

Chapter 11

Metaverse Concepts and Marketing

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ABSTRACT

Metaverse is a virtual reality world where users can interact with each other, buy and sell things, and fulfil their dreams through virtual reality or augmented reality. This technology allows people to participate in social activities and entertainment like never before, providing a different dimension of participation, socialization, and digital living space. In the development process of technology, social media has changed the habits of use and involvement, and this change has revolutionized many areas, from personal space to commercial applications. This chapter reviews and discusses metaverse concepts and marketing. The study findings show that metaverse offers businesses a new way to reach their target audience. Integrating the metaverse into future marketing strategies will be the way forward and for the brand to exist for a long time because metaverse offers brands of all kinds the chance to seamlessly combine the accessibility and convenience of the digital world with the immersive experiences of the physical world.

INTRODUCTION

Metaverse, one of the essential concepts that have entered our lives in recent years, is expected to precede the internet revolution in the future. The Metaverse is a three-dimensional virtual universe where people interact with each other through their avatars. The real world is a metaphor in this immersive universe, and there is no physical limitation (Chalmers et al., 2022). Therefore, the Metaverse is a new visual world that combines the physical and digital worlds (Zhao et al., 2022). Metaverse is an environment where people experience augmented reality, virtual reality, mixed reality, and extended reality together. It will be a turning point in our lives when users can have fun, socialize, shop, play games, chat with their friends, spend time and navigate easily with their avatars in this three-dimensional virtual universe. With Web 3.0, based on the concept of decentralization, it is predicted that storing our records on the blockchain, not on a single server, will move many stones.

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Metaverse is a virtual reality world where users can interact with each other, buy and sell things and fulfill their dreams through virtual reality or augmented reality. Marketing success in today's digital age is about more than embracing modern technology and making the most of it. It is also about keeping up with upcoming developments such as metadata storage. In the marketing context, Metaverse can be defined as a permanent, 3D virtual space where users can spend their time while being used as a target with brand-related content and sales activation tactics (Yazıcı, 2022). Metaverse's proposal for marketing is to provide exclusive access to consumers who primarily value innovation, using technologies that combine virtual reality, augmented reality and mixed reality in addition to artificial intelligence as part of their digital marketing strategy (Yassin, 2022). Metaverse marketing allows brands to maximize their creativity and reach their target audience in the most compelling way. That's why, one by one, brands are turning their faces to the Metaverse world for digital marketing.

Along with the importance of digitalization, businesses are also developing their virtual market strategies. Dominating the virtual markets necessitates changing the known and conventional methods. The most challenging situation in this regard starts with overcoming consumers' trust problems. Businesses' products or service supply should be shaped according to consumer purchasing behavior. In this context, companies must first understand the importance of digitalization and then develop new business methods. In line with this information, the necessity of planning the steps businesses need to take emerges. Many factors (social, psychological, economic, personal) affect the purchasing behavior of consumers, and the most determinant of these factors is seen as psychological factors. Using the advantages of technological developments has an advantageous effect on consumer behavior. Especially with the understanding of post-modern consumption, the demands and expectations of consumers differ. The most critical rule brought by this differentiation makes it necessary to develop new simulations compatible with change (Çelikkol, 2022). In the Metaverse world, businesses' adoption of immersive technologies are expected to cause significant changes in consumer behavior. Following a specific plan for this will accelerate businesses' entry into the Metaverse. The behavioral responses of consumers will depend on the method businesses use. Therefore, Metaverse is a determinant for exchanging virtual world elements with consumer behavior (Shen et al., 2021).

This section aims to explain the important concepts frequently used in Metaverse such as augmented reality, virtual reality, mixed reality, extended reality, blockchain, cryptocurrency, non-fungible token, Web 3.0, mirror-world, meatspace, digital twins, multiverse, internet of things, avatar, human computer interaction, three dimension, artificial intelligence, massive multiplayer online game, non-player character, digital identities, lifelogging, smart contracts. In addition, Metaverse marketing, consumer behavior that will change with Metaverse, and brands entering Metaverse will be examined and marketing strategies for the future will be explained. Thus, it is aimed to contribute to the literature by understanding the concept of Metaverse in detail, which is rapidly expanding its awareness and usage area, and to be a guiding study for brands to start their marketing studies.

METVERSE

The concept of Metaverse was first introduced by Neal Stephenson in 1992 with the novel "Snow Crash". In 2003, software developers inspired by Snow Crash designed a game called "Second Life". In the game, everyone has an avatar as a cartoon, and the players communicate with each other in virtual environments (Hollensen et al., 2022). Within the game, some activities are similar to reality, such as conversations,

physical interaction, trade, and construction that should be in society (Lv et al., 2022). Metaverse is a combination of the words meta and universe. It is expressed as a new internet generation where users can communicate and interact with each other through avatars and special software (Duan et al., 2021). Metaverse, in other words, is also defined as convergence. This convergence: creates a virtual enhanced physical reality and a physically permanent virtual space, allowing users to experience both simultaneously (Kutlu, 2022). The concept of the Metaverse is used to express a virtual universe based on daily life where both the real and the virtual coexist (Akour et al., 2022). It describes three-dimensional structures in which avatars in this universe engage in political, economic, social, and cultural activities (Park & Kim, 2022). Metaverse, which refers to this entirely or partially virtual universe where individuals can live under the rules defined by their creative ideas, is the post-reality universe that combines physical reality and digital virtuality with permanent, permanent, and multi-user features. The virtual universe stages effectively reached the augmented reality dimension of this universe (Hwang & Chien, 2022; Mystakidis, 2022).

The biggest misconception about the Metaverse is that there is only one Metaverse. However, there is not only one Metaverse, and any number of Metaverses can be created. Today, companies have Metaverses of different sizes and various features. Metaverse is a new world where three-dimensional visuality is more important, and the real world and virtuality are blended. That is why an umbrella is used as a concept. Platforms such as Horizon, Roblox, Fortnite, The Sandbox, Alien Worlds, Decentraland, Zepeto, Somnium Space, Axie Infinity, My Neighbor Alice, Hyper Verse, Super World, and Star Atlas can be given as examples. In Metaverse, people can be represented virtually with their avatars, socialize, buy and sell products, services, real estate, and land, and share with users (Akkus et al., 2022). It is also possible to pay, watch concerts, attend exhibitions, shop, visit museums, verify identity, and conduct recruitment interviews in the Metaverse world. Metaverse is not an independent world parallel to reality and can replace reality, but a symbiotic world intertwined with real life. It is a choice created not to separate the real from the virtual but to complete the reality with the virtual (Pu & Xiang, 2022). Metaverse combines the real and virtual worlds with various technological tools and software. It offers the option to customize them by creating avatars, participating in various social activities, financially acquiring virtual property, and recording them with tools such as NFT, blockchain, and trade. It can be defined as a vast network of interconnected virtual worlds rather than a single virtual world, designed to complement reality with virtual, offering the sense of an immersive three-dimensional experience where profits can be made (Özel, 2022).

The structure of Metaverse allows the presentation of the current information status to all users at the same time at all times. Therefore, it is a persistent virtual system with real-time computing capabilities. Metaverse, in terms of computer architecture, is a decentralized platform that offers a high degree of interoperability to enable the mobility of digital identities, experiences, and properties from one place, event, or event to another. It is also possible for users to develop their perceptions and assets. From the sensory point of view, it increases human interaction and makes human qualities more realistic (Efendioğlu, 2022).

It has been stated that the Metaverse consists of three structures for its architecture. These; are infrastructure, interaction, and ecosystem. Metaverse facilitates convergence between internet technologies and extended reality (Duan et al., 2021).

Infrastructure describes the multimedia system corresponding to the data storage and computation required for the virtual universe. On the other hand, interaction refers to the inclusion of users from the physical world into the virtual universe through their avatars. For this, an immersive user experience and

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content must be created. An immersive user experience is made possible by digital twins. Thus, users can interact within the virtual ecosystem through their avatars. The ecosystem consists of user-generated content, artificial intelligence, and the economy. User-generated content is necessary for the economy to function. Thus, it will be possible to create a vibrant community (Gadekallu et al., 2022).

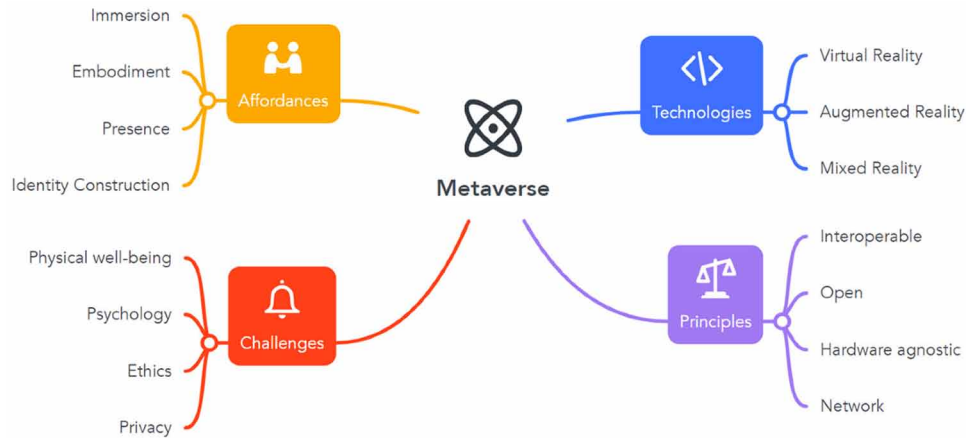
The long-term Covid-19 pandemic has dramatically changed the way people live and work. Various online meetings and activities have gradually replaced face-to-face meetings. Such virtual events and events encompass the concept of Metaverse, attracting interest in academia and industry as of 2019. With the Covid-19 pandemic, the spread of remote and hybrid work in the public and private sectors, the increase in the use of digital communication technologies, and the fact that the events organized in the Metaverse have begun to be seen can be considered as an indicator of the place of virtual communication and virtual universes in people's lives (Han et al., 2021).

Although the idea of Metaverse has existed for thirty years as a speculative fictional narrative in which users are represented as avatars in disconnected virtual spaces, it has recently come to the forefront with Facebook's rebranding as "Meta" (Bibri et al., 2022). Furthermore, after Mark Zuckerberg announced in October 2021 that he started working to focus on integrating Metaverse into daily life, the word Metaverse became the most searched word in the last quarter of 2021 (Google Trends, 2022). The fact that an American couple created an avatar and participated in the first wedding held in Metaverse with their avatars, likewise holding concerts and organizing events in Metaverse, can be counted among the factors that increase the interest in the idea of Metaverse.

Metaverse offers many affordances. These are immersion, embodiment, presence and identity construction. Metaverse provides these with avatars. This creates a superior sense of self as participants control their own avatars. Because it reflects the freedom of self-expression of users and looks human-like gives them confidence. On the other hand, there are some challenges encountered in Metaverse. These are physical well-being, health and safety, psychology, morality and ethics, and data privacy. On a physical level, apps distract users and cause harmful accidents. In addition, information overload is a psychological problem that should be prevented. Morally, it leads to unauthorized magnification of preconceived views and manipulation of facts. Finally, data poses many risks in terms of privacy. The basic principles of Metaverse are based on interoperable, open, hardware agnostic and network (Mystakidis, 2022). Metaverse technologies offers consumers a very realistic experience. Users can experience mixed environments via headset, phone, or tablet. It can also interact by placing or moving digital objects into the physical world. Thus, with mixed reality, real and virtual objects are mixed and presented on a single screen. Technologies is the fusion of virtual and augmented reality to create new environments and visualizations where real and virtual objects coexist in real-time (Flavián et al., 2019). Metaverse affordances, challenges, technologies and principles are shown Figure 1 (Mystakidis, 2022).

Different platforms such as Decentraland, The Sandbox, Superworld, Somnium Space, games such as Roblox and Fortnite exist with their own platforms. While the number of platforms participating in the Metaverse universe is increasing day by day, many global brands operating in real life, from cosmetics to clothing, from automotive to food, have also started to take place here with their own platforms or by collaborating with existing platforms. Some big global brands that take a proactive attitude, that is, take a position and take action in the face of new developments, have started marketing, advertising, and brand communication activities on the Metaverse platform (Efendioglu, 2022).

Figure 1. Metaverse technologies, principles, affordances and challenges



METAVERSE CONCEPTS

Augmented Reality (AR)

AR is a real-time display of computer-generated content on a real-world scene. With AR, an experience emerges where virtual elements are added to the real world (Shen et al., 2021). AR is a real-time interactive, three-dimensional system formed by superimposing a virtual component on a real space or object (Azuma, 1997). In other words, AR is the process of superimposing computer-generated information on reality, whether it is a geographical location or an object. Users benefit from tools such as smartphones, cameras, and wireless wristbands to perceive both reality and information presented virtually (Çelikkol, 2022). An image processed in AR is superimposed on a real-world image. With the world-famous mobile game Pokémon GO, which made AR widespread, players are walking around. During this ride, players capture computer-generated monsters using AR. AR can be viewed through smartphones and tablets, providing users with an interactive creative experience. Today, a navigation system is installed on vehicles with AR. Simulated arrows on the glass direct the driver to exactly where to turn. In this way, the driver does not need to follow the map; it is sufficient to follow the arrows superimposed on the road view. On the other hand, AR is the blending of digital with reality, designed to increase the user’s experience or understanding (Berryman, 2012).

A concept called Augmented Reality Marketing (ARM) has also emerged with the emblem of AR’s use in the marketing field. It is a new concept for today, and studies on it continue. ARM’s customer experiences differ from traditional marketing (Chylinski et al., 2020). Within ARM, some strategies and examples can be applied to different sectors. For example, customers of a make-up brand can wear AR glasses and apply make-up to themselves in a virtual environment and see how they look. Wearable technologies and ARM offer powerful possibilities to maximize the experience of consumers (Rauschnabel et al., 2022). At this point, the use of neuro-marketing will bring a distinct advantage. By observing the movements of the avatars with the help of virtual reality equipment, and using body temperature and heart rate monitors, the reactions of individuals can be measured. Improvements and arrangements can be made in marketing and brand communication applications accordingly (Çelikkol, 2022).

Virtual Reality (VR)

VR is an artificial environment experienced through computer-provided sensory stimuli, such as images and sound, where one's actions partially determine what is happening in the environment. VR technology aims to integrate users with a completely artificial environment with various forms of technology to appeal to one or more senses (Scavarelli et al., 2021, p. 258). VR is the technology that enables the person to interact with the artificial three-dimensional visual and sensory environment using computer modeling. With the advanced technological methods used, the user is isolated from the physical environment. Thus, it can enter interactive and immersive virtual environments with computer simulation. So VR is the experience of fully immersing in a different environment to interact with virtual objects. VR headsets should be worn to experience VR (Shen et al., 2021). Recently, VR technologies have made environments look like the real world. For example, additional senses such as touch, sound, and smell are added to VR. Using VR technology, players can manipulate a video game with all their senses while architects review building projects before starting construction. The difference between VR from AR. AR enables embedding visual elements and sounds in a real-world environment to enhance the user experience, while VR is purely virtual and sensorial and enhances fictional realities. AR can be accessed with smartphones, and users can control real-world assets. In contrast, VR-specific headsets and glasses equipment is required.

VR allows users to access the Metaverse by bridging the apparent gap between the physical and digital worlds. Users provide experiences through digital selves or avatars. Metaverse can incorporate augmented reality and virtual reality to allow users to experience the experience of being inside the internet, digitally interacting with other individuals, objects, entities, and environments. In the Metaverse, it can be said intuitively that the soul is outside the body. Assuming that the body is viewed as a shell of our consciousness, the Metaverse allows us to break the physical and natural world with the body as the boundary and integrate human consciousness into the virtual computer world through a brain-computer interface (Bal, 2022).

Metaverse VR glasses, which are examined as examples of head-mounted displays and wearable technologies, are among the essential digital devices in the world. The ideal goal of display development in AR and VR devices is to deliver lifelike crystal clear images that can simulate, merge or recreate the surrounding environment and avoid disturbance simultaneously (Zhan et al., 2020). By observing the movements of the avatars with the help of virtual reality equipment, and using body temperature and heart rate monitors, the reactions of individuals can be measured. Improvements and arrangements can be made in marketing and brand communication applications accordingly (Çelikkol, 2022). It will take time for virtual reality products to become widespread, as the market is still tiny. In addition, these products are expected to be easy to use, affordable, stylish, and ergonomic. However, it is necessary to strengthen technological infrastructures so that hundreds of millions of users can simultaneously connect to Metaverses with high data (Topsümer & Toktop, 2022).

Mixed Reality (MR)

MR refers to the combined use of augmented and virtual reality technology (Tayfun et al., 2022). It can also be defined as the intersection between two extremes of mixed reality, realistic and unrealistic (Park & Kim, 2021). AR and VR apps may be the most popular way to experience the Metaverse, but these apps are only one way to access the Metaverse (Ball, 2022; Park & Kim, 2022). MR is the dynamic

coexistence of virtual and real content in the same space. Physical and digital objects both coexist and interact in real-time. Real and virtual worlds can merge to create new environments and visualizations with MR (Shen et al., 2021). Mixed reality combines the physical and digital worlds, linking computer and environmental interactions. Its infrastructure includes computer vision, graphics processing, imaging technologies, and cloud computing. MR is beneficial for consumers and businesses. By adding virtual objects or characters to a live video stream of the real world, MR provides the user with an experience where both environments can seamlessly coexist and interact (Farshid et al., 2018, p. 660). Thanks to glasses and wearable devices that support MR technology, a movie or a football match can offer a holographic and three-dimensional experience that can be entered into the moment without the need for any screen.

Major factors expected to drive the growth of the Metaverse market include media and entertainment, increased demand in the gaming industry, and opportunities and partnerships from virtual markets. Furthermore, digitization in MR, art, fashion, and retail is increasing scope, reach and offerings to industries and end users. In addition, the meta database for promotions of brands using gamification and virtual world simulators creates a growing increase in restructuring state-of-the-art infrastructure design (Yazıcı, 2022).

Extended Reality (XR)

Extended Reality includes AR, VR, and MR technologies. The technological interaction between humans and machines begins at the point of Extended Reality (Shen et al., 2021). Thanks to extended Reality, it is possible for people to use multi-sensory wearable technologies (Mystakidis, 2022). Metaverse is recognized as one of the technologies with the most significant potential for the future. In Metaverse with Extended Reality, people can participate in activities such as discussing a topic, collaborating on a project, and learning by experiencing some problems. A person's friends in the Metaverse can be real or virtual characters. Like in the real world, various activities can occur in the Metaverse, such as economic activities, political events, and natural disasters (Hwang & Chien, 2022). High-quality Extended Reality is becoming more and more common. Consumers worldwide enjoy Extended Reality experiences ranging from immersive gaming to distance learning and virtual education. One of the trends in recent years is to broadcast Extended Reality experiences via 5G from the cloud. This eliminates the need to depend on servers or limit experiences to just one domain (Singh et al., 2021).

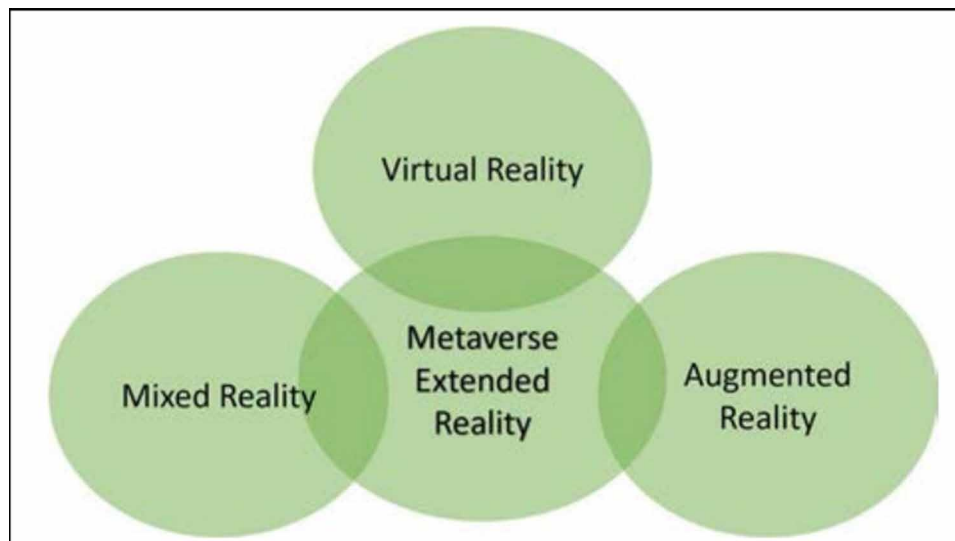
On the other hand, XR can be expressed as an umbrella term covering all VR/AR/MR technologies. In the last five years, XR has become a technology that has received significant interest in the scientific and industrial world, as technological developments have led to the development of more economical and ergonomic devices and allow to use of significantly more powerful software than previous generations (Çöltekin et al., 2020). Furthermore, the simulation capability offered by XR technology, which can be defined as the creation of an artificial but highly realistic form of a system's model (Maria, 1997), can be considered a kind of training ground (Kaplan et al., 2021). Metaverse handles different using AI and reality techniques. Figure 2 shows the extended reality in Metaverse (Mozumder et al., 2022).

Reality covers all realities from an umbrella perspective in the Metaverse environment. Therefore, it covers all virtual and real environments realized with computer technology and hardware. Along with the perception of mixed Reality as computer technology, it is also possible to express it as an experience that distinguishes between the simulation and the physical to the individual indistinguishably, with hardware wearable technology. In marketing, the virtual environment provides a competitive advantage in

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experiencing products and services and ensuring the interaction between the producer and the consumer. This brings a new perspective to marketing strategies as a force that ensures sustainability..

Figure 2. Metaverse extended reality



Blockchain

Blockchain is a digital, decentralized, and distributed ledger where transactions are recorded and added chronologically to create permanent and unauthorized access-protected records. Blockchain securely records transactions related to money, property, information, and authorization rights without needing a third-party intermediary such as a bank or government (Peres et al., 2022). Blockchain, not only financial transactions but also attributed value; It can be applied in many areas to record almost everything, such as education information, health reports, birth, and marriage records (Kahraman, 2022). A blockchain is a distributed database shared in ledgers between the ends of a computer network. This database stores information electronically in digital form in ledgers at each endpoint. Each block in the chain contains all transactions made. If a new transaction occurs on the blockchain, this transaction record is added to the ledger of all participants. Deletion and editing are not possible. Blockchain technology; has essential features such as decentralization, permanence, anonymity, security, and suitability. In addition, blockchain technology is becoming compatible with next-generation internet interaction systems such as smart contracts, utilities, IoT, and reputation management (Zheng et al., 2018).

Blockchain technology stores, processes, shares, and determines the originality of the metadata formed in the Metaverse. For example, blockchain technology will come to the fore in voting, determining ownership, creating an economic structure, and processing health data in the Metaverse environment. Metaverse's technologically fundamental infrastructure is vital because it is based on the decentralized blockchain without needing third-party providers. Blockchain technology is necessary for data security and economic transactions to continue securely. Therefore, Metaverse is expected to establish assertive communication with the real-world economy. Blockchain technology has also become the most signifi-

cant guarantee of copyright in the digital world. Blockchain is needed because it primarily secures the digital content owned by all users in the Metaverse. Metaverse relies on the blockchain to ensure user integrity, privacy, and reputation and to account for their content and transactions (Gadekallu et al., 2022).

Cryptocurrency

Cryptocurrency is encrypted digital assets created only in the digital environment and traded in the digital environment. The first cryptocurrency is Bitcoin, which was released in 2008. Following the success of Bitcoin, several alternative cryptocurrencies known as altcoins have emerged rapidly. The most used cryptocurrencies; It is known as Bitcoin (BTC), Ethereum (ETH), Binance Coin (BNB), and Tether (USDT). However, Bitcoin is the most valuable among these cryptocurrencies because it is produced in a certain number (Wu et al., 2022, p. 3). Bitcoin is a cryptocurrency designed for anonymous payments created independently of governments and banks (Segendorf, 2014). Blockchain is formulated to create cryptocurrencies like Bitcoin (Zheng et al., 2018).

For the characters to design a world of their own in the Metaverse universe, they will need land, property, materials, and inventory that will enable them to build this property. As a result, all these services have a monetary value, if not in a physical sense. Here, cryptocurrencies regulate the relationship in the Metaverse ecosystem and the economic relationship between the real world and the Metaverse. For this reason, Metaverse projects directly encourage investing in cryptocurrencies. Furthermore, a Metaverse cryptocurrency received is also a key to the door to that universe. From this point of view, the most severe cryptocurrencies working on the Metaverse universe are Decentraland (MANA), Sandbox (SAND), Theta Network (THETA), Axie Infinity (AXS), Enjin Coin (ENJ), CEEK VR (CEEK). These Metaverse coins are also an alternative to Bitcoin and the largest altcoin, Ethereum (Toktay, 2022).

Non Fungible Token (NFT)

NFT is a digital asset trading with cryptocurrencies, and its infrastructure is based on the blockchain. NFT secures assets as royalty. All items that need copyright have been converted to digital, such as artwork, music, games, images, or videos. Because NFTs have unique and unique properties, they cannot be changed. NFT is a cryptocurrency derived from Ethereum's intelligent contracts (Wang et al., 2021). NFT is an encrypted, unchangeable, unique, and original asset that cannot be used interchangeably on the blockchain network. NFTs are transferable rights to digital assets such as art, in-game items, collections, or music. NFT secures the selling prices of intellectual property-related products and non-tradable virtual assets (Ante, 2022). In line with these explanations, it seems possible to express NFT as a fingerprint that has a different structure from each other.

NFT, a part of the Ethereum blockchain platform, is mainly used in Metaverse, which is offered to users. NFT is a type of technology that proves that any digital media is unique. NFT, which stands for the immutable digital asset, is a unit of data stored in a digital ledger called a blockchain, which confirms that a digital asset is unique and, therefore, not interchangeable. For example, the global gaming industry is valued at \$300 billion, with \$200 billion in direct spending and \$100 billion in indirect revenue. Metaverse and blockchain-based games use NFTs to offer players a different experience. Thus, digital property is brought to the fore, and new business models and opportunities to earn money are created using crypto money (Rijmenam, 2022).

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All marketing authorities agree that the metaverse universe will create an economy worth trillions of dollars due to its unique products and services. Digital objects such as NFTs will form the cornerstone of the Metaverse economy. It will be possible for an avatar to meet virtual hardware, virtual wishes, and needs, or to engage in some virtual activities, by using NFTs or other digital objects that it can buy according to its economic power (Anıl & Alankuş, 2022).

Web 3.0

Metaverse is the next phase of digital evolution and could revolutionize the internet space at a significant level. This is why most services can go beyond standard systems with online access (Gadekallu et al., 2022). When the Internet first emerged, all interactions with the user with Web 1.0 were text-based. For example, emails, messages, and usernames are text-based, and the user cannot edit what is written on the website. The internet user is just a reader. Agents in Web 1.0 were servers. We needed servers to interact with someone. In Web 2.0, these servers have been replaced by platforms, and we have come to communicate only by registering. Then the multimedia-based Internet emerged. These; include photos, videos, and live broadcasts. Now, users can add and edit multimedia on the Internet, thanks to Web 2.0 technology. Finally, in the next step of the user experience on the Internet, a different dimension was introduced with Web 3.0.

Web 3.0 is the idea of being decentralized without being dependent on a service provider. Metaverse represents the world, the three-dimensional layer introduced with Web 3.0. The creation of economic value by blockchain technology and virtual currencies without being dependent on any authority can only become possible and operational with Web 3.0 technology. For this reason, Metaverse needs Web 3.0 technology to ensure the coexistence of digital worlds (Çelik, 2022).

The early Metaverses of Web 3.0 are predominantly virtual games where users own and trade digital assets such as land, fashion, and NFT (Murray et al., 2022). Web 3.0 will allow for a decentralized connection without any intermediaries. Again, cryptocurrencies with a decentralized system have recently become a viral subject. This brought the possibility of Web 3.0 to the agenda again and led us to an involuntary expectation. This new internet network is called the semantic network. In the Web 3.0 system, people can carry out this information entirely by connecting two people. Web 3.0 refers to the entire blockchain-supported and personalized version of the Internet that can be used as Peer to Peer.

It is a prerequisite for the Web 3.0 Metaverse. Because Web 3.0 will reveal a new social contract around data and identity. Building Metaverse on the Web 3.0 infrastructure will allow it to move away from corporate surveillance. Of course, this will reduce the risk of data falling into the wrong hands to a certain extent and allow people to have complete control over their data and identities (Rijmenam, 2022). Metaverse provides an embodied user experience with real-time and dynamic interactions with digital artifacts as it connects multi-user platforms. (Mystakidis, 2022). On a closer look, Metaverse and Web 3.0 are quite relevant entities. Web 3.0 will be an infrastructure for Metaverse. VR devices to be used for Metaverse can accelerate the transition to Web 3.0. This process can be easily achieved if an open-source system, a reliable infrastructure, and verifiable communication methods are provided.

Web 3.0 is a decentralized network centered around the idea of being user-centric, offering unprecedented levels of security and privacy to user data. This web is an internet based on blockchain technologies, basically defined as a decentralized and distributed permanent digital ledger, with various cryptocurrencies that are predominantly created and traded digitally only and immutable NFTs, each of which is different from the other (Nath, 2022).

Mirror-World (MW)

The metaverse proposes 3D surroundings via glasses, headsets, and connected watches. Consequently, the metaverse is both a mirror of reality and a new universe, allowing the formation of an advanced reality with imaginative scenarios. Professionals call this digital copy of reality the mirror world. Modeling the physical world, MW captures, stores, analyzes, and manages reflections with the help of virtual mapping and sensors. A mirror world can be defined as a Metaverse where the appearance, knowledge, and structure of the real world are transferred to virtual reality as if they were mirrored. In other words, mirror worlds are digital creations that imitate the physical and social structures of the real world in a VR environment (Anderson & Rainie, 2022). An example of a mirror world is Google Earth, which collects satellite images worldwide and periodically updates the photos to reflect the ever-changing view of the real world (Lee & Kwon, 2022). Among the basic phenomena of Metaverse platforms, virtual reality technologies also show parallelism with the concept of the mirror world, which is expressed as reflecting real-world information to the virtual world in the most realistic way (Park & Kim, 2022).

Meatspace

Meatspace is the physical world or real life as opposed to cyberspace or virtual environment. It was invented in opposition to the emergence of cyberspace, the interconnected virtual world of computers with which we interact. In a modern context, cyberspace would be online, while meatspace would be offline. Metaverse transforms this type of mapping on a large scale with comprehensive, interactive user modeling by mapping and simulating all our daily activities into cyberspace. The communication formulas between people in cyberspace tend to completely change the human subject status in the content and identity transformations created in media environments. Individuals; play an active role in creating user, consumer, content provider, media opinion leadership, and communicative action areas. This new era also lays the foundation for the issue of inter-media through user accounts and applications, in which interaction and transitions between media are integrated with convergent technologies. For example, from a consumer perspective, Metaverse has opened up a new distribution channel for retailers and fashion companies when shopping for real-life products (WSJ, 2022). Users can also use 3D versions of clothing stores in Metaverse to purchase fashion items for their real-life personalities. This way, a different shopping experience has been created with real-life and online shopping characteristics. The user can act as if visiting the real-life counterpart in the three-dimensional representation of the store, go shopping with friends, and the store staff can track the person's movement and interest in the store and accordingly offer recommendations based on the product of interest to the person. This creates a service that existing online stores cannot copy.

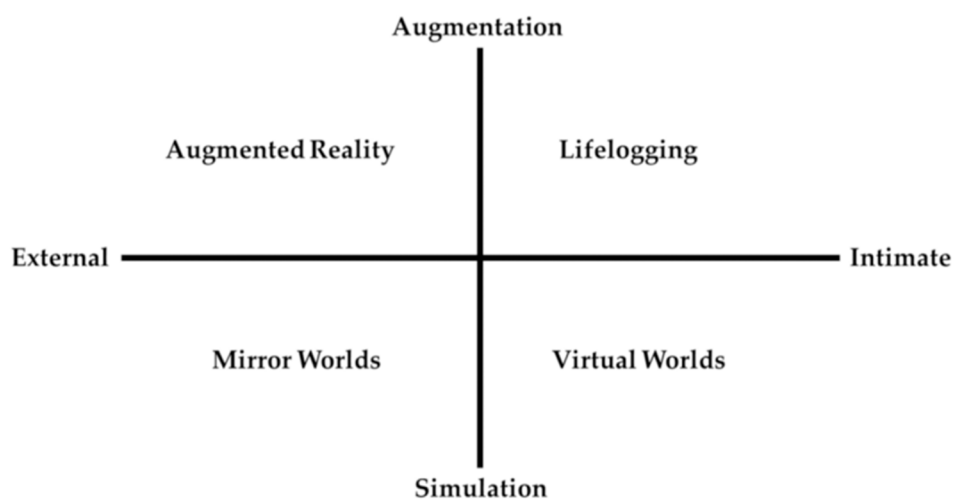
Digital Twins

A digital twin is a digital copy of a physical asset; it updates and stores all information about its physical counterpart. Intelligent devices can be expressed as enabling objects to exchange data with other objects via the internet (Yang et al., 2022). Thanks to the IoT, every asset can theoretically emit real-time data to its digital twin (Batty, 2018). The digital twin can reduce or even prevent these risks by providing comprehensive information about real-world asset status, history, and maintenance needs (Dietz & Pernul, 2020). Furthermore, digital twins are used to predict the consequences of situations that may occur in

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real life through simulations (Park & Kim, 2022). Thanks to the Digital Twins applications, which are expressed as a virtual model of the product or service in Metaverse, with the creation of virtual twins of physical objects, it will be possible to decide how to make production with minimum time, movement and cost. Thus, the production time will be shortened, contributing to the preparation of the final products (Far & Rad, 2022). From a different perspective, the development process of Metaverse can be explained in three stages. These; are digital twins, digital natives, and surrealism. In the first stage, which is defined as digital twins, the physical and virtual worlds are explained as two wholly separate and independent areas; In the second stage, which is defined as digital natives, the physical and virtual worlds are explained as two separate areas that are interconnected and intertwined, with joint points. In the last stage, the physical and virtual worlds are defined as surrealism, and it is seen that the physical and virtual universes are not separated. Instead, the physical and virtual spaces are intertwined (Wang et al., 2022). Figure 3 shows presented four classification criteria for types of Metaverse (Park & Kim, 2022).

Figure 3. Types of Metaverse



Multiverse

The definition of the Multiverse usually refers to many different universes operating independently. In the context of technology/internet/social media, this is Horizon, Minecraft, Roblox, Twitch, Fortnite, Discord, and any other virtual social media and gaming place where people socialize, play, and shop. In theory, the Metaverse could gather all these multiverses in one place. However, the concept of the Multiverse creates a large ecosystem of unconnected and different digital worlds. These digital ecosystems within the Multiverse may not allow users to switch between digital worlds seamlessly. Therefore, the fact that experiences belong to different Metaverses instead of a single Metaverse may cause this concept to be called Multiverses. From this point of view, a real Metaverse infrastructure and the development of global standards and protocols are required for Multiverses to become a single Metaverse (Rostami & Maier, 2022). The difference between the Multiverse and the Metaverse is misunderstood, as they each

consist of several different ecosystems in their own right. In the case of Multiverse, a user can discover an unlimited number of different ecosystems that are unrelated to each other.

Internet of Things (IoT)

Within the Metaverse ecosystem, avatars, content production, virtual economy, and social acceptance. Metaverse's technological infrastructure includes augmented reality, human-computer interaction, blockchain, image processing, IoT, cloud computing, and artificial intelligence. IoT is a system that can transfer data over a network without needing a computer and consists of interrelated computing devices. Devices can directly connect and share data with other devices and systems over the internet. For this purpose, sensors, software, and other embedded technologies work together in the same network. These devices can be simple household appliances or advanced industrial tools. While IoT enables Metaverse to analyze and interact with the real world, Metaverse will act as a 3D user interface for IoT devices, paving the way for a new and tailored IoT user experience. Thus, Metaverse and IoT will help the world make data-driven decisions with minimal training and mental energy. As a result, Metaverse and IoT are likely to power each other (Ning et al., 2021). While IoT continues to develop in a way that renews itself daily, semantic web technologies and computer and mobile device-compatible features offer virtual worlds different from each other, thus opening the door to a new type of change for users. Real-time IoT supports immersive digital experiences with wireless and seamless connectivity. To map this IoT data from real life to a digital reality in the virtual world, Metaverse takes advantage of the advantages created by the IoT (Roxin & Bouchereau, 2017).

Avatar

Avatar is users' visual and digital expression in the virtual world, similar to their physical appearance. Many games and applications offer different options for creating avatars. It is effortless for users to create avatars similar to their physical appearance with current technologies. However, we still have a long time to create mimics, synchronization, and facial details. If people are imitated precisely, the perception of reality in the Metaverse will change. Therefore, the Avatar has an essential role in the Metaverse. The purpose of avatars, virtual representations of people in simulated environments, in Metaverse is to embody the user's desired features on a virtual character. This sense of embodiment within the fun and play in the Metaverse enhances the overall perceptual experience and interaction with the environment. In addition, the fact that the avatars are personal increases the users' motivation and positively affects public participation. Approaching ideal similarity, avatars identify with the characters of the users and create a perception of awareness around them (Rahill & Sebrechts, 2021). Besides, the relationship between Avatar and the real person in Metaverse will play an essential role in social behavior in the virtual world because a lifelike avatar will have a strong identity and facilitate social interaction. All these sensory and image similarities between people and avatars will enable the person to stand out more quickly in virtual environments (Takano & Taka, 2022).

Contrary to the use of origin, which means the manifestation of a deity on earth, Avatar is used today to mean the reflection of the human body in the digital environment. From this point of view, Avatar is used to express digital users in the virtual world (Dionisio et al., 2013). In other words, avatars are visual reflections that individuals can create to represent themselves in the virtual world. Avatars, which can be designed to look flexible and suitable for a specific scenario, as in the real world, have a significant

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impact on the views and perceptions of other users on digital platforms such as Metaverse (Lemenager et al., 2020).

Human Computer Interaction (HCI)

Metaverse offers new opportunities to bring human-computer interaction to life. HCI is an interdisciplinary field that studies how people interact with computers. HCI aims to make computer features as close to humans as possible. The design, evaluation, and implementation of interactive technologies are among the functions of HCI. In this respect, HCI is a new paradigm for the virtual world based on ergonomics, user experience, and interface design. (Prieto et al., 2022). In Metaverse, a three-dimensional environment where it is possible to engage in social and financial interactions, users can easily participate in daily life activities, play highly realistic games, and shop faster with the improvement of HCI (Skalidis et al., 2022). For Metaverse to take an innovative form in the future, human-computer interaction should be used in parallel with technological developments.

Three Dimension (3D)

3D can be defined as an environment where all perceptions, such as width, height, and depth, are together. It will positively affect the perception of objects' width, length, and depth in the 3D environment, which is inevitable for the Metaverse. Through 3D, the Metaverse feels like the physical world, and objects are perceived as in real life (Ljungholm, 2022).

Three dimensions, which users use to feel themselves in the virtual universe, make the interaction more realistic. For Metaverse to exist, it must be built on a three-dimensional platform. This is possible by developing the real world as virtual and three-dimensional. Today there are 3D environments such as Apple LIDAR Scanner and Microsoft Hololens.

Artificial Intelligence (AI)

AI imitates real-life experiences and tasks of individuals on a computer. It is possible to use AI in Metaverse thanks to personalized digital avatars. AI is the technology that enables machines to perform tasks by more intelligent beings using knowledge learned from previous experiences. With Metaverse, big data belonging to users will be processed, and very different AI applications will be developed. In particular, artificial intelligence will be used to create the digital twin of the physical world. Artificial intelligence can give Metaverse users real-time and essential information. Thus, the user participates more effectively in systems sensitive to people, objects, and actions with this information. Artificial intelligence-supported intelligent assistants are indispensable for digital interaction. It is planned to enter the Metaverse universe with virtual reality helmets or smart glasses, and it is stated that these will be replaced by intelligent lenses soon. Technological infrastructure studies continue on many sensory issues such as walking, running, using hands and mimics effectively, perceiving odor, and eyesight that will be strengthened with smart lenses (Gümüş, 2022). Metaverse uses 3D digital objects and avatars in a very complex way while mimicking the real world with artificial intelligence. This environment is basically defined as a virtual space that can interact. Figure 4 shows the five AI stages in the Metaverse (Mozumder et al., 2022).

Figure 4. Five Artificial Intelligence use cases in the Metaverse



Massive Multiplayer Online Game (MMOG)

MMOGs are video games that allow multiple players to join the game simultaneously over an internet connection. This game genre connects thousands of players within the virtual world. With MMOGs, many players can use and enhance their avatars (Kong et al., 2012). There is also social interaction in these environments where the players interact with each other. These games usually take place in a shared world that players have access. These games can have thousands of players on the same server. Players can join MMOGs from anywhere worldwide with a smartphone, tablet, or computer. With MMOG, users can simultaneously play with other users from different parts of the world in various new and fictionally created digital universes. This role-playing experience, which was previously performed with simple hardware tools such as a computer interface, keyboard, and mouse, has brought the players to be included in the environment where the characters they play in the game are located with the development of wearable technologies. Thus, users have come to control it more effectively as they own a body in the fictional universe. Virtual freedoms have replaced the restrictions created by some physical necessities in the real world to the extent the software allows. However, Metaverse has a complex structure beyond the subjects such as games, entertainment software, etc., that have been produced individually until now. Devices and hardware are suitable for the interfaces, the software, and the algorithms in the background, and the developers make great efforts to make them work in harmony with each other. On the other hand, for such an intensive and application-based data flow to be uninterrupted throughout the world, the transmission and distribution infrastructures of the internet must be adapted to this.

Non Player Character (NPC)

NPC is a game character controlled by the computer and displaying intelligence. Especially in some games, people want to be friends with the artificial intelligence-driven NPC. Thus, the player has completely different social experiences from the real world (Duan et al., 2021). It can change the story in the game with NPCs acting as the player's partner. The player cannot directly control NPCs. These characters can interact with the player through text or voice. In addition, NPCs can give the player tips, cheats, and information. NPCs can serve as guides, assistants, or customer service in the Metaverse.

Moreover, in most games, machine learning algorithms are used to improve the intelligence of NPCs and artificial intelligence agents in the tactical planning and strategy of actions (Huynh-The, 2023). On the other hand, Avatars in Metaverse have much interaction with NPC. In this case, scenarios may inevitably arise that make some people feel inappropriate due to cultural differences (Zhao et al., 2022).

Digital Identities

Today, most transactions are carried out digitally. Depending on this situation, some digital identity or authentication, that is, the digital identity, enables individuals or companies to identify people, devices, or objects in the virtual world (Ante et al., 2022). Identity is a concept that defines people in general terms and uniquely distinguishes them from others. Digital identity can also be defined as the digital version of identity that uniquely distinguishes individuals digitally from others. Digital identity is the compilation of the complete information of an object or entity that exists digitally (Varma et al., 2022). The Metaverse is the evolution of the social experiment that connects our physical and digital identities. This new phygital world allows us to create ourselves as much as we want. Digital identities will not be limited to our physical bodies but will continue to exist in phygital social life in the immortality of digitalization. Digital identity is an online and technology-based form of identity designed to be equivalent to the real identity of individuals or institutions. In other words, digital identities can be defined as an identity type that is at the intersection of technology and identity, which includes many components such as biometric information, online profiles, social media shares, and self-presentations, which are defined as digital footprints of individuals, created with information transferred and recorded in digital forms has defined. Digital identities offer advantages to users. An example of these advantages is providing citizens with the opportunity to benefit from intelligent city facilities such as health, transportation, finance, and energy quickly and efficiently with a digital identity. Individuals, also known as digital users or citizens, use digital identities in all online platforms, such as social media, online shopping, digital banking, digital games, and e-commerce. With digital identity, personal digital traces are formed on the internet, and this provides many functions, such as travel, tourism, food, entertainment, and public services. It can be explained as a technology-based identity form that contributes to individuals' digital reputations, self-presentations, and personalities, that includes biometric data such as tone of voice, signature, retina, and facial expressions and is integrated into living spaces with the development of communication technologies (Mitra et al., 2022).

Lifelogging

The proliferation of ubiquitous intelligent devices such as biometric devices, smartphones, wearable fitness devices, and smartwatches has enabled us to capture, store, process, and analyze activities of daily living. In recent years, these smart devices have been equipped with various lifelogging tools and applications mainly to record and store all daily movements of users (Khan et al., 2022). Lifelogging allows people to keep digital archives of their daily lives, including footage, location tracking, attending activities, listening, reading, watching, body measurements, and internet browsing history (Belli et al., 2019). People record every moment of their lives with the applications of smart devices. Lifelogging is a technology that captures, stores, and describes everyday experiences and information about objects and people. Users capture every moment of their daily life via text, video, and audio, and then the contents are stored on the server, edited, and shared with other users (Lee, 2022).

On social media, people share their lives very freely. With the attraction of connecting with others, expectations are formed in people after posting posts. People record their life through words, pictures, videos and post it on these contributions and then wait for their community to comment on the same words, pictures and videos after the post. Predicting the reactions of friends and followers plays an important role in the lives of many people today (Kim, 2021). Lifelogging is used to improve current

reality practice. The aim is to build on the current experience of everyday life. It becomes easier with the wearing of wearable devices to capture what's going on in people's lives. The most common use case for lifelogging is uploading items from someone's life for the world to see. Life diary happens when someone creates a video on YouTube, shares a picture on Instagram, posts an update on Facebook, posts a video on Tiktok, or writes their own blog post (Bolger, 2021). Lifelogging will be a core part of Metaverse in the future. Because it is truly a turning point for humanity that so many people have the ability to disclose the intimate details of their lives with such a large global community. Any environment that allows one to see the world through another's eyes and offers an insight into how others see their daily reality is a potential opportunity for everyone (Delio, 2020).

Smart Contracts

A smart contract is a contract between the buyer and the seller that works by writing the contract directly into the lines of code. The code and contracts here are distributed; It is located on a decentralized blockchain network. The code controls execution; Transactions are traceable and irreversible. With this technology, a digital contract is made within a network that can be exchanged, unchangeable, reliable, traceable, and digital without the participation of a different party (Varma et al., 2022). Smart contracts are predefined digital contracts that will be executed automatically when certain conditions are met. Contracts are stored on a blockchain, which offers a shared and trusted decentralized ledger system for parties to manage their terms of agreement through a distributed and encrypted peer-to-peer network. Traditional contracts often rely on the physical presence of the parties or electronic signature if signed remotely. Because of this, traditional contracts can be slow to execute and have inflexible terms that must be enforced by law when being adopted. Smart contracts, on the other hand, can automatically and reliably function as legally binding contracts. Thus, smart contracts are crucial for regulating in the Metaverse and helping to solve the hassle of transactions made in the Metaverse (Gilmour, 2022). Smart contracts are a method for implementing direct democracy in virtual worlds. However, it is not clear whether voting preferences in the virtual world reflect real-world voting preferences. Policies implemented by smart contracts thus offer an effective and democratic way of managing virtual worlds. Smart contracts also offer conveniences not common in the physical world, such as weighted voting in elections. In our study, we investigate the second case. For example, community voting decisions in Decentraland are enforced by smart contracts, which are programs that run when predetermined conditions are met. The most popular platform for writing smart contracts is known as Ethereum. Because in the context of the Ethereum blockchain, it is designed as a mutual fund where investors can vote on possible investments. It allows cryptographic token holders to vote on decisions that affect the community. These decisions include banning usernames, creating processes, and adding terms to the list of banned words (Oppenlaender, 2022).

METAVVERSE MARKETING

It is expected that new rules will be added to the digital marketing efforts with Metaverse. For example, marketing studies in the two-dimensional digital environment are similar to traditional environments, using formats such as text, audio, video, and pictures. However, in three-dimensional virtual worlds, these studies are carried out with the help of AR applications, also called wearable technologies, and VR

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glasses and tactile gloves. Thus, all marketing elements are readily displayed to target users on Metaverse platforms that can be accessed (Topsümer & Toktop, 2022). Metaverse marketing allows brands to interact with customers in different ways to stand out from their competitors. Prioritizing new forms of interactive content increases the likelihood of starting a conversation with the brand's target audience. Registering the brand's place in the virtual world not only increases its exposure in the metadata store, but also increases its conversions in the real world. Marketing in metadata expands brand awareness and adapts to the capabilities of virtual environments. Metaverse provides new and different environments to create an immersive story that users can participate in while telling the stories of brands in marketing campaigns (Yazıcı, 2022). Because Metaverse is comprehensive, it offers branded installations and events that users can interact with, rather than just placing simple ads. In the Metaverse, brands have recently discovered new revenue streams through collaborations. A perfect integration between the brand and Metaverse is very important for this to happen. The placement of the brand in the Metaverse world and the selection of the messages it gives require good planning, the right choice and a good integration.

It is seen that the tendency of consumers toward innovative businesses has increased in recent years. Consumers expect innovation in the services and products offered and management styles that affect the customer experience. The consumer profile, which wants to stay within the usual consumer behaviors and be limited by the environment they live in, directs the future of the enterprises. We must know that we are faced with consumers who do not want to be imprisoned in time limits, geographical boundaries, and even administrative boundaries that will determine the rules of life. The metaverse world offers the opportunity to create a life form beyond the perceptions of place and space. It offers a libertarian space for the consumer to go to the concert they want with one click, travel anywhere in the world, and own land in the country they want (Çelikkol, 2022). Besides its potential to create a new technological revolution, Metaverse is expected to provide a shared environment and economy for humanity regardless of where people live, their occupational position, gender, race, and even disability (Duan et al., 2021). Metaverse, which is thought to affect consumer behavior, consumption patterns, and working life by changing the structure of society, is seen as a great opportunity (Pu & Xiang, 2022).

On the other hand, traditional marketing is to communicate directly with existing or potential customers and to get an instant reaction from customers in return for this communication. Metaverse is a candidate to be a typical traditional marketing site. Metaverse is seen as the first option of businesses aiming to hold on to the market in the future. Sponsored ads, an activity that facilitates marketing, is another method used to ensure promotion in Metaverse markets, and its roots are based on physical reality (Avila, 2022). Sponsorship is much more effective when used in an integrated way with other marketing communication elements. In addition, it provides the opportunity to eliminate the multiplicity and durability of messages in traditional advertising environments and draw attention to the message. As the end point of digitalization, Metaverse brings a new dimension to many marketing concepts, such as distribution, supply, and delivery. Despite this, the distinction between goods and services remains valid in the metaverse market, and the ethical principles that dominate physical distribution are also observed in virtual reality. These principles and other Metaverse-specific rules will likely develop and settle over time. At this point, the concept of Metaverse law emerges. Predictably, a decentralized life will be maintained in parallel with the blockchain mentality in the metaverse universe (Vergne, 2021, p.8). However, the establishment of this life on a chaotic plane is not considered. Metaverse, which is a big market as well as opening a new digital age, has some general rules to give confidence to investors, standard contracts on issues such as usage, trading, smart contracts necessary to operate in the market, ethical codes, and even basic norms that all users must comply with them. It is evaluated to have a meta-

law that includes the rights and freedoms specific to the universe (Anıl & Alankuş, 2022). Because the Metaverse is a significant investment arena where large volumes of money are invested, each user acts as a potential trader.

FUTURE CONSUMER BEHAVIOUR WITH METAVERSE

In Metaverse, which is also called the future of the internet by many users, consumers will soon be able to perceive the virtual world with their five senses thanks to wearable technologies (Doko, 2021). Over the years, people have started to take more place in the digital environment. As a result, the number of people shopping online has also increased. While in classical e-commerce sites, consumers make a purchase decision by looking at the photo of the product and the comments under the product, this situation has started to change with Metaverse. Consumers will begin to have an easier buying experience, for example, by trying on an outfit. In addition, in Metaverse, people will not only consume products, but will interact with brands constantly. As a result, brands will be able to keep in touch with their customers and manage the process more effectively (Çelikkol, 2022). The use of the internet by brands and businesses to promote and present their products or services to consumers has led to the rapid development of digital practices of consumer behavior, which is an important dimension of communication (Zhu, et al., 2017). Thus, in the marketing of products or services, it will change consumer behavior in Metaverse in line with digital marketing strategies. Because Metaverse will facilitate the digital experience of the products or services in the ecosystem of businesses, the ability to shop and the organization of virtual event organizations. It is seen that the target consumer groups are working hard to be included in the Metaverse ecosystem in order to reach them through new communication channels. In this context, Metaverse, which is predicted to be the internet of the future, will reveal new consumer behavior practices (Yılmaz, 2022).

With consumers using previous internet-based systems, companies entering Metaverse, Metaverse is a crucial opportunity to bring products and services together. Therefore, many leading global brands have already been included in the Metaverse trend (Hackl et al., 2022). As a result of these big investments that will shape the future, it is thought that the current two-dimensional internet environment will be replaced by three-dimensional virtual worlds that can be accessed with the help of wearable technologies (Sanaç, 2022). These created virtual worlds are multi-user, permanent platforms of the future. Consumers who normally live far from each other can interact with Metaverse in real-time in virtual worlds to shop and socialize. With all these innovations, there will be a situation where the real and the virtual can no longer be completely separated from each other. Metaverse eliminates the distinction between real and virtual, making it possible to bring social relations, entertainment and shopping together in 3D to the digital environment (Topsümer & Toktop, 2022).

Global brands use digital marketing practices in line with their digital communication strategies in order to establish and maintain their communication with their target audiences online. While social media channels are used intensively today in order to produce a unique, participatory and interactive consumer experience between the brand and the target audience, Metaverse, which is described as the internet and social media of the future, is expected to be used in the coming years. Therefore, today's marketing communication practices will initiate a new marketing approach in the Metaverse environment in the digital marketing understanding of the future.

BRANDS ENTERING METAVERSE

By starting to use Metaverse, brands will reach their target audiences more efficiently and cost-effectively, develop digital marketing strategies and make their work continuous. The most important feature of this process is that brands start to receive feedback from customers virtually. Comments that most people can witness in the Metaverse environment will make consumer feedback very remarkable for brands. In recent years, international product or service brands have been implementing Metaverse marketing practices in line with their marketing digital communication strategies. The Hyundai Mobility Adventure application, realized in the Roblox metaspace, an online game programming, production and playing system in partnership with Hyundai, a manufacturer brand in the automotive industry, and Roblox, one of the Metaverse platforms, is the festival square of the application, the mobile city of the future, the eco-forest with customizable avatar user characters. offers the opportunity to experience the future applications of the products and services of the Hyundai brand, play game ads and participate in social activities in the themes of race park and smart technology campus. The QVerse virtual reality application, produced as a result of the partnership of Qatar Airways, a brand in the transportation industry, and Epic Games, a video game production and development company, offers a service called Sama, the first meta-human cabin crew among global airline companies, and provides individuals with a digital interactive customer experience in their air travels. . The Nikeland application, realized in the Roblox metaspace in partnership with Nike, a brand in the textile industry, and Roblox company, enables individuals to experience Nike products in a digital sports format in a game advertisement format through avatar characters that can be personalized using Nike products (Yılmaz, 2022).

Global brands such as Pizza Hut, Dolce & Gabbana, Balenciaga, Nike, Zara, Adidas, Coca Cola have stepped into the world of Metaverse. The world-famous pizza restaurant chain Pizza Hut produced the world's first NFT pizza with a project called "1 Byte Favorites". This virtual pizza slice was sold in cryptocurrency (0.0001 Ethereum). On the other hand, the Coca-Cola brand offered the NFT product named "Coca-Cola Bubble Jacket" for sale through OpenSea. Luxury fashion brand "Gucci" has built a virtual and permanent town named "Gucci Town" in the "Roblox" universe. This town has a Gucci online store, a cafe, and a playground.

According to Gucci officials, twenty million users visited this town in two weeks. Gucci also continues its activities in augmented reality applications. When they point a mobile phone camera at their feet, they can see how the virtually fabricated shoes look on their feet. Gucci also sells its products, such as shoes and bags, as NFT, and users also get virtual products at considerable prices compared to the actual products. Another clothing brand, Nike, launched an NFT collection of 20,000 shoes. Developing digital add-ons in addition to shoes, Nike has also offered its customers the experience of how shoes look on their feet through camera filters using AR. A digital fashion event was held for the first time on "Decentraland," another Metaverse platform. In the "Metaverse Fashion Week 2022" event, catwalk walks, parties, and clothing exhibitions were open to everyone. Users could purchase products in NFT format and could try those products beforehand (Türk et al., 2022). Figure 5 shows experience, discovery, creator economy, spatial computing, decentralize, human interface and infrastructure for Metaverse market map (Radoff, 2021).

Metaverse platforms also provide vast opportunities in terms of marketing methods known as "interactive marketing" or "experiential marketing," which enable brands to connect with their target customers by designing and creating personal experiences. Thanks to the "realistic experience" feature of Metaverse, brands have had the opportunity to have their consumers test their products in a virtual environment.

Brands have also started to move their stores to the 3D digital environment. Brands that enter the Metaverse can offer new customer purchasing experiences by appealing to the senses with various wearable technology equipment such as virtual reality glasses, tactile gloves, and sensor heads. With the help of virtual glasses, customers can visit 3D stores and try products with their avatars. Purchased products can be used as NFTs and can be dressed as avatars (Topsümer & Toktop, 2022).

Figure 5. Metaverse market map



DISCUSSION AND CONCLUSION

Today, with the introduction of Web 3.0 technology, the two-dimensional internet environment is evolving into three-dimensional virtual worlds. Metaverse, which is the most talked about one of these today, is predicted to be an advanced version of the social media platforms that everyone knows today. As a result of this, new rules and dynamics will naturally be added to the marketing activities carried out in the digital environment. While marketing communication works in the two-dimensional digital environment are carried out using forms such as text, audio, video, and images in a way that we can say similar to traditional environments, these works in three-dimensional virtual worlds are delivered to target users on Metaverse platforms, which can be entered with the help of augmented reality glasses, also called wearable technologies, and tactile gloves. will be displayed. 21st century businesses face many changes. Among these, it is the technological changes that provide the most benefit to the business. In the digital age, where Industry 5.0 is being talked about, businesses need to be ready for change and transformation. Because consumer demands and needs are also affected and differentiated by technology. Since the main founding philosophy of the enterprises is to meet the needs, the enterprises should present their products to the market within the framework of the demands and needs required by today's technological conditions.

Metaverse has created its own system in terms of both participation and economic values and created a new market. This phenomenon, which is expressed as the Metaverse market, has its own components. Brands and businesses need to implement some techniques and strategies in order to exist in the Metaverse

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marketing world and to continue the opportunities they have obtained before. For this, the Metaverse marketing strategy should be set up correctly, and then evaluation, planning, training and influencing steps should be applied. Metaverse marketing strategy, which has started to be used effectively as a new generation representation of digital marketing, has created both its own usage area and an economic system. Although this new generation participation method has various disadvantages and risks, it will reach a wide user base effectively and rapidly in the world. Metaverse offers a promising future for computing and technology for participants, businesses and brands alike. When evaluated within the brand and marketing relationship, digital marketers need to keep up with the latest technological developments. Metaverse is shown as the new platform of digital marketing. In terms of brands and marketing, the meta universe is expanding very fast. Metaverse world, the last point of digital transformation, is a platform designed on augmented virtual reality. Metaverse is a digital universe where you can buy and sell products and communicate with customers, as well as providing entertainment, education and information. In this context, Metaverse is a virtual world where physically existing businesses can show themselves, as well as hosting completely virtual businesses. Metaverse business consists of various sub-systems such as production, management and marketing so that the business can continue its activities, just like in the physical organization. Thanks to the technology used in the Metaverse world, communication with all stakeholders as well as customers in business management will be fast and easy. Thanks to technological designs, the promotion of products will be easier and the number of the target audience of the enterprise will increase rapidly. For example, with the Digital Twin application, the ability of a physically existing business to observe its activities in the Metaverse world in three dimensions will contribute to the development of the business.

Metaverse users will exist on Metaverse platforms through their avatars. In other words, users need to carefully design their avatars in order to present themselves in such a new marketing environment and to be permanent in that environment. In this way, users in the Metaverse world can create their own avatars as they wish. The person can create an image of himself as if he were in real life and feel that he belongs to the social class he wants to be. For this reason, new consumers will be created and spending in the virtual world will not be avoided. There is no doubt that this provides an advantage for brands and businesses as well. Metaverse marketing consists of many trends already making much noise and should be noticed. With the increasing interest and knowledge of companies and investors, the future of this industry is evident. Metaverse provides opportunities to create memorable, immersive experiences for audiences of users and customers. With virtual webinars and events, concerts, launch parties, and more to be used in event marketing strategies, Metaverse is a technology where consumers can interact with a brand like never before and experience an emotion they will never forget. Marketing professionals and businesses need to understand and evaluate the full potential of the metaverse universe. Because if we look at the digitalized world, it is possible to say that the Metaverse and similar technologies will take place in the lives of individuals for a long time. This situation shows that marketing will be an essential element in the metaverse world day by day. The first thing digital marketers who want to improve themselves in metaverse marketing should do is to determine a target audience. Considering the Metaverse and marketing, the companies determining the target audience should turn to the Y and Z generations at this point because it would be correct to say that the individuals who will adapt most quickly to the metaverse technology are the members of the Y and Z generation. In addition, marketers who want to adapt to Metaverse need to take specific training and have a little knowledge of blockchain technology, having information about which universes are used and how it makes it easier to adapt to the Metaverse here. In addition, examining the brands that stepped into the metaverse world and discover-

ing what kind of discourse they developed will make things easier. It is well known that branding and advertising opportunities will grow in Metaverse. Located in the metaverse world, virtual billboards, commercial products, and NFTs will play an active role in metaverse marketing in the future. They will facilitate the branding process of brands in Metaverse. At this point, brands will create virtual content for their customers over time in order to be able to market in the Metaverse, and this will affect their brand awareness. In the Metaverse universe, brands need to reach their target audience and develop a community after reaching this target audience. At this point, it is essential to respect the community's management and individuals' decisions.

It is expected that a certain time will pass for the Metaverse to take a strong place in our lives. It will take time for virtual reality products to become widespread, as the market is still small. In addition, these products are expected to be easy to use, affordable, stylish and ergonomic. In addition, it is necessary to strengthen technological infrastructures in order for hundreds of millions of users to simultaneously connect to Metaverses with high data. It is very important for businesses to be able to catch up with the ever-changing technology and see opportunities in order to survive and stay ahead of the competition. Businesses that cannot keep up with the times, cannot be open to technological innovations, and cannot develop strategies for potential future situations are in a way doomed to be defeated. The sooner and consciously the businesses adapt to the changes in the external environment, the more they can be successful the more they attach importance to technological research and infrastructure. This situation actually enables businesses, brands and businesses to enter the Metaverse world. Because in Metaverse, it has become possible not only to play games, but also to virtual tours, artistic activities and shopping. Metaverse users want to exist in the Metaverse world, experience shopping and service by using virtual and augmented reality equipment. As a result, businesses have directed their investments to this technology. The fact that brands offer a realistic shopping experience creates significant advantages for Metaverse consumers. Businesses using virtual and augmented reality technologies have a high chance of being successful in the market. Creating NFT products and virtual-only collections and offering them for sale in virtual stores will be strategies that reinforce this experience.

Metaverse offers consumers, businesses and brands a promising future for information marketing. When evaluated in this relationship, digital marketers need to keep up with the latest technological developments offered with Metaverse. When the general structure of Metaverse and digital marketing are evaluated together, it is seen that the concept of creative content comes to the fore. Metaverse marketing shows that it can be effective in creating awareness for a certain product and service category, helping to promote new products and services in the market, and repositioning a product in the market. It is very important for manufacturers and brands to get acquainted with Metaverse without wasting time and to understand its dynamics in terms of opening the way for strategies that can be produced in marketing communication in the future. The more target consumers and potential consumers are encountered in the relevant environment, the more closely their expectations and needs in the environment will be followed and analyzed. For this reason, Metaverse marketing strategy is an area that needs to be studied in detail.

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