

Metaverse is emerging!

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Abstract

Human beings being curious and experimental in nature always look forward to making good use of any technology and latest is Metaverse which is a combination of Interactive tools and Technologies like Digital Games, Augmented and Virtual Reality, social media, and Internet. This paper, which is based on literature review explains the Metaverse, its uses and challenges, discusses an example – PartyNite, and future scope of Metaverse.

Keywords: metaverse, ARVR, latest technology, applications of metaverse, challenges of metaverse, PartyNite.

Metaverso está surgindo!

Resumo

Os seres humanos, curiosos e experimentais por natureza, sempre procuram fazer bom uso de qualquer tecnologia e o mais recente é o *Metaverse*, que é uma combinação de ferramentas e tecnologias interativas, como jogos digitais, realidade aumentada e virtual, mídia social e *Internet*. Este artigo, baseado na revisão da literatura, explica o Metaverso, seus usos e desafios, discute um exemplo – *PartyNite*, e o escopo futuro do Metaverso.

Palavras-chave: metaverso, ARVR, tecnologia de ponta, aplicações do metaverso, desafios do metaverso, *PartyNite*.

1. Introduction

Metaverse is an old idea which is gaining new traction through online gaming and big tech's bet on virtual reality (Sparkes, 2021a, 2021b). A metaverse is a network of 3D virtual worlds focused on social connection (Casey, 2021). Metaverse, also known as "the world that is everything", is a blockchain-based decentralized platform. The concept of the Metaverse takes inspiration from the general principles of augmented reality (AR) and virtual reality (VR), but with a focus towards decentralization. Metaverse is a virtual environment with 3D avatars that can be accessed using web browsers.

It lets you interact with other people in the virtual world by means of text chat, voice chat, and video calls. Metaverse combines different technologies to make a digital universe. A metaverse is a virtually simulated digital environment where users interact with each other socially. It uses the technologies like Augmented reality and virtual reality to present a digital and physical world. The term "metaverse" originated in the 1992 science fiction novel "Snow Crash" written by Neal Stephenson and is a combination of two words "meta" and "universe." In this novel, humans are shown as programmable avatars, interact with each other and software agents, in a three-dimensional virtual space that uses the metaphor of the real world (Mark, 2014).

Author created a virtual reality-based successor to the internet – Metaverse (Casey, 2021). The metaverse is a persistent, online, 3D universe created by combining multiple different virtual spaces. It can be considered as a future iteration of the internet. The metaverse will allow users to work, meet, game, and socialize together in these 3D spaces (Biance Academy, 2021). Generally, the prefix meta- is used to mean about something. For example, "metadata" (data about data), "meta-discussion" (discussion about discussion), "meta-joke" (joke about

jokes) and "metaprogramming" (writing programs that write programs) (Wikipedia, 2022).

Metaverse is also related to Futurism which was an artistic and social movement that emphasized dynamism, speed, technology, youth, violence, and objects such as the car, the airplane, and the industrial city (Wikipedia, 2021). Millions of Ariana Grande (Famous American Singer) fans attended a string of concerts in 2021 which were held in a video game Fortnite. These huge events, complete with music and dreamlike 3D graphics, are the latest example of Silicon Valley's new favourite buzzword: metaverse.

According to Sparkes (2021), Metaverse is a shared online space that incorporates 3D graphics, either on a screen or in virtual reality. Science fiction author Neal Stephenson coined the term in his 1992 novel *Snow Crash*, which features a future virtual reality version of the internet called the Street: a 100-metre-wide road that runs around the 65,536-kilometre-circumference of a fictional planet. More recently, a metaverse called "OASIS" featured in the novel and film "Ready Player One" (Sparkes, 2021a,b).

Metaverse is not a very new concept. Linden Labs made a game "Second Life" (2003) with a virtual environment which was the perhaps first attempt to create Metaverse. It had around a million regular users at its peak. Second Life was no simple video game as it neither have pre-built conflict nor set objective – the two integral components of a game. There was nothing specific for a user to achieve – it was just an environment for exploring, mingling, and communicating.

It had its own currency and users could build property, organise events and design their own avatar. Long before American singer Ariana Grande's performance in Fortnite in 2021, Duran Duran staged concerts within Second Life in 2006, and later even opened their own headquarters within the virtual environment where fans could play themed games and watch content about the band. Other video game developers also have their eyes on becoming a metaverse. While metaverses and virtual reality have been there for years but were not in the reach of masses, the affordable and advanced hardware and software has made it popular.

Metaverse is emerging as a virtual platform for the real estate investment and other transactions like digital land, non-fungible tokens (NFTs) etc. Investors, individuals, and institutions are already showing great interest in this digital real estate.

2. Literature Review

2.1 PartyNite – India's First Metaverse

In India, Gamitronics, a Hyderabad-based game studio, has created a blockchain-powered Metaverse which offers playable NFTs. The company which is the pioneer in theme park, VR/AR and robotics/AI design is led by Mr. Rajat Ojha and has launched India's first virtual musical concert by famous singer Daler Mehandi in year 2022 on India's Republic Day (26th January) and later they created PartyNite which is considered as India's first blockchain-powered Metaverse.

PartyNite metaverse is a musical event where audiences can share their love life issues and experiences and the platform offer the solutions by playing popular or spontaneous songs according to the given inputs by the users. Daler Mehandi's concert got wonderful response across the globe. Metaverse is being considered as the future of the internet and PartyNite is created as a 'digital parallel universe' - a 3D Virtual World where people can socialize.

Here users can create customizable avatars, meet people, hang out with friends, join parties and events, play games, and earn NFTs all in a virtual world. They can even claim, mint, and sell playable digital collectibles also known as non-fungible tokens (NFTs). The success these two Metaverses has opened the avenues for a new platform of advertising. Mr. Rajat Ojha, CEO – Gamitronics says that "The times we are living in, Metaverse is the new Universe for a global outreach. It's a virtual environment where you can be present with people in digital spaces, it's like you no longer just watch content on the internet, but you are literally inside it, playing with it. The virtual platform will be a great avenue for introverts as you log in as an avatar and representation of flamboyance for already extrovert ones in ways not possible in real physical world.

The setting will support the event and one can expect a huge crowd logged in virtually at the same time. This is a fictional world focused on social connections. To make it more interactive we will be dropping select NFTs." Metaverse also opens the possibility of a parallel economy (ThePrint, 2022).

As per the news dated 19th April 2022, Telangana State's Government (in India) & ISRO are going to launch the state's Space-Tech framework at PartyNite Metaverse. Several metaverses are emerging lately where they are experimenting by hosting events and advertising (Sangani, 2022). PartyNite Metaverse platform is a seamless

combination of the physical and the virtual world. On Metaverse, one can have easy virtual access to the whole event not just as a viewer but also as an experience of being present live (Pynr.in, 2022).

2.2 Challenges of metaverse

Information privacy, user addiction, and user safety are the challenges of metaverse, arising from the combination of social media and video games (Rajan et al., 2018). Metaverse which is next to Gaming as it integrates Virtual or Augmented Reality and makes interactive experience richer and more immersive. Sometimes, this immersiveness could also be a negativity. It has blurred the lines between the physical and virtual realities (Ajmera, 2022). It is a new trend, yet to explore avenue, and there is a huge potential to tap this market.

The Metaverse offers many promises, and possibilities and many companies are developing immersive digital world in apps, products, and services using metaverse. Metaverse has a darker side also so we should look at the challenges that this technology might bring (Marr, 2022).

The metaverse is the next version of the internet where we use technology like augmented and virtual reality to immerse ourselves in the digital world. We already have privacy concerns on the web where our online behaviour online is on radar. Metaverse has more advanced features to read and record users' precise and personal data like eyes movements, gestures, behavioural patterns etc. This data can be used for marketing purposes (Marr, 2022). Metaverse require high-end technology (s/w and h/w) which is still not easily affordable.

There are no laws yet regarding Metaverse and there are possibilities of cybercrime. Children should be protected on metaverse since it is less protected space. There could be possible physiological and psychological health hazards because of Metaverse. Insensitivity could be another issue with Metaverse. When people will be exposed to things which are not acceptable in real life. For example, if someone can shoot in a metaverse, in real life also he or she might like to shoot. Another example is someone was on a high rise building and was jumping down from there but as soon as he or she jumps she is into another world. Such visuals sometimes could cause health problems.

2.3 Future of metaverse

After Covid, we all needed a space where people could come on a collaborative platform and this idea had its origin in Facebook to capture your digital identity. Just like our physical identity for example, Aadhar Card in India, Green Card in US, SSN Number etc. No one owns your digital identity so far. For example, Google identity can be used to run various services provided by Google, but nobody owns your digital identity. Facebook wanted to make your digital identity through 'Avatars' and wanted to own it so that when technology enhances in future and people would use VR Headset and Augmented Reality (AR), they are already well versed with web with their digital identity. In future, speed of internet will increase and more such applications will emerge. Facebook started an App called Horizon for such purpose. This was the basic reason for the origin of Metaverse.

Metaverse is going to rule the world in coming times. Covid era has taught almost to interact with each other virtually and Metaverse make these virtual engagements more realistic, engaging, immersive, and entertaining. Social events like weddings, obituaries, conferences, convocations, family functions, office meetings, exhibitions, job-fairs, trade fairs, etc. would be organised on Metaverse. There would be more use of Digital Currency in Digital Trade. This is something which need due monitoring of Government and regulatory bodies as there are great chances of fraudulent activities in cyber space.

In our physical world we require money either in the form of currency or digital currency to make payments to buy goods. In digital world, goods will be in the form of Non-Fungible Tokens (NFTs), and we would require cryptocurrency to purchase them. So, requirement originated when cryptocurrency came into existence and to purchase cryptocurrency goods came in the form of NFTs and to keep them all, we needed a space which we termed as Metaverse. That's why these three (cryptocurrency, NFTs and metaverse) are tightly coupled.

Metaverse depends on or uses Augmented Reality (AR), Virtual Reality (VR) technology for interactions in a 360-degree virtual space. You might have played games with 360-degree features but when we talk about Metaverse, we talk about endless features which were not there earlier like crypto is one such aspect, another is the features of collaboration. You can walk in spaces, read, can save. So, you are using the features of web 2.0 and web 3.0 and you can access it through AR using mobile device and you can access it using virtual reality

device or virtual reality headset. So, metaverse and AR, VR are also very tightly coupled. Originally, metaverse is made for ARVR but because of hardware and technical limitations of the end-users, the web has become the medium to introduce metaverse to people but down the line its application into immersive world through virtual reality.

In current use cases, Facebook is doing it through Horizon to transform office space, second use case is Decentralised land using small games. Instead of various collaborative platforms, we make a central space where people can come together, chat, talk, play games and can-do collaborative things. It is also being used in events. Down the line, it will be used for training which is included in virtual reality also. E-learning, training, and all those places where people need to communicate a lot and both are sitting far away, in all such cases, Metaverse will take a lead.

A VR headsets equipment is needed to enter the Metaverse. However, virtual worlds like Fortnite can be explored on PC without a VR headset. A true Metaverse is a continuous experience that combines elements from different platforms and brings audiences into one place. Some examples of Metaverse platforms are:

(i) Decentraland - he oldest Metaverse platforms is there since 2020 platform has digital land termed land parcels. The cost of land parcels is rising exponentially in this metaverse. In this, users can create, interact, and monetize their content and apps and can purchase virtual land (Tech Geek, 2022).

(ii) The SandBox is a a virtual megacity which was found in 2012 and introduced 3D and blockchain to the game in 2018, in 2021 it shifted to the Metaverse. It used own cryptocurrency SAND. The company is bringing different industries together like real- estate, showbiz, business, gaming, and film-industry (Tech Geek, 2022).

(iii) Horizon Worlds or Horizon is Facebook's metaverse which came in 2021. Currently, it is targeting at organizing virtual business meetings (Milyutin, 2022).

To make a metaverse, you need various talents like designer, 3D artist, animator, user-interaction (UI), and user-experience (UX) designer, interaction designer etc. Someone who understands spaces like Architect would be an asset because metaverse is about designing spaces. In 3D, we need all types of talents like modeler, texture artist, and animator. In development part, we need front-end and back-end experts if you are developing metaverse for the web but if you are making it for VR, then Unity or Unreal developers are needed. Thus, lots of resources are needed to make a good metaverse.

3. Conclusions

Every few decades, a platform shift takes place. For example, from mainframes to PCs and the internet, the evolution of mobile and cloud computing (Ball, 2022). John Hanke, the CEO of a tech company says that "digital technology shouldn't compete with physical reality, and that most people don't enjoy prolonged experiences inside virtual worlds. Metaverse should improve, rather than replace, human experiences" (WEF, 2022). Advancements in technologies which we use to access metaverse such as virtual reality (VR), augmented reality (AR), and brain-computer interfaces (BCI) will pave way for the growth of Metaverse (WEF, 2022).

Metaverse now seems a fancy technology but down the line, in next ten years, you will see Metaverse will empower the open-connected internet and open-connected world – the virtual world where there is no control of a central company, people can actually use internet for various kinds of things like for communication, for retail shopping, for other things and use of things like crypto, block chain with lot of openness. This is where we are heading towards using Metaverse.

4. Authors' Contributions

Niket Mehta: study design, scientific reading, conceptualization of topics, submission and publication. *Naval Joshi*: scientific reading, conceptualization of topics, and grammatical and scientific corrections.

5. Conflicts of Interest

No conflicts of interest.

6. Ethics Approval

Not applicable.

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