

Original Paper

Introduction of Metaverse to Our Lives and Unlimited Services in the World of Metaverse

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Abstract

Metaverse is a universe that combines our physical reality with the digital virtual world and goes beyond reality with multiple users with a permanent and lasting effect. The virtual world is based on digital people and objects and technologies that enable multi-sensory communication with people, such as virtual reality (VR) and augmented reality (AR). It provides highly professional communication in dynamic interactions between digital structures and real time. First, we encountered virtual worlds where avatars could teleport between them. Metaverse's resurgence has come with social, immersive VR platforms compatible with multiplayer online video games, open game worlds, and AR co-working spaces. Metaverse is a concept that offers opportunities to create virtual communities in the commercial or beyond entertainment world; It is seen that it is a new generation platform that includes the three-dimensional sandbox where metaverse enthusiasts can interact through their avatars and is expressed as the "digital big bang" in cyberspace.

Keywords

Metaverse, avatar, virtual reality, augmented reality

1. Introduction

When the coronavirus (COVID-19) entered our lives, our living conditions and the way we play began to differ drastically. The main reason behind this is that the virus has affected everyone and tried to quarantine and self-isolate so many people. The closure of people at home has caused them to interact more with technological tools. Metaverse gained momentum during this epidemic process and started to enter our lives more (Kerdvibulvech, 2022, p. 563). In fact, the perception of the metaverse is not a completely new perception. Collectively, Virtual and Augmented Reality, which constitutes a large part

of the technological basis of the “Metaverse” vision, has been envisioned since 1968, research has been conducted on this mental animation and it has been started to be implemented (Opperman et al., 2016, p. 213). William Gibson’s hit cyberpunk-novel “Neuromancer” was published in 1984, and the original meaning of the related word cyberspace was introduced there. In addition, the metaverse was the subject of science fiction writer Neal Stephenson for the first time in 1992 (Rheingold, 1991, p. 278). The first media paintings appeared in prehistoric times with cave paintings. Tragic and comic, the theater plays constituted identity-shaping, politically charged social procedures. As a depiction between physical and virtual realities, Plato’s allegory of the cave appears before us (Blascovich et al., 2011, p. 3). While cave paintings were media visuals at that time, virtual paintings began to form virtual personalities in our age. The point that technology has reached surprised everyone.

The concept of metaverse, which was announced with Facebook’s renaming as Meta in the past days, has become a revolutionary phenomenon. Mark Zuckerberg, CEO of Facebook, emphasized that “the next generation internet will be metaverse” and above existing social platforms. According to Zuckerberg, the metaverse will not be like going to the internet, but a world in which we will live (Laeq, 2022, p. 2). The sci-fi meta-verse shared with us is a huge universe of endless processes. According to Selina Yuan, who works as an international manager at Alibaba Cloud Intelligence, the meta-universe is designed as a three-dimensional virtual universe where users who enter the virtual world will be isolated from real life, interact with each other with the avatars they have created of their own choosing, and have all kinds of different experiences (Abbas, 2022, p. 10). Metaverse is a virtual reality simulation that can be used for all kinds of purposes, from entertainment, art and social platforms to education and business (Vitón-Castillo, 2022, p. 3). It is also designed as a potential platform for remote working and collaboration, allowing individuals to work together and exchange information in a virtual environment (Rojas et al., 2022, p. 4). In 2018, he published a book about Metaverse by Charlie Fink (Fink, 2018, p. 1). Based on all these, we see that the metaverse is both a very new concept and very old. While it attracts the attention of many researchers because it is such an interesting universe, it is a platform where many investors also invest.

In this study, it was written to examine the metaverse and all the systemic constructs built on the metaverse.

2. Conceptual Framework

Metaverse is a new economic and social fiction system that combines various online and offline digital platforms (Lee & Kwon, 2022, p. 17). In addition, Metaverse contains a technological ecosystem in itself. This ecosystem includes technology-based objects such as AR/VR/MR (Augmented Reality/Virtual Reality/Mixed Reality) and holograms. With these technologies, it is imagined that people will be able to come together in the Metaverse universe with their avatars in the virtual universe, to carry out many activities such as the opportunity to conduct business, shop and attend concerts together (Unal, 2022, p. 49).

Virtual reality (VR) and augmented reality (AR) terms are trending terms that have been spoken a lot lately. As technology is developing and developing, Augmented Reality and Virtual Reality are developing in different criteria. These concepts are actually terms with dissimilar differences.

We face AR/VR in an exciting time frame. First of all, we can start by learning what these terms mean (Kamenov, 2017, p. 3).

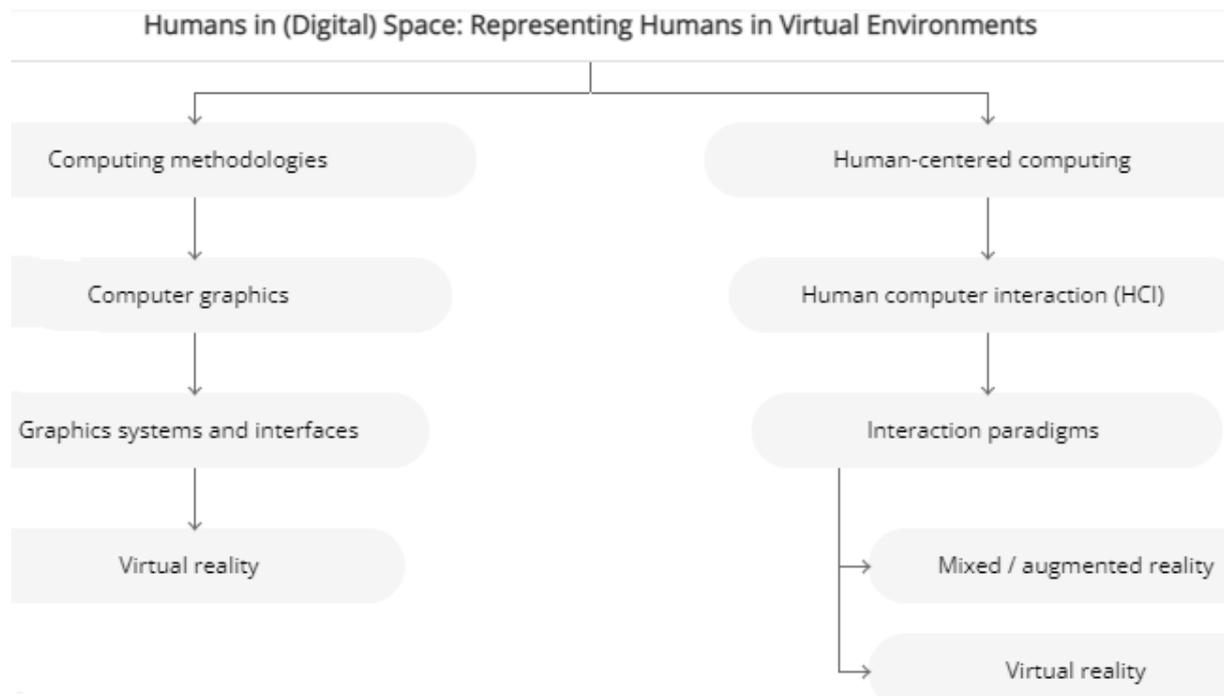


Augmented reality (AR) and virtual reality (VR) have emerged as rapidly evolving technologies that are used physically and in online retailing to enhance the selling environment and shopping experience. (Marnix et al., 2019, p. 49)

AR takes a different approach to physical environments; It carries digital contents and virtual objects to the physical environment in order to develop physical environments (Ibanez et al., 2018, p. 123). It combines the virtual world and the physical world as space. (Klopper, 2008) For example, smartphones, tablets, glasses, contact lenses (Mystakidis et al., 2021, p. 37).

Moreover, AR also appears in VR applications with pass-through mode by displaying the content transmitted from the integrated camera sensors (Speicher et al., 2019, p. 13)

Sekil 1: Humans in (Digital) Space (Lycett & Reppel, 2022)



Metaverse, which has a wide range of virtual world, has been prepared by making use of robot technology of many companies from all over the world, and by means of artificial intelligence, virtual reality or different technological supports, the transition from the physical world to the virtual world has been prepared. Changing economic leaps and changing perceptions in Turkey, it is predicted that the level of investment thrown toward the metaverse will jump from 800 million dollars to 13 trillion dollars by 2030 (Singh et al., 2022).

3. Basic Concepts About Metaverse

3.1 NFT

Nft is the name given to digital or physical objects by the people who find these objects, specific to blockchains. Being able to trade and carry out commercial transactions in the digital universe has started to happen through Nfts (Ante, 2021). NFTs can be exchanged for identical goods, such as money or commodities. Conversely, disproportionate objects cannot be exchanged for a similar good because their value is not equal to each other. To take an example from the analogue world, it includes objects of artistic or historical reputation or rare trade items with a long history of trade at all auctions and in different market areas. In the digital universe, selling and auctioning goods has been very difficult until now, as it is not possible to verify their authenticity. NFTs now pave the way for the digitization and trading of unique valuables on the Internet. In the short span of six months (until May 16, 2021), hundreds of thousands of NFTs worth more than \$800 million have been used. If we give an example about Nfts; Artist Beeple's selling his digital artwork for \$69 million, or Twitter CEO Jack Dorsey's desire to sell his first tweet for \$2.9 million are some of the important Nfts we've come across. FinTech, on the other hand, is a prominent application in the cryptocurrency system (Bao & Raobaud, 2022, p. 45).

3.2 Lot Systems in the Technological Field

Constant changes in technology have started to reveal new automation systems. Known as the Internet of Things (IoT), it consists of physical objects that use the Internet. Information is transmitted over the Internet to be accessed by users at any time and anywhere (Gangoiti et al., 2021, p. 11). Lots will make devices smarter than they are in the future, more powerful than they are, more effective and more ready than they are (Majumbar, 2019, p. 218) The equipment connected to each other in this system are hardware and software systems such as sensors, small engines, wearable machines, cloud. This network is currently used in various fields such as logistics, and smart cities.

Table 1. Metaverse Audience

Specialized	Type	Details
Game	Overview	1- Games are the most common and most popular applications in the Metaverse. 2- In the real world, games are separated from real life.
	Advantages	1-Metaverse can be similar to the real world and makes routine life a game. 2- By adding the game experience, everything presented in the game is reflected in reality. (for example, waypoints on the way to work)
	Challenges	1-Game rewards earned in daily life have important meanings. 2-It can be used not only for entertainment purposes, but also for solving academic problems. 3- It is also becoming a current market to move the currently used games to Metaverse.
Business	Overview	1-Metaverse is an area where organizations use their potential as a new market. 2-Multiple business models of companies generate income and advertisements in Metaverse.
	Advantages	1-Digital products require fewer processes and resources to make real products. 2-Users who are younger than the elderly can participate in economic activities. 3-Metaverse can simplify login interface for seniors (e.g., kiosk)
	Challenges	1-Metaverse enables social inclusion and commerce targeting seniors. 2-Businesses in the Metaverse thrive when security and privacy are guaranteed. Preservation of authored content, such as 3-NFT, is also an important issue.
Role-playing game	Overview	1-It is possible to interact 1:1 between avatars instead of 1:N broadcasts. 2-Metaverse provides easier access to celebrities. Avatar counseling for babies is effective for babies under a certain age.
	Advantages	1-Avatar provides psychological stability and honest response for patients. 2-Users can be treated gradually by adjusting the difficulty level of the therapy.

		3-The mask effect provides a more neutral, unbiased view and less external influence. (e.g., origin, gender, skin color, and appearance; jury participation)
	Challenges	1-Adverse effects (e.g., marital fraud, intimidation) also need to be monitored. 2-The protection of young people who hide with avatars is an important issue. 3- Institutional arrangements are needed to prevent over-immersion in the Metaverse.
Real Estate	Overview	1-The Metaverse has a region and some commercial activities are based on this region. 2-Some Metaverse apps (e.g., Earth2) sell their regions as properties.
	Advantages	1- Real estate investment in Metaverse has an impact on marketplace pre-purchase.
	Challenges	2-Investment is a prerequisite for stable and forward-looking platform. 3-Metaverse also needs space for business and it can be money. Estate in multiple Metaverse presents a new challenge in dealing with local values.

Source: (Dwivedi et al., 2022).

Digital Creation is the foundation of the metaverse. The process of existence is like the material products it brings with it. The use of the metaverse economy is decided based on what metaverse renderings require. Therefore, virtual creations is an online gaming platform that includes two different authoring tools to provide Decentral and applications that are sensitive to a particular authoring tool (Arnaud & Barnes, 2006) that can easily and personalize creation (Rymaszewski, 2007). Decentral and SDK users have the freedom they want to build their apps, while gamers can run a simple drag-and-drop through Builder without the need for growth.

The Digital Asset has hidden features that are essential to commerce. For example, in the FPS game Counter-Strike: Global Offensive, the player can equip their weapons with various “skins” whose “skins” are available in the asset properties, why “skins” can be exchanged or purchased (Lee et al., 2021)

The Digital Marketplace is where avatars trade for profit just like in the real world. The mature metaverse market, which must sustain the organisms and regulators of real trade in the metaverse, should be more elaborate than the existing virtual market. Burlakis et al. He began to examine the evolution of the family, that is, from traditional shopping to electronic shopping and observing the metaverse, and to show how the metaverse is known to this teaching (Bourlakis et al., 2009, p. 140)

Digital Currency is the medium in the metaverse where avatars will trade and end their exchanges.

While in the commodity universe, fiat currency cannot afford to be in the commodity center due to the high cost of fiat commodity building. external, fiat currency is converted from currency (e.g., gold, silver) derived from those different from the metaverse's virtual-based currency. Roblox allows players to purchase various content from other players by purchasing it with physical currency, from a recurring salary given to members with a premium membership, or by producing and selling virtual content on Roblox.

3.3 Creating Objects in Metaverse

After the definitions of artificial intelligence-based digital world fiction, authoring objects in the metaverse emerge as artificial intelligence-based authoring objects surpass human or all systems that have reached the level of education and provide technical support to roles. Authoring tools significantly improve the operational efficiency and intelligence of metadata storage. will affect.

1) Avatar and Non-Player Characters

The term avatar is derived from a Sanskrit word. It describes the manifestations of God Vishnu on earth. However, he was the first to represent users in digital worlds (Castronova, 2004, p. 175). Avatars are used not only in games, but also in e-commerce applications, virtual social environments, and geographically separated workplace meetings as the representation of users. (Springer, 2012)

3.4 Blockchain-Powered Authentication in Metaverse

Today, economic activities in the metaverse include the auctioning of digital assets, including land, scarce items, valuable real estate, land development and leasing, game-winning rewards, and proceeds from investing in cryptocurrency, as a prime example. For this reason, the metaverse establishes a new financing system inspired by both the physical and digital worlds.

4. Conclusion

The metaverse is seen as a clear integrated system connected to real life. Therefore, it requires equipment for the transfer and exchange of assets between separate metaverse worlds beyond virtual identities for both physical objects and the Metaverse. The term sovereign identity alone and the services of a blockchain provide unique services. Metaverse as a social medium for trading and owning property requires a notary and clearinghouse that easily performs together with compatible smart contract. Metaverse is not a new term. Thus, in the context of MR, it can bridge the connectivity of social media with the unique possibilities of VR and AR immersive technologies. Communication between each other is released through creativity, it envisions transforming multiple industry sectors into this system, even though it includes online education, not close but distance. Developed Meta-education models could emerge to allow for rich, hybrid formal and informal learning experiences in Metaverse-powered online distance learning, online 3D virtual campuses. Online learning in the Metaverse will be able to break the final frontier of social connection and informal learning. Metaverse is a very up-to-date and widely spread system. It is a structure that has a place in our lives and will show itself in every field in education and entertainment in our society with every

detail that will progress further.

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