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## Research on the Open World System of Metaverse Content <Ready Player One>

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### Abstract

*Recent advances in augmented reality (AR) and virtual reality (VR) technologies have led to a significant increase in metaverse platforms. Metaverses are setting a new direction for the digital world. This paper examines the phenomenon of virtual worlds that are becoming an issue these days, focusing on [Ready Player One]. One of the common features of the metaverse platform in [Ready Player One] and the platforms currently in use is the concept of open world. This is a feature that goes beyond simply moving around in a virtual world and allows users to freely reset, participate in, and control the environment. This innovative concept is a hallmark of metaverse platforms, and it is becoming increasingly important and influential. Through this study, we focused on the [open world system] of the platform in the movie and the modern metaverse platform, and suggested and studied how the scalability of the metaverse will present a turning point in the future.*

**Keywords:** *Metaverse, Platform, Ready Play One, Open World, Virtual Worlds*

### 1. Introduction

The idea of a metaverse first appeared in Neal Stephenson's 1992 novel [Snow Crash]. The novel's protagonist <Hiro> is a pizza delivery man in the real world, but in the metaverse he is a supreme warrior, introducing the concept of avatars. The metaverse described in the novel is a black, spherical planet where real and virtual objects coexist. The movie [Ready Player one] directed by Steven Spielberg depicts the metaverse in the novel. The Metaverse platform in the movie is depicted as [Oasis]. Through the metaverse platform [Oasis] in the movie, we will analyze the open world element of the metaverse platform currently in use and check the scalability of the metaverse in the future.

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## 2. Features and Types of Metaverses

Metaverse, a combination of the words “meta” and “universe”, refers to a three-dimensional virtual world based on digital technology that goes beyond reality. The concept blurs the boundaries between digital and physical reality, offering users a new level of experience and interaction. Users can interact with each other in this space and experience a variety of activities, including social interaction, gaming, education, and work collaboration. The metaverse persists in real time, and the world continues to change and evolve even when users are offline. The Metaverse has its own economic system, allowing users to transact via virtual currency or blockchain-based NFTs. This means that economic activity is possible within the Metaverse, and users can create their own virtual spaces, personalize them, and create new content. The Metaverse platform communicates with the real world, creates diverse content, pursues continuous innovation, and actively engages users. It provides new experiences based on the participation and interaction of Metaverse users.

In terms of metaverse types, ASF, a non-profit technology research organization, categorizes metaverses into four types: augmented reality, lifelogging, mirror worlds, and virtual worlds, based on two axes: augmentation and simulation, and intimate and external.

The metaverse encompasses several different types of technologies. The first is Augmented Reality (AR), which superimposes virtual objects or information on top of the real world; Pokémon Go is a prime example. The second type, lifelogging, is the recording, storing, and sharing of personal experiences and information, which is enabled by social media platforms. The third is mirror worlds, which are digital replicas of the real world in a virtual space, such as Google Earth and delivery apps. Finally, virtual worlds are spaces in which we interact with an "avatar" in an online environment, which is being facilitated by the development of AR and VR technologies. [Oasis] in [Ready Player One] is an example of a virtual world. These types of experiences are likely to continue to change and expand as technology advances.

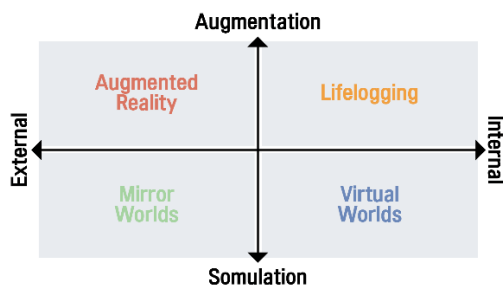


Figure 1. Four Types

## 3. Open World System

### 3.1 Open World in Metaverse

The Metaverse's open world system is a concept that provides an environment where users can freely explore and engage in various activities in a large virtual space. This system opens up endless possibilities. In this environment, users can move freely, engage in various activities, and interact with other users through their avatars.

Open world systems feature large virtual environments, which can mimic the real world or have entirely new and imaginative settings. These environments can include natural landscapes, cities, and other built structures, giving users a sense of exploration and discovery. These environments provide users with opportunities for social interaction and community building and allow for economic transactions in a manner

similar to the real world. Open world metaverses also promote creativity and personalization by giving users the ability to create and share their own content. These systems integrate the latest technologies such as virtual reality (VR), augmented reality (AR), artificial intelligence (AI), and blockchain to provide users with immersive and innovative experiences. These technologies further enhance the immersive experience of virtual worlds and allow users to have a more realistic and richer experience in the virtual world. The open world system provides a broad platform for users to engage in free and creative activities in virtual worlds similar to the real world, or in completely new forms.

The open world systems mentioned in this study are more than just a genre of game. For example, on platforms like ZEPETO, Roblox, Fortnite and Minecraft users can create and sell avatar skins or create and run their own worlds. Open world systems take a bottom-up approach, with users contributing to expanding content within the metaverse platform. This enables a creator economy.

The Metaverse open world system featured in the Metaverse content of [Ready Player One] is built around a virtual reality world called the [Oasis]. [Oasis] is a vast digital world that users access through virtual reality headsets and various interface devices. [Oasis] in [Ready Player One] is a great visual example of the endless possibilities and creativity of an open world system.

### **3.2 Creative Mode**

Creative features give users the opportunity to design their own virtual spaces and items. These features allow users to create individual and collaborative virtual experiences that reflect their own tastes and creativity. World creation allows users to create and share unique spaces, and item creation allows users to create a variety of personalized objects within the virtual world. These tools enrich the diversity and creativity of the metaverse and play an important role in user engagement and community building.

The metaverse presented in [Ready Player One] or [Oasis] provides users with a virtual space that maximizes creativity and freedom. The scenes in the movie where <H> builds his own <Iron Giant robot? and repairs <Samantha's> motorcycle exemplify this aspect. This shows that users are empowered to create and modify the virtual world, not just experience it. Within [Oasis] users can experience different themes and spaces. For example, car racing, a library, a city, and a warehouse each offer unique environments and activities. These spaces aren't just backgrounds, they're active areas where users can interact, explore, and create their own experiences. [oasis] in [Ready Player One] is an ideal model of a metaverse that provides opportunities for user-driven creative interaction, free exploration of different themes and environments, and unique self-expression.

Current metaverse platforms provide users with the ability to directly participate, create their own spaces, and build items. These features give users creative freedom and can be utilized in a variety of ways, including education, entertainment, and social interaction. As a prime example, Roblox offers Roblox Studio which allows users to create their own games and share them with other users. The tool is designed to make game creation relatively accessible, using a user-friendly drag-and-drop interface and the Lua scripting language. In a similar vein, ZEPETO's Build It feature allows users to create their own virtual spaces and craft personalized items. Similarly, Fortnite leverages Unreal Engine to allow users to create their own worlds within the game. Minecraft Education Edition also focuses on educational purposes, allowing students and teachers to incorporate fun and creative elements into their curriculum. The platform allows users to use blocks to build structures and engage in educational activities within the game. The creative tools provided by the Metaverse platform empower users to create personalized experiences, which in turn are used for a variety of purposes, including education, entertainment, and community building.



Figure 2. Iron Giant

Table 1. Compare Platform Tool

Platform	Creative Tool
ZEPETO	Build it
Fortnite	Unreal Engine
Roblox	Roblox Studio, Lua
Minecraft	Minecraft Education Edition

### 3.2 Avatars

Science fiction author Neal Stephenson emphasized the importance of avatars in the metaverse when he wrote, "A virtual world that can only be entered through an avatar (Internet-based 3D virtual world where various activities in real life are performed through avatar characters that symbolize 'me')". In a metaverse, an avatar is a virtual representation of the user, acting on behalf of the user. It expresses the user's identity and personality through its personalized appearance and characteristics, independent of the actual physical appearance of the user. Avatars allow users to interact with other users within the Metaverse, form social connections, and engage in a variety of virtual activities. Avatars provide users with a sense of immersion in the virtual world and enable experiences that transcend physical or social constraints. As such, avatars are an integral part of the Metaverse experience, becoming the primary means by which users express and experience themselves in virtual space.

The use of avatars in [Ready Player One] symbolizes the free expression of the individual within [Oasis]. In this content, avatars are more than just characters in a virtual world; they are used as a means to express themselves in a variety of ways. The main character <Parzival> is played by <Wade Owen Watts> and <Artemis> is played by <Samantha Evelyn Cook> and each of them is represented by their own avatar. In [Oasis] users can reconstruct themselves in a completely new way, free from many real-world limitations such as age, gender, race, and physical limitations. In addition to their own new personalities, collaborations with various characters are also prominently featured. King Kong, Godzilla, Traitor, Batman, Gandalf, and more. All of this is exciting and shows that virtual worlds offer endless possibilities for personal creativity and self-expression.

Even on current platforms, the use of avatars gives users the opportunity to explore new identities, appearances and abilities that are different from their real-world counterparts. These avatars are a means of individual expression and can reflect one's unique tastes, style and even fantasy elements. For example, Roblox is a metaverse platform primarily aimed at children and teens, where users can create their own avatars and create and play a variety of games. The avatars are simple but offer a lot of options to express the user's personality. Similarly, in the case of Fortnite, the metaverse environment is primarily game-centered, but avatars play an important role here as well. Users can purchase or earn various skins and accessories to personalize their game character. These avatars are used not only in-game, but also in non-game activities such as concerts by Travis Scott and Ariana Grande that utilize avatars. The use of avatars in the metaverse plays an important role in providing users with a means of free self-expression and enabling new social, cultural, and even educational experiences.



**Figure 3. Compare characters**



**Figure 4. Avatar collaboration**

### 3.3 Economy

The Metaverse's economic system is based on the trade of virtual currency and digital goods and services and is structured to allow users to purchase items or services and sell their own content. This system enables interaction between the virtual and real economies, including the ability to convert in-game currency to real money. Alongside this, cryptocurrencies and non-fungible tokens (NFT) are key elements of the metaverse economy. Cryptocurrencies enable transactions without the need for traditional financial institutions through their decentralized nature, while NFT ensure the ownership and uniqueness of unique digital assets. These economic systems blur the lines between the real and virtual worlds, opening up new possibilities for the digital economy.

The interconnectedness of the virtual and real worlds depicted in [Ready Player One] illustrates the current digital platform economy. The economic system of [Oasis] is based on <Credits> a cryptocurrency and economic activities in the virtual environment lead to revenue generation in the real world. This shows the possibility of digital economic activities beyond the constraints of time and space. A scene appears in which an item purchased with <Credits> acquired in the virtual world is delivered to the protagonist. This scene is a good example of how economic activities in the virtual world lead to the real world.

Among the current Metaverse platforms, Decentraland and Sandbox are representative examples where economic activities are active and the value of cryptocurrency is recognized. In the case of Decentraland, you can purchase, develop, and trade virtual real estate using a cryptocurrency called "MANA" based on blockchain technology. Similarly, in the case of Sandbox, a cryptocurrency called "SAND" can be used to purchase or trade in-game items. "MANA" and "SAND" can be traded for real-world currency on coin exchanges. In the case of NFT, Decentraland and Sandbox can convert various items such as real estate, land, avatars, equipment and their own content into NFT and guarantee ownership. Currently, we know that the economic system of virtual currency and metaverse platforms mainly exists in the form of circulation only within the game or among users within the metaverse. However, the growth of the Metaverse, the increase in value of coins, and the investment in NFT are already affecting the Metaverse economy even if you are not a user. This shows that the boundaries between the real world and the virtual world will be blurred in future economic activities.



**Figure 5. Receiving a delivery**

**Table 2. Cryptocurrency**

Platform	Cryptocurrency
Decentraland	MANA
Sandbox	SAND
Roblox	Robux
Second Life	Linden Dollar

## 4. Conclusion

The following is a summary of the metaverse content of [Ready Player One] and the [open world system] of the current metaverse platform. Previous studies have examined the universal characteristics of the metaverse in terms of diversity and have studied open world systems based on the importance of efficient user experience and influence. Looking at the current situation, the Metaverse experience is not easily accessible to users due to expensive equipment such as Oculus VR but considering the implications of the features of the open world system, it is as follows. If the open world system is utilized to allow free movement of avatars, worlds, items, etc. of each platform, and if the economic value of the platforms is integrated and a foundation is laid for common use across virtual worlds, it will have a significant impact on the scalability and development potential of the metaverse. This can be seen in the current case of [YouTube]. Before the advent of [YouTube] each media platform had its own formats and standards. In this situation, users had to cross different platforms to find the content they wanted, and content creators had to create and distribute content according to the standards of different platforms. The emergence of [YouTube] changed this market environment. [YouTube] quickly gained popularity due to its user-friendly interface, easy way to upload and share content, and wide reach. It created new opportunities for both content creators and consumers and redefined the way we consume digital media. The current metaverse world is characterized by metaverse platforms, each with their own specifications. The current metaverse world, like the media platforms of the past, has metaverse platforms, each with their own specifications. We expect that open world systems will allow for the free movement of various contents, and that standardized contents will be available on various metaverse platforms. With the advancement of VR technology, we look forward to the scalability of the Metaverse platform in the future with new changes utilizing the open world system, which is an integral part of the Metaverse. In this context, it is worthwhile to study [open world systems] with interest.

## REFERENCES

- [1] Kim, Seong-Hee, Yi, Sang-Wook "Discussing Metaverse Ethics with a Movie on Metaverse, 'Ready Player One'." Journal of Broadcast Engineering, 27(5), pp. 665-675, September 2021.  
DOI: <https://doi.org/10.5909/JBE.2022.27.5.665>
- [2] Ahn Jonghyeck, "A Study on the Metaverse and Virtual Environment -Focusing on 'Ready Player One'." Journal of Communication Design, 79(0), pp. 386-394, April 2022.  
DOI: <https://doi.org/10.25111/jcd.2022.79.27>
- [3] Hong-Sik Yu, "Recategorization of Characteristics and Types of Advanced Metaverses and Applicability to Communication Research." Communication Theories, 18(4), pp. 147-19, December 2022  
DOI: <https://doi.org/10.20879/ct.2022.18.4.147>
- [4] Hyo-Rim Son, " Investigating the Characteristics of the Metaverse Platform According to Functional Elements" Journal of Digital Contents Society, 24(6), pp. 1353-1360, June 2023.  
DOI: <https://doi.org/10.9728/dcs.2023.24.6.1353>
- [5] Miaoyihai Liu, Jehun Chung, " Research of popular success factors of game content <Genshin Impact>" The International Journal of Advanced Smart Convergence, 11(2), pp. 83-87, June 2022.  
DOI: <https://dx.doi.org/10.7236/IJASC.2022.11.2.83>
- [6] Jee Young Lee, " A Study on Metaverse Hype for Sustainable Growth" The International Journal of Advanced Smart Convergence, 10(3), pp. 72-80 September 2021.  
DOI: <https://doi.org/10.7236/IJASC.2021.10.3.72>