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Metaverse and NFT

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What is Metaverse?

What is Metaverse?

From Ready Player One to Free Guy



"Blade Runner 2049" shows the "human" composition of the future society: biological humans, cyborgs, digital humans, virtual humans, information humans, and their descendants with different personalities, skills, knowledge, experience and other talents. The inhabitants of the "metaverse" in the future are bound to be diversified, and will only be more complicated than the society in Blade Runner 2049. Each individual will not only have a single identity, but a more complex identity. Life is also from limited life to infinite life.

What is Metaverse?

Is VR a metaverse?

Justin Bieber



Travis Scott



What is Metaverse?

Virtual influencer/KOL-Lil Miquela



Flawless 3D-designed virtual characters, such as Miquela Sousa and Shudu Gram, dressed in the latest ready-to-wear collections, displayed personal style on social media, and "participated" in fashion shows and even supported social events. Computer-generated 19-year-old Brazilian Hispanic model Miquela Sousa, she also has a better known name: Lil Miquela (Lily Miquela), has more than 2.8 million followers on Instagram. She took over the brand's Instagram account during the Prada brand's 2018/2019 autumn and winter fashion show this year.

What is Metaverse?

GPT - 4 -> DALL·E 3 -> Sora



Prompt: Several giant wooly mammoths approach treading through a snowy meadow, their long wooly fur lightly blows in the wind as they walk, snow covered trees and dramatic snow capped mountains in the distance, mid afternoon light with wispy clouds and a sun high in the distance creates a warm glow, the low camera view is stunning capturing the large furry mammal with beautiful photography, depth of field.

- GPT-4 is OpenAI's most advanced system, producing safer and more useful responses.
- DALL·E 3 understands significantly more nuance and detail than our previous systems, allowing you to easily translate your ideas into exceptionally accurate images.
- Sora is an AI model that can create realistic and imaginative scenes from text instructions.

What is Metaverse?

A new generation of Internet?

Metaverse is not space but time

In the field of artificial intelligence, there is a concept called “[\(Technological\) singularity](#)”, which refers to the moment when artificial intelligence becomes smarter than humans in the future. Our entry into the metaverse is also a time singularity, not a new world, a new space. When the value of our actions, relationships, and assets in the virtual digital world approximately equals or exceeds the value of our activities in the real world, we naturally enter the metaverse.

The nature of Metaverse

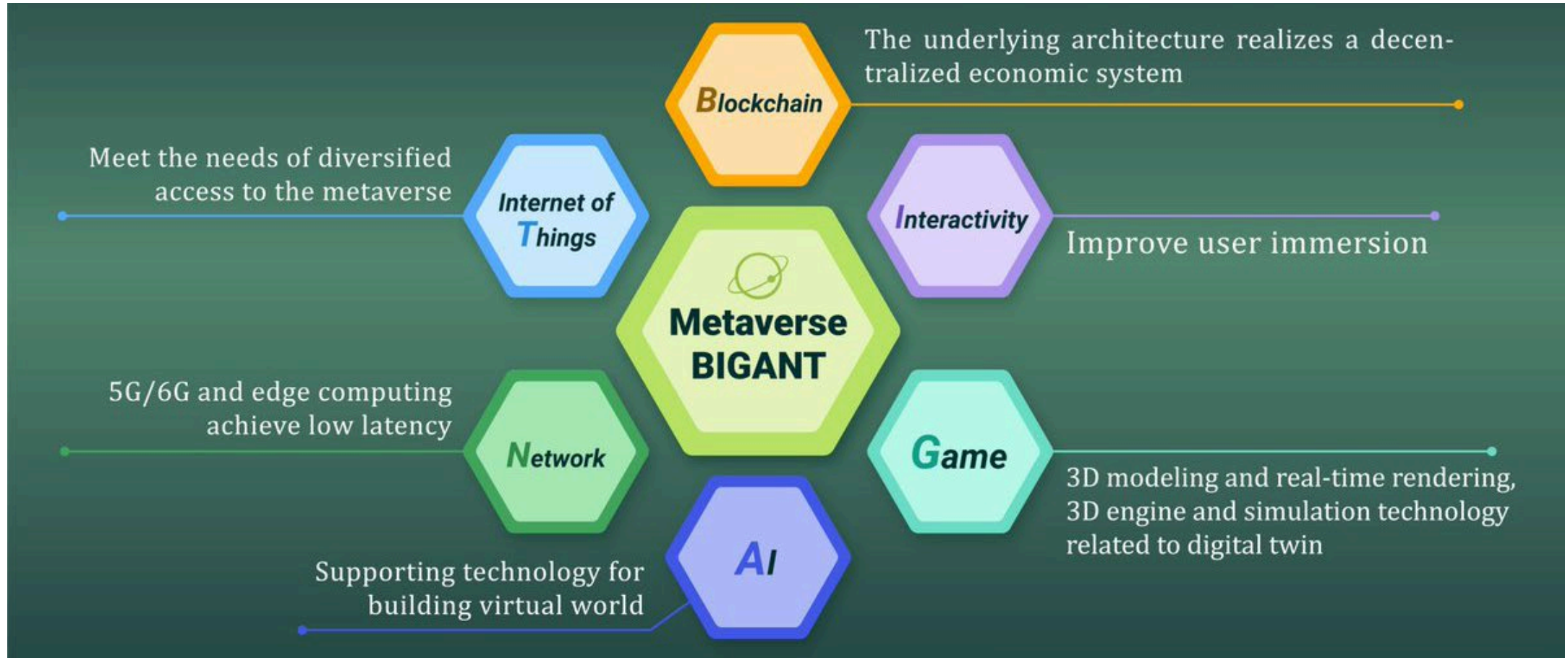
The metaverse is not only to blur the boundaries of virtual reality, but also to create new rules based on the virtual world.

- Product Innovation
- Industry Innovation
- System Innovation

The technical elements of Metaverse

The technical elements of Metaverse

BIGANT



The technical elements of Metaverse

BIGANT - BI

Blockchain

Due to the economic nature of metaverse, it must have a complete operating economic system that can support transactions, payments, and income from labour. Blockchain has five major characteristics: decentralisation, openness, autonomy, immutability of information, and anonymity. Payment and clearing systems based on blockchain technology, decentralised smart contracts, and NFT non-homogeneous tokens can effectively solve the identity and economic problems in the construction of metaverse. Among them, NFT, as the only cryptocurrency token representing digital assets under the blockchain framework, can be bought and sold in the same way as physical assets, and can be traded and transferred on its own in metaverse, ensuring the effective confirmation of basic assets.

Interactive technology

The Internet and social platforms cannot accurately project the virtual world onto the physical world, and users cannot get a sense of depth in the virtual world. With the iterative upgrade of technology, interactive technologies such as VR, AR, MR ([Mixed reality](#)), holographic imaging, brain-computer interaction and sensing have emerged. AR superimposes digital information with the physical environment. VR completely creates a vivid virtual world, which brings users immersion through continuous improvement of video resolution, frame rate, head MTP delay, operation response delay, and MTP delay. Virtual reality experience.

The technical elements of Metaverse

BIGANT - GA

Game

Games are the presentation method of metaverse, with flexible interaction and rich information, providing a creative platform, interactive content and social scenes for metaverse. Traditional social networks have limited expression channels and methods, and users cannot fully express their opinions. Social activities in vertical scenarios have become a trend in recent years. From the perspective of the metaverse, the game provides rich IP connotations for the virtual world, which itself is a kind of diversion and vertical social scene construction. During the epidemic, games + concerts, games + graduation ceremony, games + academic conferences, etc., have accelerated people's changes in the concept of the virtual world.

Artificial intelligence

AI includes computer vision, machine learning, natural language processing, and intelligent speech. Under AI technology, the system can reach and exceed the level of human learning, realise rapid data collection, analysis and processing, and improve the operational efficiency and intelligence level of metaverse through the large-scale production of content.

Generative AI is a significant part of artificial intelligence that focuses on creating new content, whether it's text, images, videos, or music. It leverages deep learning techniques, particularly neural networks, to analyze vast amounts of data and generate new, original content that resembles the learned material. This can include creating realistic images from descriptions, composing music, writing stories, or generating realistic human voices.

The technical elements of Metaverse

BIGANT - NT

Network and computing technology

Computing power is the support for the creation and experience of virtual content in metaverse, and more realistic modelling and interaction require stronger computing power as a prerequisite. Metaverse can simulate all activities in the real world, and even in the virtual world, you can get an immersive real experience of social activities and other activities. The powerful computing power can realize the development of virtual worlds with visual effects and physical laws that are infinitely close to the real universe, complete the high-quality interaction between the virtual world and users and the network construction of the blockchain, and provide AI technology that supports multi-source development, in order to achieve infinite emulation is possible.

Internet of Things

The Internet of Things technology uses various sensors and underlying networks to obtain and transmit information to help metaverse perceive the world, and ultimately rely on the operating system to connect and orderly manage metaverse. Realising the interconnection of all things based on the Internet of Things is an important support for the symbiosis of all things in metaverse.

These IoT sensors and devices can range from simple temperature sensors to complex cameras and biometric scanners. They continuously collect data about their environment, including movement, temperature, light, sound, and even human interactions. This real-time data is essential for creating a more immersive and interactive metaverse.

The economic elements of Metaverse

The economic elements of Metaverse

4D Metanomics

Digital Creation

Digital Assets

Digital Market

Digital Currency

The possible development of Metaverse

The possible development of Metaverse

The first stock of the metaverse - Roblox

Since Roblox was listed on the US stock market in March this year, the concept of Metaverse has only begun to be paid attention to by the capital market.

- Roblox's revenue is expanding rapidly. Its revenue in 2021 is expected to exceed 1 billion U.S. dollars. Its 2020 revenue has reached 920 million U.S. dollars, an increase of 80.4% year-on-year. In 2018 and 2019, the company's revenue was 33 and 510 million U.S. dollars, respectively. The expansion trend is clear. In the past three years, the net cash generated by the company's operating activities was 100 million, 100 million, and 520 million US dollars, respectively. The cash flow in 2020 is the best in history.
- Roblox was established in 2004 as a typical online game creation community company. In 2011-14, the initial development was launched successively on IOS and Android. In the beginning 2015, its community player MAU has continued to rise. A total of tens of millions of creators have used Roblox tools to develop games and entered China in 2019 in cooperation with Tencent.
- Roblox's business model combines the attributes of games, development, and education. While providing games to players, it also provides free tools for players to create their own games, that is, the developer editor.
- As of 2021, Q1 Roblox DAU is 42.1 million people, up to 5.7 million people are online at the same time, and there are more than 18 million games.
- Among Roblox users, 67% are under 16 years old.

The possible development of Metaverse

4 Core Tracks

Underlying Architecture

- Blockchain
- DeFi
- NFT

Back-end Infrastructure

- 5G
- GPU
- AI

Front-end Equipment

- AR/VR
- IoT

Scene Content

- Game
- Virtual person / identity
- Virtual pet / space

GameFi -> X2E

GameFi -> X2E

WEB 123

Web 1.0

- Read
- Company
 - Static text
 - PC
 - Software
 - Centralized

Web 2.0

- Read & Write
- Platform
 - Interactive content
 - Cloud
 - Mobile App
 - Centralized

Web 3.0

- Read & Write & Own
- Community
 - Virtual economy
 - Blockchain
 - DApps
 - Decentralized

Value Creation

Manufacturing economy

- Company value maximization
- Main street model
- Concentration and Exclusivity
- Big capitalist

Internet economy

- Network Value Maximization
- 'Fax Effect'
- Silicon Valley Model
- Distribute and Share
- Entrepreneur (author)

Metaverse economy

- Maximize the value of space
- Virtual space is boundless
- Metaverse model
- Dissipate and Share
- Contributor

GameFi -> X2E

Play(er) to Earn – P2E

Player

- **Players are stakeholders**
 - Developer
 - creator
 - contributor
 - consumer
 - investor
- **NFT is a token of metaverse assets**
- **Players play FT or NFT**

Earn

- **Player earns returns by operating metaverse assets (NFT)**
- **The value unit earned by Earn is Token (FT or NFT)**
- **The basic business logic of the Metaverse**

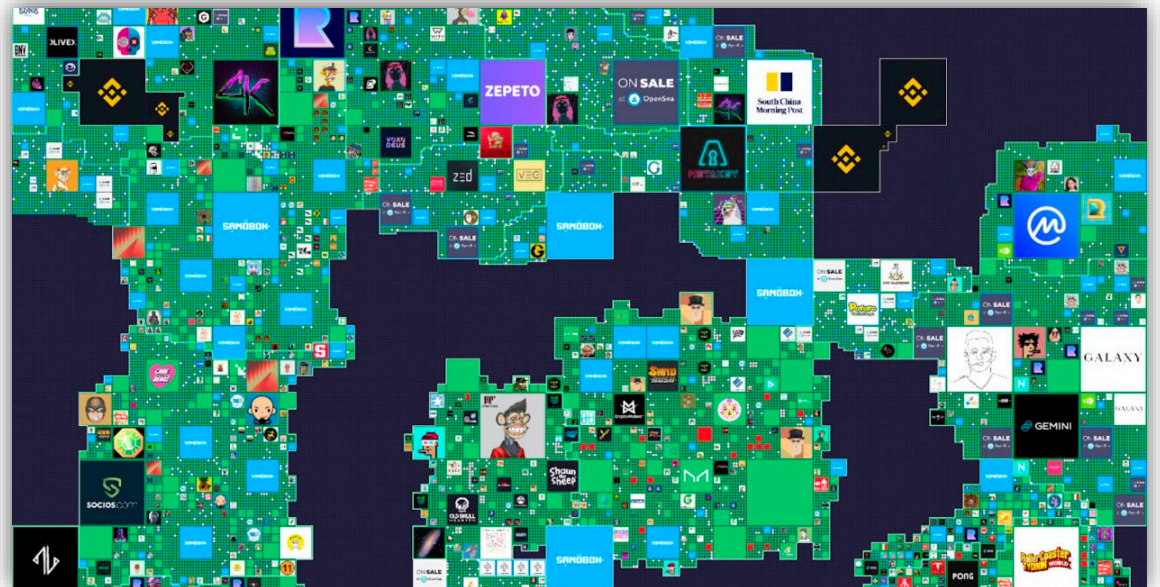
GameFi -> X2E

P2E

NFT



GameFi



GameFi -> X2E

STEPN - Move2Earn



StepN is a fitness app similar to other activity-tracking apps like Strava that keep a record of the distance you've covered during a given exercise session. But with StepN, users can earn crypto while doing so.

As of October 2022, 1 GST is worth about \$0.02 USD, significantly down from a late-April high of \$8.51. A basic set of NFT sneaker walkers in StepN earn 5 GST for every one Energy, so you'd be earning \$0.10 for every walk or run at the most basic level.

Comfort is the last of the four characteristics, and here is where StepN introduces its governance token, GMT (Green Metaverse Token), into the mix. Only sneakers that reach Level 30 and have a minimum of three Energy are able to earn GMT. At that Level, you'll either continue earning GST or switch to GMT. GMT can be spent on a number of things, including renaming your sneakers, leveling them up, and redistributing attribute points.

NFT



NFT

ERC721: Non-fungible Token (Deed) Standard

All the token standards we have looked at so far are for fungible tokens, meaning that units of a token are interchangeable. The ERC20 token standard only tracks the final balance of each account and does not (explicitly) track the provenance of any token.

The ERC721 proposal is for a standard for non-fungible tokens, also known as deeds.

From the Oxford Dictionary:

deed: A legal document that is signed and delivered, especially one regarding the ownership of property or legal rights.

The use of the word “deed” is intended to reflect the “ownership of property” part, even though these are not recognized as “legal documents” in any jurisdiction—yet. It is likely that at some point in the future, legal ownership based on digital signatures on a blockchain platform will be legally recognized.

Non-fungible tokens track ownership of a unique thing. The thing owned can be a digital item, such as an in-game item or digital collectible; or the thing can be a physical item whose ownership is tracked by a token, such as a house, a car, or an artwork. Deeds can also represent things with negative value, such as loans (debt), liens, easements, etc. The ERC721 standard places no limitation or expectation on the nature of the thing whose ownership is tracked by a deed and requires only that it can be uniquely identified, which in the case of this standard is achieved by a 256-bit identifier.

NFT

ERC721: Non-fungible Token (Deed) Standard

To grasp the basic difference between ERC20 and ERC721, it is sufficient to look at the internal data structure used in ERC721

```
// Mapping from deed ID to owner
mapping (uint256 => address) private deedOwner;
```

Whereas ERC20 tracks the balances that belong to each owner, with the owner being the primary key of the mapping, ERC721 tracks each deed ID and who owns it, with the deed ID being the primary key of the mapping. From this basic difference flow all the properties of a non-fungible token.

The ERC721 contract interface specification is:

```
interface ERC721 /* is ERC165 */ {
    event Transfer(address indexed _from, address indexed _to, uint256 _deedId);
    event Approval(address indexed _owner, address indexed _approved, uint256 _deedId);
    event ApprovalForAll(address indexed _owner, address indexed _operator, bool _approved);
    function balanceOf(address _owner) external view returns (uint256 _balance);
    function ownerOf(uint256 _deedId) external view returns (address _owner);
    function transfer(address _to, uint256 _deedId) external payable;
    function transferFrom(address _from, address _to, uint256 _deedId)
        external payable;
    function approve(address _approved, uint256 _deedId) external payable;
    function setApprovalForAll(address _operator, boolean _approved) payable;
    function supportsInterface(bytes4 interfaceID) external view returns (bool);
}
```

NFT

ERC721 also supports two optional interfaces

The ERC721 optional interface for metadata

```
interface ERC721Metadata /* is ERC721 */ {  
    function name() external pure returns (string _name);  
    function symbol() external pure returns (string  
        _symbol);  
    function deedUri(uint256 _deedId) external view  
        returns (string _deedUri);  
}
```

The ERC721 optional interface for enumeration

```
interface ERC721Enumerable /* is ERC721 */ {  
    function totalSupply() external view returns  
        (uint256 _count);  
    function deedByIndex(uint256 _index) external view  
        returns (uint256 _deedId);  
    function countOfOwners() external view returns  
        (uint256 _count);  
    function ownerByIndex(uint256 _index) external  
        view returns (address _owner);  
    function deedOfOwnerByIndex(address _owner,  
        uint256 _index) external view  
        returns (uint256 _deedId);  
}
```

NFT

Opensea - Metadata structure

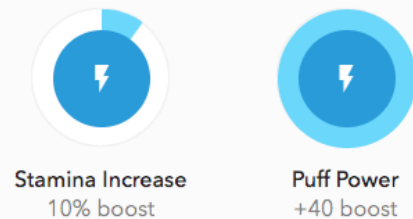
```
{  
  "description": "Friendly OpenSea Creature that enjoys long swims in the ocean.",  
  "external_url": "https://openseacreatures.io/3",  
  "image": "https://storage.googleapis.com/opensea-prod.appspot.com/puffs/3.png",  
  "name": "Dave Starbelly",  
  "attributes": [ ... ],  
}
```

Attributes

≡ PROPERTIES



⚡ BOOSTS



★ RANKINGS

Stamina 1.4 of 90.2

Level 5 of 8

▮ STATS

2 Generation
Out of 2

NFT

10K collection

In the NFT 10K collections, the most popular things are the artworks. The artwork should be creative and in the NFT world even a bit weird and crazy.

Regarding NFT 10K collectibles, these artworks are a unique design of a perk or avatar. For example, an animal character as it mostly happens. But it could be literally anything else that has a creative concept in a core. Those perks, avatars, or elements must have specific traits like shapes, details, attributes, signs, symbols.

What does 10K mean?

Literally, 10K is the number of the total NFTs collection population. To elaborate, the most prominent NFT 10K Crypto Punks that emerged on the edge of 2017 were truly the pioneers of 10K collections. At the moment of writing this article, the Crypto Punks total value of all sales (Lifetime) equals \$1.58B.

They are not reproducible, they are only 10.000 of those unique tokens existing in the whole world, that's why they have a very limited supply.

Subsequently, if you would see an NFT 20K, NFT 100K, or even a trendy NFT 8888 collection, the number refers to the total amount of population.

NFT

Why do NFT 10K creators get a lot of revenue?

NFT could be literally anything. Recently, Quentin Tarantino decided to put the seven unseen scenes of the 'Pulp Fiction' as the NFT. The fundamentals of NFT value and how it has it, there is no hassle to realize why plenty of investors are so keen on buying a weird pixelated avatar that is existing in a metaverse.

But why do NFTs initially have a value, where does it come from?

As we know, that NFT could be literally anything, the value of this anything NFT can be assessed with the few key parameters as the real-world value, the NFT ownership history, the uniqueness, and the rarity.

First of all, those scenes truly have never been seen by anyone except from the filming team of Pulp Fiction, so that factor towers up both rarity and uniqueness parameters heavily positive.

And the second one is ownership. The ownership of this NFT is most likely going to be held by Quentin Tarantino himself in the first place. So, that factor is also increasing the parameter of ownership. There is no second Quentin to hold this exact NFT.

And the final is the limited supply.

There are no more than 7 and only 7 unseen scenes of Pulp Fiction that are going to be existing as NFT collectible on a blockchain network. The scarcity and limited supply create high demand and increase the sell and bid price eventually.

Hence, you could create an analogy of why 10K creators get so much revenue. There is a limited supply of 10K and a high level of uniqueness and rarity.

References to read

- [1] Grayscale, 2021, The Metaverse - Web 3.0 Virtual Cloud Economies.
- [2] J.P.Morgan, 2022, Opportunities in the metaverse.
- [3] Cointelegraph Research, 2021, Nonfungible Tokens A New Frontier.
- [4] CoinGecko, 2022, How to NFT.