Chapter 1
Analysis of Metaverse Technology:
Is It Real or Virtual?

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ABSTRACT

Humanity has entered a new digitalization formation with the invention of the computer. The formation of digitalization has passed through many phases, but even today it shows its effect to a great extent. The establishment of network connections and provision of the internet for the use of humanity, wireless network connections, cloud computing, and cryptocurrencies comes at the very beginning of these phases. Today, the formation of digitalization has taken on a completely different concept from the metaverse and has taken the whole world under its influence. This chapter would provide detailed information about the metaverse universe with an overview on its advantages and disadvantages. Additionally, the possibility of taking the role of the real world will be evaluated by comparing the metaverse universe with the real world.

INTRODUCTION

Digitalization, which has become a part of our lives with computer science, affects humanity every day through its opportunities (Elmassah and Hassanein, 2022), which are the internet, cloud computing, internet of things, and blockchains as the leading technologies with such effects. With these opportunities, communication, data storage, and device controls have become much easier. Thus, all sectors started to keep up with this digitalization and adapted their sectoral activities to digital platforms (Mustapha et al., 2021; Nižetić et al. 2020; Oliveira et al., 2020). Some of the leading sectors are enterprises, educational institutions, government institutions, entertainment, and banks. New industry models and brand-new concepts have entered our lives due to the digitalization such as e-government, e-commerce, and online education.

As mentioned above, digitization, with its significance influence on our lives, has gained a completely different dimension with the concept of the metaverse. Metaverse not only affected the world that we live in but also changed the world by turning it into a completely different one.

In fact, the metaverse may seem like a new concept, but it's not. Although far from its current meaning, the metaverse word appeared in 1992 in a fiction novel called "Snow Crash" by science fiction writer Neal Stephenson (Stephenson, 2003). Novel, explains metaverse as a massive virtual environment parallel to the real one (Joshua, 2017). In the novel, the metaverse is called "Oasis" and users interact through digital avatars like today's metaverse (Damar, 2021).

The definition of metaverse is "the concept of a fully immersive virtual world where people gather to socialize, play, and work" (Laeeq, 2022). Shortly, the metaverse is a "layer between humanity and reality".

Stephenson, Metaverse is a virtual space, combining virtual reality (VR), augmented reality (AR) and the internet. (Murray, 2020). Addition to AR, VR, internet, today's metaverse concept consists of blockchain, NFT, and Web 3.0 (Mystakidis, 2022).

As mentioned above, today's metaverse is 3D virtual world platform where users can do any activity with the help of AR and VR services (Yonhap News Agency, 2021). Such platforms became popular in the last decade and people started to shift their activities to online platforms. Especially, COVID-19 which entered into our lives in the beginning of the 2020, online platforms are much more popular with the pandemic curfew (Gaubert, 2021; Harapan et al., 2020).

Even COVID19 couldn't make the metaverse popular but the statements of Facebook's CEO Mark Zuckerberg at the Facebook connect conference made the metaverse popular. According to Zuckerberg's description, the metaverse is "a virtual environment where any user can present himself/herself using the possibilities of digital spaces. You can think of it as an embodied Internet." Besides this, Zuckerberg described that "metaverse will be the next generation of the internet after the rise of mobile web and the smart phones." According to this claim, Facebook is rebranding itself as a Meta. After this statement, the eyes and attention of the whole world were turned to the metaverse (Zuckerberg, 2021; Díez, 2021).

METAVERSE

Metaverse which is "Snow Crash" in 1992, is still a complex and incomprehensible concept. In the novel, the writer explains this virtual world as a shared that the mixture of VR, AR, and the internet. Today's concept of metaverse has a structure similar to the novel (Stephenson, 2003; Damar, 2021).

Metaverse is the combination of the prefix "meta" (Greek prefix meaning post, after, or beyond) with the word "universe", which describes a hypothetical synthetic environment linked to the world. In other words, the Metaverse is a permanent and persistent multi-user environment, which is a post-reality universe that mixes digital virtuality and physical reality. (Mystakidis, 2022).

Shortly, metaverse is a virtual environment that blends physical and digital with the convergence between Internet technology and Extended Reality (XR). According to researchers (Milgram et al., 1995), XR integrates digital and physical to various degrees, such as; augmented reality (AR), mixed reality (MR), and virtual reality (VR).

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