.

As a gamer who wants to find his "position" in the game as soon as possible, he will also buy relevant props to improve his level according to the platform game, or improve the relevant attributes of character equipment. Many players would rather spend tens or hundreds of dollars to find a sense of belonging in the game. Of course, the desire of players will also change with the strength after each purchase of props and continue to repeat consumption, which is also an important source of profit for the game platform.

1.3 Gamefi Market

Gamefi has developed so far. It can be said that while it has developed in a few years, there are different opinions from the outside world. Many people are predicting the track. Today, let's take a look at whether the current gamefi will be as expected!

In 2017, simple collection and transaction games appeared in the public eye, but this kind of chain game can only be called a common version. At that time, as the technology and game form were the initial works, most game operation methods could not be realized by pure chain game, and blockchain technology was not well used to enable games. Since March this year, gamefi has entered a period of explosive growth. By September, gamefi has grown into a block



Independent segments of the chain industry. After several years of evolution and evolution, many chain game development teams have mastered how to make the perfect combination of blockchain and games. At this stage, the development of gamefi is in the limelight. Now, large and small chain games are constantly online, and there are more and more choices for participants.



Now, many blockchain derivatives are best developed in games. Therefore, more creators combine them more closely. Relatively scarce NFT props in the game; For the absolute fairness of the game, Dao autonomous organizations continue to take shape; Enhance the combination of entertainment and the virtual world of meta universe, breaking the boundary between virtual and reality; The most important thing is the continuous upgrading of the public chain. Some game makers have built their own side chains to protect the smoothness of the game. At this stage, gamefi has continuously upgraded the fineness of the game screen and the sense of entertainment and leisure experience, and is really making money while playing.

According to blockchainamer According to biz statistics, up to now, the total investment in the blockchain game field has exceeded US \$1billion, and the total investment in 2020 was US \$72million, an increase of about 39% year-on-year. From the perspective of invested companies, dapper Labs' financing amount reached 357million US dollars, far exceeding that of other companies.



The well-known financing cases include: according to the information obtained by the media from two insiders, sky Mavis, the developer of NFT game axie infinity, is conducting a round B financing of about US \$150million, with a valuation of nearly US \$3billion, which will be led by a16z and invested by paradise. Demole, a blockchain game start-up, completed a seed round financing of US \$650000, with investors including Dao maker, LD capital and metrix capital.

Previously, it was reported that immutable x completed a round B financing of US \$60million on September 14. The game investment platform bitkraft ventures and venture capital company King River capital jointly led the investment, and Alameda research and vaynerfund participated in the investment. The funds raised will be used to expand its global engineering and sales departments, promote industrial partnership and develop the network's local NFT game projects.

Knight war, a "play to ear" game on the money security smart chain (BSC), completed a round of financing of \$2million. The investors include momentum 6, VBC ventures, Andromeda research, etc.

1.4 Diversified game entertainment ecology

At present, the application of metauniverse in blockchain generally appears in the form of games, such as chain games and NFT. We think this is just a practice of changing concepts. In fact, metauniverse is all inclusive. Metauniverse should not be a game or an application, but a combination of VR, AI, blockchain, big data, 5g communication, wearable devices and other technologies. The formation of metauniverse must also include multiple elements: identity, friends Immersion, low latency, diversity, anytime, anywhere, economic system and civilization. Simply put, the metauniverse



It should be a new digital world, all of which will gradually blur the boundary between reality and virtual world. You live in both real and virtual worlds, and everything you create in the virtual world can also be enjoyed in the real world. Isn't it amazing? Of course, the most critical technologies among these technologies are AI, VR, wearabledevice and blockchain.



1.4.1 AI

AI is the abbreviation of artificialintelligence. How can we interact with people or objects in the virtual world or must be controlled through the AI auxiliary system? The more advanced AI is, the closer it is to the experience of the real world. It can not only allow users to experience the interaction with the real world, but also allow users to build their own scenes and logic in the virtual world, which is not far from us. Using the simplest multi-level abstract learning model can deepen our understanding of AI.

1.4.2 VR

Vr:vr is the abbreviation of virtualreality. VR can connect the digital world and the physical world, feel the digital world through human senses, and even through brain computer interface in the future



Or chip implantation. It is gratifying that VR has been applied to many fields, and brain ComputerInterface (BCI) is also being developed methodically under the operation of many international companies. I believe we will soon see the emergence of brain computer interface.

1.4.3 AIWearabledevice

Wearable devices include glasses, gloves, other sensing kits, etc., which are even products we can experience on Playstation and other platforms. Because wearable devices are not rare, but very common, which will greatly reduce the birth time of the meta universe.

1.4.4 BlockChain

Blockchain technology is the most important link. Without blockchain, in fact, the combination of AI, VR and wearabledevice can only be regarded as a game or application, because the value created in the application cannot be reflected in the physical world. However, with the emergence of blockchain, all these will become different. Blockchain can map the results of your work in the virtual world into the blockchain system, Thus, your workload can be proved at any time and anywhere. As long as everyone recognizes this value, the value created in all virtual world applications can be realized in the physical world.

Therefore, GW ecology is not only a blockchain aggregation ecology, but also a complete game entertainment digital traffic ecological platform. Traffic is the basic and core resource of the game and entertainment industry, and the golden key to open the door of meta universe wealth. In the digital age of blockchain - traffic is wealth, traffic is chips, traffic is status, and traffic is the right to speak!



GAME WORLD

2.1 GAME WORLD Introduce

Relying on the decentralization of blockchain, a professional digital game entertainment aggregation platform game world (token GWT) is built, which is in line with the current gamefi development trend. From a broader perspective, game world is not only a highly aggregated decentralized game financial flow ecological platform, but also a decentralized community autonomous behavior. It is a community where various cultural concepts and phenomenal application development technologies of this era gather. It establishes order through the trendy value Internet system, and the consensus group endows the value of this ecosystem (GW Ecology). We have reason to believe that a decentralized financial game gamefi traffic ecological platform will be the future of the world, and each of us, as an important node in the future decentralized system and as a social cornerstone, will change the direction of the tide of the times.



Supported by the theories and concepts of defi, gamefi, NFT and meta universe, GW ecology issues the platform's native token game world token (GWT) based on the money security smart chain and is compatible with the existing Ethereum main network. GWT non centralized service



Community autonomy. GWT has built a one-stop digital game entertainment aggregation platform GW ecology on the basis of BSC technology. The game mining method of "making money while playing, simple and interesting, low-carbon and green" is adopted. The model includes the concept of open economy, creating an open, fair, traceable, distributed, transparent and reliable new digital game entertainment aggregation platform.

Game world is the main embodiment of metauniverse, NFT and gamefi ecology. Game world endows tokens in the ecology with real circulation value and opens up the transaction channel between users and the platform. Supported by the BSC, the GW digital aggregation platform has the characteristics of decentralization, transparency and token incentive. In addition, GW ecology has quickly gathered a large number of international top blockchain talents, aiming to take the digital + game industry as an opportunity to drive industry change and build the world's top blockchain game infrastructure and NFT, metauniverse ecological application system. GW ecology integrates third-party resources through blockchain network and token mechanism, integrates online virtual environment and physical environment, creates a borderless entertainment world, and is committed to creating an unprecedented immersive entertainment experience aggregation platform for global users.

In the future, on the basis of metauniverse games, GW digital aggregation platform will continue to expand its diversified ecology, including storage cloud platform, game distribution platform, game prop trading platform, NFT prop asset exchange, advertising platform, metauniverse mining and incubator, and provide complete game solutions for players, miners, R & D, channel providers, etc.

vision

The Internet Centered game entertainment platform threatens everyone and every hard-earned value all the time, in order to make everyone get wealth and income; GW ecology's vision is to create an adaptive blockchain through blockchain Technology



It is a digital aggregation platform for many games and entertainment, connecting the head chain project parties, game players and developers, so that all parties involved in the game and entertainment ecology can share the maximum market dividends, and is committed to building the first traffic platform for the global game and entertainment ecology!

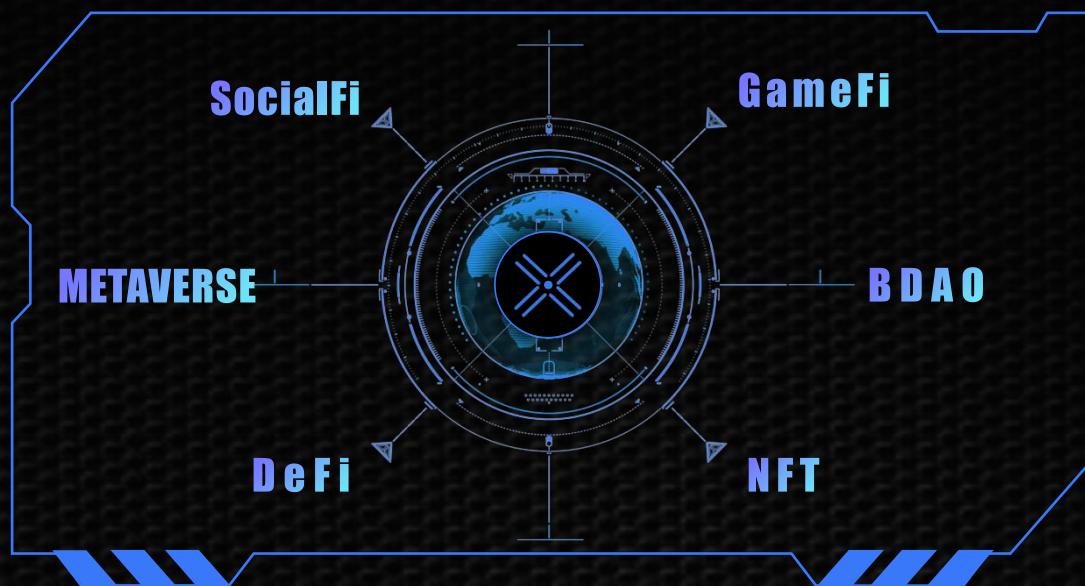
mission

Establish a decentralized open blockchain protocol to ensure the transparency of consensus algorithms and the clarity of contracts, so as to highlight collective wisdom, promote meaningful projects and enrich the global financial ecosystem through advanced democratic decision-making processes.

2.2 Economic model

GW ecology is a professional digital game entertainment aggregation platform. Rooted in traditional finance and its long-standing trust mechanism, it came into being in the hot wave of gamefi and is committed to building a new generation of global institutional game financial infrastructure to provide complete decentralized financial infrastructure for enterprises and individuals. Dao based community governance, based on distributed ledger and blockchain technology, will create a cross chain financial game service ecosystem integrating decentralized gamefi+dao+nft+ cross chain technology facilities. Give full play to the revolutionary potential of gamefi for financial inclusiveness and jointly and continuously promote the development and application of inclusive financial infrastructure.

The core underlying technology of GW ecosystem is structured with a hybrid chain to build a digital dual ecosystem of "public chain + private chain", that is, to realize the fairness, openness and transparency of the system through the openness, transparency and decentralization of the public chain (Solana) and solve the credibility problem; At the same time, the private chain can make its system operation more efficient and stable, solve the problems of transaction efficiency and experience, combine the two, break through the bottleneck of industry development, so as to provide a strong technical guarantee for GW ecology, and provide a strong support for the rapid development and full outbreak of GW ecology. Realize value interconnection and achieve real mutual benefit and win-win.



GWT token breaks the barrier provided by centralized institutional ore pools. Users can easily obtain transparent, reliable and easy to circulate earning rights of computing power through computing power, The circulation is 50million pieces.

- contracts for technologies residing on the blockchain.
- comply with all technical characteristics of blockchain.

2.3 GW DAO

GW ecological distributed autonomous organization (GW Dao for short) is initiated by early blockchain preachers, many blockchain enthusiasts and other members. It follows in the footsteps of Mr. Nakamoto, practices the spirit of Mr. Nakamoto, and realizes the dream of Mr. Nakamoto and many blockchain enthusiasts to use science and technology to benefit mankind. Through the consensus of values, GW Dao will gather a group of people who contribute their own values to achieve common goals, stand on the shoulders of their predecessors and contribute to the value Internet.



GW Dao brings a group of people from different regions and industries together to strive for common goals by realizing the concept of value interconnection. We believe that blockchain technology will change the way of human life. In the future, social connectivity will evolve into value interconnection based on the existing information interconnection. In the trust system built by blockchain, all kinds of people or things will transmit their self-worth through the blockchain network, forming a rich value Internet Ecology, which will ultimately greatly improve social production efficiency.



We respect everyone who puts forward pertinent opinions and good suggestions for the community, and give appropriate rewards. We believe that every contributor is the most important wealth of the community, and every contributor should receive their own due return. We will fairly and openly make the achievements and gains of GW Dao in the development process benefit everyone who contributes to the development of GW Dao, and bring wealth, happiness and glory to every contributor. It is hoped that every enthusiast who is interested in the development of blockchain will join us, work together for the development of technology and universal benefits, and share the joy brought by the success of GW Dao. We will comply with the general trend of technology development, the general trend of changes in the external environment, and the general trend of historical development to ensure that the development of the blockchain industry embarks on a virtuous cycle.



Technical framework

3.1 Resource consumption of workload proof

As stated in the bitcoin white paper, the main problem faced by the e-cash system is dual expenditure. Although proof of work (POW) is a powerful tool to democratize the concept of e-cash, it also leads to the development of specific hardware and a lot of energy waste. As a result, mining operations are mostly concentrated in areas with low electricity costs. As of june2018, it is estimated that about 74% of the hash rate will be operated by entities. Most of the other dedicated hardware (ASIC) has been developed in some countries, making the currency vulnerable to local regulators.

3.1.1 certificate of interest

Currently, there are no POW substitutes showing the same properties. A competitor is considered a proof of interest (POS). Since peercoin put forward the "coin age" method in 2012, many projects have studied this problem. Another well-known token, NXT, uses the new block data as the seed to determine the next choice [nxt19]. Ethereum, the most famous POS system R & D project, has planned to transition to POS since 2014. In the past few years, new projects have introduced the concept of "proof of entrusted interest" (dpos). In this concept, each node delegates its voting rights to a small subset of nodes.

A major difference between the POS protocol and the pow protocol is that the former pays more attention to security than activity, so that the protocol can be terminated immediately, while the latter ensures activity and exponential security. However, POW does not provide effective activity: attackers with sufficient resources can decide to produce empty blocks, which effectively makes the system useless. At the time of writing, compared with the block award, the missing income is very small and can be easily compensated by external actors.



However, regardless of any security aspect, any attack may lead to currency depreciation. In many cases, this is a powerful incentive to prevent attacks. The blockchain community fully supports this. Since day 1, game theory has become a necessary part of consensus agreement analysis.

3.1.2 scalability issues

In addition to the inherent waste of resources in POW system, blockchain scalability is an active research topic. Even in the bitcoin community, there are many factions: for example, bitcoin adheres to the 1MB block limit (although the isolation witness helps to expand the chain capacity), but bitcoin cash expands the block capacity to 32MB. The argument supporting small capacity blocks is that only all nodes (nodes that fully verify the blockchain) are secure, while other nodes rely on other parts of the system (such as miners). Therefore, the PC should be able to run a bitcoin node.

If each block is 32 MB, 1 block /10 minutes (144 blocks per day), the admissible data volume is 4.6GB per day, 138 GB per month and 1659 GB per year. Transactions must be confirmed by most nodes in the system before they can be accepted as an inherent requirement of decentralized networks. In addition, the more nodes participating in the network, the higher the decentralization level of the network, provided that the nodes are not controlled by the collusive entities. Therefore, the system with more users will exert greater pressure on each node, resulting in higher hardware and bandwidth requirements. On the other hand, when the number of nodes increases, each transaction needs to contact more nodes, which prolongs the time for confirming transactions.

Instead of dealing with the multi-objective optimization problem, we decided to follow the same path as the core technology of bitcoin: build a layer (L2 / "flash layer") on top of the blockchain layer (L1 / "clearing layer"). The rules are slightly weak. While ensuring L1 security to the greatest extent, transactions are accepted by peer nodes, and transactions do not have to be recorded on L1 (and extended)



To all nodes). In doing so, we have integrated some incentives to encourage customers to use the scheme by default and nodes to accept such transactions.

3.1.3 POS attack

Over the years, people have been discussing a few attacks and doubts against POS. In this section, we will review the basic definitions of these attacks to let readers understand the challenges that our agreement will face in the future.

Short range attack and long range attack

We define short-range attack as an attack on the latest client that has accepted less than n blocks behind the network block, and long-range attack is an attack on the latest client that has accepted more than n blocks behind the network block.

N is a parameter of the consensus protocol, which can be explicitly selected or derived from other factors. Examples of clearly defined n can be found in Ethereum's concept of weak subjectivity. Due to the low computing cost of creating blocks, hostile entities that can access past private keys can create a competitive chain without spending too much related fees. Since the key controlled token is basically useless after being removed, it is economically feasible for the verifier to sell his private key after exiting the system.

Equity smash attack

When some consensus algorithms are affected by random factors, a shattering attack will occur. Since consensus protocols cannot rely on data that they cannot verify (which may lead to trust or even a single point of failure), any randomness must be based on known and predictable processes and data available to all participants, which is contrary to the traditional randomness method.



Because the data is public, an attacker can try to influence it in a more favorable way. For example, a naive consensus agreement may include the following steps:

- select a fixed group of N verifiers;
- sort the set in a predictable manner (e.g. by its public key);
- select a verifier for each round to specify the block;
- the selected verifier has a hash index (previous_block) in the sorted set%

In this way, the verifier simply needs to find a suitable single hash as the verifier of the next round. In the random prediction model, the probability that $n=1001000$ combinations make the verifier the next verifier is greater than 99.99%. A common method to solve this problem requires blind pre submission. For example, the verifier submits a hash in round R, and finds the original image of the hash in round r+1. Then, the random values (or their seeds) in the primitive are summed (or XOR, concatenated hash).

Disinterested attack

Disinterested attacks occurred in the early design of POS protocol. If two different blocks are presented to the verifier and both are valid candidate blocks of the current chain, thenThe most economical and feasible way is to "vote" to choose both, because "voting" in the chain does not consume resources. Thus, the consensus protocol adds punishment for this behavior.

However, if the mandatory lock-in period is not combined, the effect of such punishment is not good. If the verifier can move (sell) his interest at any time, including immediately after the block voting, it is irrelevant for them to move the interest, and then try to spend the previously spent output from the block that still holds the interest. Since the interest already belongs to the other party, such behavior cannot be punished. For this reason, a lock-in period is introduced.



3.2 Digital human AI technology engine

Definition and characteristics

Game world digital human is a virtual human with digital shape. Unlike robots with entities, virtual digital people rely on display devices. Many virtual people we know can only be displayed through mobile phones, computers or smart screens.

Have four abilities, namely, image ability, perception ability, expression ability and entertainment interaction ability.

- 1) Image ability: the appearance of the owner, with specific features such as appearance, gender and personality
- 2) Expressive ability: the behavior of the owner, with the ability to express in words, facial expressions and body movements
- 3) Perception and interaction ability: the owner's thought has the ability to identify the external environment and interact with people

classification

Research and analysis of digital people in the current market can be divided into the following four categories:

1. According to the dimension of personality symbol, it is divided into two categories: virtual IP and the second avatar of the virtual world
2. In terms of appearance, it can be divided into cartoon, realistic and other styles
3. Generally speaking, it can be divided into four types: quadratic element, 3D cartoon, 3D high realism and real person image
4. From the perspective of industrial application, it is divided into service-oriented virtual digital human and identity oriented virtual digital human



1) By personality symbol dimension

Virtual IP means that there is no corresponding real person in the real world, and its appearance features, basic human settings, various preferences, background information, etc. are set manually, such as the happy sister of McDonald's, which is provided with technical support by Netease Fuxi.

The second part of the virtual world is mainly aimed at the future virtual world, with the ultimate goal of creating their own virtual separation for everyone, so as to meet the social, entertainment, consumption and other needs of individuals in the virtual world.

2) By drawing dimension

The second dimension refers to the presentation in the plane space, which can only be viewed from a single perspective. The perspective has been determined in the production process, and users cannot change the perspective by themselves.

3D cartoon refers to a three-dimensional model, which can be presented in a three-dimensional space and can be viewed from any angle of view. The product manufacturing group can set the visual angle visible to the user. 3D hyper realism is very close to real humans, or there is a certain degree of cartoon based on real people. The characteristics of human image virtual digital human come from real people. At present, it is mainly used in AI synthesis anchor.

3) Industrial application dimension

The service-oriented virtual digital human is mainly functional and provides services:

Replace the real person service to complete content production and simple functions, including virtual anchor, virtual teacher, etc

Multimodal AI assistant, providing daily companionship, care and other services, including virtual caregivers, virtual companionship assistants, etc.

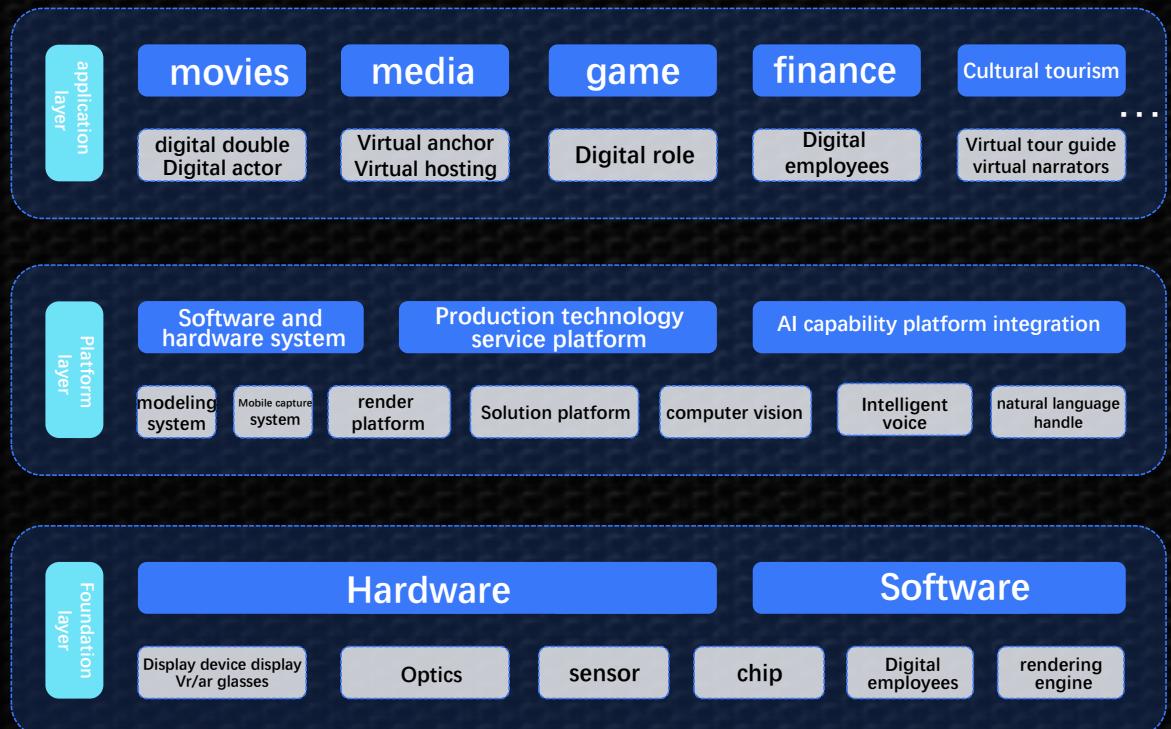


Identity based virtual digital people have identity and are used for entertainment / social networking:

Virtual ip/ idols to promote virtual content production, including virtual idols

The second part of the virtual world, for Social Entertainment.

4) Industry view

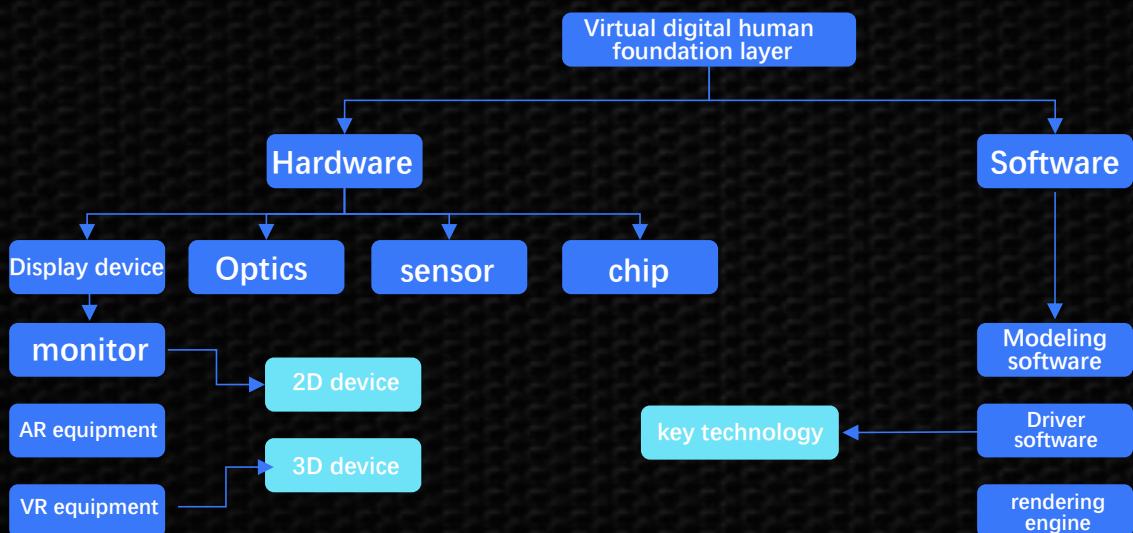


The basic technology layer of virtual digital human provides technical support for the production of virtual digital human, which can be divided into hardware and software.

The hardware includes all the hardware required for the presentation and interaction of virtual digital human. The hardware includes display equipment, optical devices, sensors, chips, etc. the game world digital human chip is entrusted to LX semiconductor, a Korean chip company. Display devices are the carriers of digital people, including 2D display devices such as mobile phones, TVs, projectors and LED displays, as well as 3D display devices such as naked eye stereoscopic, AR and VR. For these display devices, the game World Singapore foundation has cooperated with a number of enterprises in production.



Optical devices are used to make visual sensors and user displays. The sensor is used to collect the original data and user data of digital human. The chip is used for sensor data preprocessing, virtual digital human model rendering and AI computing. In addition to presentation and interaction software, the software also includes modeling software, rendering engine, etc. the modeling software can carry out three-dimensional modeling of the human body and clothes of the virtual digital human. The rendering engine can render lights, hair, clothes, etc. the mainstream engines of game world include Unity 3D of unity technologies, unreal engine of Epic Games, etc.



The virtual digital human platform layer connects the independent technologies in the basic technology layer in series and applies them to the specific project design, mainly including modeling, dynamic capture, rendering and other production links. At present, the platform layer game world is developing at a high speed. The competitive barrier mainly lies in how to combine the technical ability and cultural design ability to provide an integrated virtual digital human solution for the downstream application layer. With the development of AI, algorithm, 5g network and other technologies, there is still room for the cost of production.

The application layer of virtual digital human applies virtual digital human to various industries. The technology related to virtual digital human has been applied in the fields of film, television, media and games for many years. With the further maturity of the technology, it is gradually showing a new enabling way. At present, in the fields of finance, culture and tourism, virtual human has gradually begun to provide services such as digital employees and virtual tour guides by virtue of its combination with AI technology, as well as its cost and expressiveness advantages.



5) General framework and technical architecture

Common framework

Generally, the virtual digital human system is composed of five modules: character image, voice generation, animation generation, audio and video synthesis display, and interaction. According to the dimension of character graphic resources, character images can be divided into two categories: 2D and 3D. From the aspect of appearance, they can be divided into cartoon, personification, realism, hyperrealism and other styles.

The voice generation module and the animation generation module can generate the corresponding character voice and the corresponding character animation based on the text respectively; The audio and video synthesis display module synthesizes the voice and animation video, and then displays it to the user.

The interaction module enables the digital human to have the interaction function, that is, to recognize the user's intention through intelligent technologies such as voice semantic recognition, and determine the subsequent voice and action of the digital human according to the user's current intention, so as to drive the character to start the next round of interaction.

Technical architecture

Based on the general system framework of virtual digital human, the technical framework of "five horizontal and two vertical" is extracted. "Five horizontal" refers to the five technical modules used for digital human production and interaction, namely, character generation, character expression, synthetic display, recognition and perception, analysis and decision-making, etc.



	2D digital human	3D digital human
Character generation	nothing	Character modeling, etc
Character expression	Speech generation, animation generation (driving, rendering), etc	
Composite display		Terminal display technology
Recognition perception	Speech semantic recognition, face recognition, motion recognition, etc	
analysis of resolution		Knowledge base, dialogue management, etc

To sum up, the market space of virtual digital human is still in the development stage at this stage, and it also faces such a huge market. Game world uses its mature AI virtual engine technology to solve the traffic problem of the new ecological platform in the early stage with the financial model of defi mining, while the token generated by platform mining is exchanged for the specified chip, and there is a single camera system at the back end of the technology, so as to form a did digital human, Provide users with a more realistic immersive experience.

Copy yourself in the real world to another digital world. The game world digital ecosystem is to provide a linkable interface between the entertainment digital virtual world and the real physical world. This interface is what GW ecology is doing. Therefore, GW ecology is not only a blockchain aggregation ecology, but also a complete digital entertainment flow ecological platform.





Team and future planning

4.1 GW blockchain Technology Laboratory

GW blockchain technology laboratory is located in Tokyo and is sponsored by Singapore gw Jointly initiated by Dao foundation, DCG, Brussels and qexfund sp. The foundation is a leading venture capital organization in the world, founded in 2019. GW. The original team of Dao foundation has rich investment experience in the global financial field. The initiator, alenn Kang, led the establishment of a well-known leading group in the industry. The team members are mainly distributed in Asia and Europe. They have market and practical experience in DAPP development, defi, NFT, metauniverse, Web3.0, chain games, auction, finance and other fields. They not only have strong technical capabilities, but also have excellent scientific research capabilities, Outstanding achievements have been made in many fields.



In 2020, "game world" was officially approved. After two years of precipitation, it was officially launched globally in 2022. It is a digital game entertainment aggregation platform based on Web3.0 ecology.



Laboratory responsibilities

In the blockchain technology, we will build the research and application of the consensus protocol, cryptographic security, cross chain protocol, AI fantasy engine and other technologies of the GW decentralized ecological platform, and take the diversified application scenarios such as business social networking and finance as a breakthrough to take the lead in realizing an autonomous industrial / financial blockchain system. At present, the blockchain laboratory has listed seven research directions of GW ecology, including consensus protocol, cryptography security and privacy protection, blockchain technology combined with trusted execution environment, cross chain protocol, smart contract language and overall security analysis, blockchain technology combined with IOT, and blockchain technology combined with secure multi-party computing. Fundamentally guarantee the asset security of each user on the GW ecological platform and the digital AI technology experience of diversified application scenarios. Today's GW ecological platform has been formed from technical exploration to landing scenario. After a long time of continuous exploration, summary and technical innovation, the GW blockchain technology laboratory finally has a GW decentralized ecosystem with the most comprehensive applications, the widest use, the highest efficiency and the highest safety in the world.

organizational structure

In order to help GW ecology make rational use of funds and resources under the premise of fairness, openness and transparency, continuously promote the rapid development of GW ecology, expand the application scenarios of GW ecology, and attract more institutions, companies, projects, organizations and developers into GW ecology. The fund establishes a governance committee, under which a technical committee, a financial and Human Resources Committee, and a market and public relations committee are established.

The Governance Committee is the highest decision-making body for fund management. It manages the executive bodies of the fund and has the right to decide the use, reward, punishment, freezing, etc. of the fund. The members of the Governance Committee are elected by the community. The term of office of the decision-making committee is 1 year. After the term of office expires, it will be elected by the GW community and can be re-elected.



Main responsibilities:

- (1) Formulate and modify the governance mechanism of the foundation;
- (2) To decide on the fund's business plan and investment plan;
- (3) Examine and approve the annual revenue and expenditure budget, final accounts and fund distribution plan;
- (4) To audit and supervise the work of the committees at various levels;
- (5) Decide on other major matters.

Qualification:

- (1) Recognize the ecological value of GW and voluntarily join the Governance Committee;
- (2) No criminal record.

4.2 GW technical team

With the support of pinnacle blockchain technology development agency, GW ecological digital game entertainment aggregation platform team has attracted R & D teams from Stanford University, Massachusetts Institute of technology, Microsoft, IBM and coin security chain, and has a number of experts in computing and enterprise strategy fields such as Tencent, Huawei, Samsung and Tesla as professional consultants for the team. The team has rich experience in blockchain infrastructure, distributed databases, cryptographic algorithms, business ecological applications, etc., which provides strong talent support for the rapid development of GW ecology.

CEO: Aлен Kang

Doctor of economics, senior popular science scholar in the blockchain field, and now he is also an entrepreneur in the blockchain field and an investor in the blockchain venture fund. He is the president of the Asian blockchain society, the general manager of the Asian blockchain Fund Investment Co., Ltd., and the world blockchain business school



Guest professor and many other titles. It is known as the pioneer of digital currency investment for its keen vision and outstanding courage. Kang has a wide range of expertise, including but not limited to blockchain business integration, strategic planning, project management, architecture solutions, process improvement, product management, corporate communications and cross functional leadership.

CTO: Qindy Jeffrey

Senior full stack development engineers with ten years of development experience are proficient in server-side development such as c++, go, Java, Erlang and front-end development such as Web3 and H5. Senior smart contract development experts have in-depth research on the underlying network of Ethereum, and are also top DDoS Defense experts in the world. Their technical solutions are still regarded as technical specifications by other developers.

COO: Kiter Stephen

He once worked as a blockchain analyst in blockchain capitalist. He manages a world-class blockchain payment company. His fields of expertise include: TMT, financial technology, robot consultant, blockchain, e-commerce, market, B2C, cross-border, M & A, financing, enterprise development, investor relations, etc

CMO: Jerry Korgan

Taking advantage of the strategic partnership with us hedge funds and alternative investment and wealth managers, he led to promote the business expansion of a well-known project in the Asia Pacific region, with passion and rich experience in digital fun. As a senior member of GW ecological sales team, he operates a large number of spontaneous potential customers, provides customer services for GW ecological private equity fund and improves the residual value of assets. GWT token is one of the few cryptocurrencies designed in the mode of defi+ digital aggregation ecology. He hopes to see the GWT token become a model in cryptocurrency.



4.3 GW development planning

Phase I - 2022

- 1) Test the internal and public tests of the network, and start private and founding network mining.
- 2) The project is open source, synchronized on the computing power chain, and the mainstream coins are in the user's own wallet, which is safe and reliable.
- 3) The global GW ecological studios are constantly landing to jointly build their own GW world.

Phase II - 2023

- 1) In the form of defi+gamefi+nft, the plan is based on the application scenario of defi decentralized financial ecology.
- 2) The ecological application is diversified. Players can freely choose the ecology, and participation means revenue.
- 3) This stage mainly focuses on application scenarios such as multi chain decentralized exchange, Web3.0 application ecology, NFT trading and chain games.

Phase III - 2024

- 1) Web3.0+socialfi activates the game world Dao ecology around the Web3.0 social ecology.
- 2) Go online GWC public chain main network to share ecological prosperity.



Ecological products

5.1 Multi Chain decentralized exchange

5.1.1 advantages of GW Dex

Trading on GW DEX has many advantages over centralized exchanges and DEX exchanges based on trading book order book. No transaction book means that all transactions are executed according to the smart contract, which is called P2C (point-to-point smart contract) transaction. DAPP of GW DEX exchange allocates exchange rate for assets through the price information provided by Oracle, so as to run asset conversion. This provides unlimited liquidity equivalent to the total amount of collateral in the system, zero slip point and no review of up chain transactions.

5.1.2 working principle of GWS

GWS are synthetic assets that track actual asset prices. They enable the holder to trade various asset classes on Ethereum without holding actual assets or entrusting any custodian. GWS is supported by Teth. When Teth is used as collateral, it is mortgaged at the proportion of 800%.

5.1.3 planned GWS

There will be four types of GWS available in the future: fiat currency, bulk commodities, cryptocurrency and reverse cryptocurrency. Our legal tender GWS includes GUSD, geur, gkrw, gcny, etc. Commodity GWS include synthetic gold and synthetic silver, both in ounces. Our cryptocurrencies GWS include GBTC, geth and gbnb, and more categories will be added in the future. While inverse GWS reversely tracks the price of cryptocurrency, which means that when the price of BTC decreases, the price of ibtc will rise.



5.2 Web3.0 social platform

Traditional Internet platforms are prone to monopolistic organizational forms and business models, and the core idea of GW Web3.0 is that users and builders share the network. In the GW meta universe, an organization form of user and builder autonomy may be formed, and its organization rules are implemented by the program code on the premise of compliance with the supervision. This requires the use of blockchain technology to reach the maximum consensus and cooperate with the supervision to form the ecological order of GW.

All activities in GW can converge to data. The data interaction process between charity and the metauniverse, between different applications in the metauniverse, between the metauniverse and external devices, and the process of external devices collecting, storing, processing, distributing, utilizing and disposing personal behavior data all require blockchain related distributed networks, consensus mechanisms, smart contracts, privacy computing, etc.

Here, gwchat is a community-based encrypted anonymous social platform. Gwchat provides users with the storage and transaction functions of cryptocurrencies through social attributes. It is a new generation of super anonymous network with security, anonymity and expansibility. It realizes the perfect unity of privacy protection and capacity scalability, and comprehensively protects the security of personal assets and privacy. Gwchat uses blockchain technology to realize anonymous underlying protocol from network layer to application layer. It uses decentralized consensus, smart contract, zero knowledge proof, mixed network and mixed currency technologies to create a new anonymous network.

Generally speaking, the real meaning of gwchat is that any of our personal information, including words and photos, will be encrypted and sent anonymously by using gwchat.

At the time of publishing, gwchat blockchain not only supports the creation of personal data and posts, etc



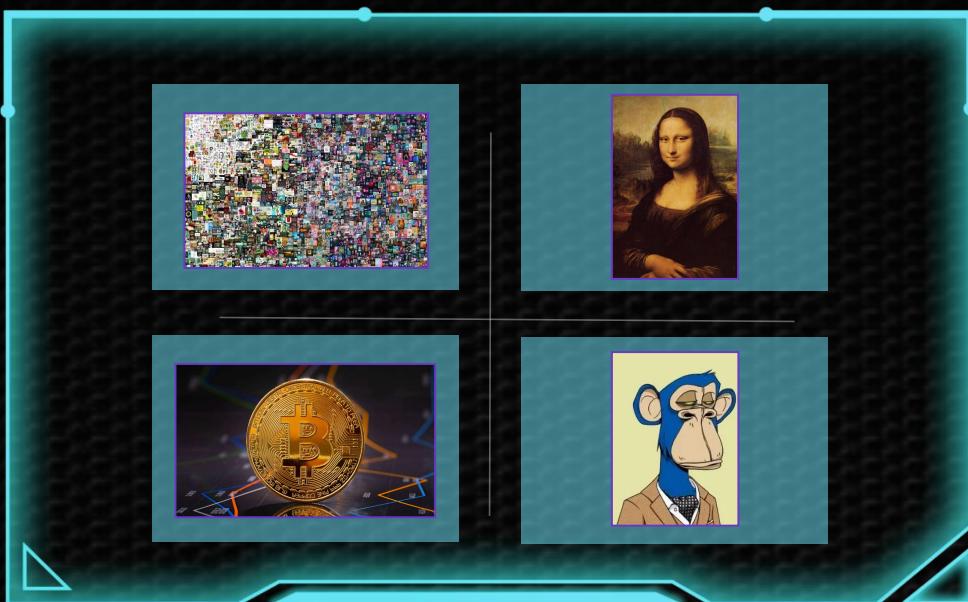
Traditional social functions also support novel blockchain native functions such as social tokens, rewards, real-time global message push and NFT. From social NFT experience to influential stock market, these functions alone can support a large number of new categories of monetized products. In turn, these products allow creators to make more money on gwchat enabled applications than on traditional social networks, while maintaining a more direct relationship with their followers. In addition, the creators are not locked in a few centralized applications by gwchat, because gwchat's business model revolves around the transaction and flows through the decentralized network where there may be thousands of third-party applications, which is similar to the way Ethereum works with defi applications today.

With your help, we hope to build gwchat anonymous social networking into a lasting positive force for mankind and bring competition and innovation back to the Internet. The Internet was originally a fundamentally centralized ecosystem, but we are at a historical moment when things are concentrated and innovation is more difficult than in the past. After years of deliberation, we believe that the pendulum will return to decentralization, perhaps permanent, and we all have the opportunity to participate in it. A new generation of applications that the world can build collaboratively unleash the full potential of human creativity.

5.3 NFT trading market

The intervention of blockchain technology can solve the problems of virtual assets and virtual identities in the meta universe. In the past, there were many problems with virtual assets and virtual identities of users in traditional Internet platforms. The most important one was that virtual assets could not be linked to real assets, or there was only a single link (game recharge to buy skin).

With the intervention of blockchain, this equity recording method makes virtual assets similar to real assets in the physical world. Users can dispose, circulate and trade at will, without the restriction of centralized institutions. The mature DFI ecology of blockchain can provide a complete set of efficient financial system for GW ecology.



Provide users with low-cost, low threshold and efficient financial services from the aspects of mortgage lending, securitization and insurance of virtual assets. Users' virtual assets, like real assets, enjoy financial services, thus further strengthening the asset attributes of virtual goods. Through the stability of virtual property rights and rich financial ecology, GW economic system will have the adjustment function in the real world, and the virtual value of users' labor creation will be determined by the market. The ownership information of virtual assets is recorded through NFT, and NFT is traded point-to-point in the blockchain decentralized network. In essence, these projects use the blockchain platform for asset clearing and settlement, reducing trust risk and improving clearing efficiency. The interworking between virtual assets and real assets is an indispensable bridge between the meta universe and the real world.

GW ecology will launch the NFT content rights confirmation platform, and blockchain technology will ensure the uniqueness and scarcity of online artists' works. Aggregate trading and auction allow creators to gain more income. GW ecology will launch interactive activities such as blind box, and NFT will cooperate, integrate and develop with other sectors or companies.



5.4 Gamefi competitive platform

Gamefi is a blockchain game. GW ecology will give you the ultimate game experience. Players can earn play to earn while playing in the game. You can not only experience the fun of the game, but also make money in the game. GW players can get token rewards in the game, and tokens can be sold in the digital money market; You can also sell the equipment in the game, set the virtual assets in the game, land, props, pets, etc. directly in the market.

The main feature of chain game is that play to earn is to play while earning; GW ecology serves as a decentralized integrated intelligent platform for blockchain. GW aims to build the first software and applications that are most commonly used by various consumers and large-scale interactive vs competitive games into one. Without changing users' behavior habits, GW aims to build the software and applications with the largest number of users, the widest range of use and the highest frequency of use in the current market; Let users feel multiple parallels in their favorite, familiar and frequently used software applications by giving them a brand-new profit model that has never existed before.





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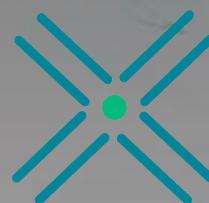
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GWT DAO

