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The Significance of Artificial Intelligence in the Realms of Marketing, Advertising, and Branding inside the Metaverse

Metaverse'de Pazarlama, Reklam ve Markalama Alanlarında Yapay Zekanın Önemi

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ÖZ

Metaverse pazarlama endüstrisi üzerindeki potansiyel etkilerinin çok yönlü olması bekleniyor. Artırılmış gerçeklik teknolojisinin uygulanması, tüketicilerin fiziksel olarak evlerinden çıkmadan ürünlerle etkileşime girmesine olanak tanıyor. Metaverse, mağaza içi deneyimlerin gerçekleştirilmesi için bir fırsat sunar. Ayrıca metaverse markalama seçeneklerinin çeşitliliğinde de artış olması bekleniyor. Sanal reklam panolarının ve müşterilerin sanal giyim tercihlerinin marka bilinirliği üzerindeki etkisini hesaba katmak önemlidir. Bu çalışmada, pazarlama alanında yapay zeka ile metaverse arasındaki ilişkileri araştırmayı amaçlanmış olup metaverse alanı içinde yapay zekanın öneminin incelenmesine özel bir vurgu yaparak, metaverse alanında kapsamlı bir SWOT analizi gerçekleştirilmiştir. Ayrıca, Metaverse'e ilişkin çeşitli teknolojileri ve uygulamaları keşfetmek için önemli miktarda araştırmalar yapılmıştır. Buna ek olarak, mevcut literatürde sınırlı ilgi gören metaverse reklamcılığı ve metaverse pazarlaması gibi spesifik konular kapsamlı bir şekilde incelenmiştir.

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ABSTRACT

The potential effects of the metaverse on the marketing industry are expected to be multifaceted. The application of augmented reality technology allows consumers to interact with products without physically leaving their homes. The metaverse presents an opportunity for the actualization of in-store experiences. Furthermore, it is expected that there will be an increase in the variety of branding options inside the metaverse. It is important to take into account the influence of virtual billboards and customers' virtual clothing choices on brand recognition. In this study, we aimed to investigate the relationships between artificial intelligence (AI) and the metaverse within the domain of marketing and conducted a comprehensive SWOT analysis in the metaverse domain, with a specific emphasis on investigating the significance of AI inside the metaverse realm. Furthermore, a substantial body of research has been undertaken to investigate many technologies and applications pertaining to the metaverse. Besides, the examination of niche subjects such as metaverse advertising and metaverse marketing, which have been somewhat overlooked in existing scholarly works, has been conducted in great depth.

1. Introduction

Due to big firms' large investments in new goods and services, the metaverse may soon influence the public. Since "metaverse" refers to blockchain, Web3, and NFTs, customers are confused. Future situations where individuals spend a lot of time in virtual and augmented settings are called the metaverse (Dwivedi et al., 2023). The metaverse refers to a hypothetical cosmos that exists beyond our current reality and is characterized by its eternal and enduring nature. It is a multiuser environment that

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seamlessly integrates elements of the physical world with the digital realm. The concept under consideration is the convergence of many technologies that provide multimodal engagements with virtual environments, digital entities, and individuals, including virtual reality (VR) and augmented reality (AR) (Mystakidis, 2022).

The metaverse, an immersive virtual reality environment, is expected to grow in popularity for numerous reasons. VR games are becoming more popular for several reasons. First, the popular acceptability of these games is growing. Improved VR equipment pricing makes immersive experiences more accessible to more people. Traceable blockchain technology has also improved VR gaming transaction security. Businesses may create virtual storefronts, branded locations, and interactive experiences to display their products and services in creative ways. The metaverse can also revolutionize consumerism by creating new customer journeys, immersive three-dimensional experiences, and inclusive environments that foster community creativity. VR events, concerts, festivals, and seminars and courses are available. Nowadays, these activities may be done at home and are more convenient. As more individuals and experiences become accessible, the metaverse grows swiftly. Gaming, media, live events, and social media in the metaverse are changing the consumer economy (Cheah, & Shimul, 2023). In the metaverse, people may use virtual or augmented reality to socialize, shop, and follow their dreams. This technology offers a new dimension of involvement, social engagement, and digital existence. Technology has transformed several fields, with social media changing user behavior and interaction patterns. This transformation has affected personal and business uses (Efendioglu, 2023).

Metaverse technology is expected to change civilization in the next few decades. It will enable deep virtual and physical interactions, changing how people interact with their environment. While still in development, the metaverse seeks to combine the physical and digital worlds so users can seamlessly switch between them. Digital immersion lets people travel through time, explore space, and see dangerous natural occurrences like volcano eruptions. Immersive surroundings allow people to work, study, shop, enjoy their hobbies, and socialize. Gaming ecosystems show this phenomenon when players interact successfully in the metaverse (Buhalis et al., 2023). Given the significant financial expenditures major companies have made on new products and services, the metaverse may soon affect the general populace. Customers are confused since the phrase "metaverse" is often used to refer to blockchain, Web3, and NFTs. To clarify, the metaverse usually refers to futuristic scenarios where people spend a lot of their time in virtual and augmented environments (Rosnberg, 2022).

The aim of this study was to examine the potential synergistic effects that might arise from the integration of artificial intelligence (AI) and the metaverse inside the marketing business as a commercial domain. A comprehensive SWOT analysis was conducted within the context of the metaverse, with a primary emphasis on assessing the significance of artificial intelligence (AI) inside the metaverse environment. Furthermore, a substantial body of scholarly research has been conducted to examine the diverse range of technologies and applications associated with the metaverse. Moreover, an extensive investigation has been conducted on specific subjects such as metaverse advertising, branding, and marketing, which have received limited scholarly attention in prior academic literature.

1.1. Literature Review

Within the realm of marketing, scholarly literature has undertaken a comprehensive examination of the interconnections between artificial intelligence and the metaverse. There is a limited body of existing literature pertaining to this subject matter. Due to this circumstance, further investigation is warranted to provide dependable and precise insights pertaining to the Metaverse and the role artificial intelligence assumes in the domain of marketing.

Rathore (2017) redefined the boundaries between physical and digital fashion marketing by emphasizing immersive spaces where fashion consumers can interact closely with brands. He delved into the mechanisms of AI and how they can be adapted to increase engagement, generate customized experiences, and extract actionable insights from consumer behavior patterns in the metaverse. According to his research, the incorporation of AI technology can result in a greater comprehension of fashion consumers, leading to personalized experiences and inventive brand promotions. This integration advanced the field of fashion marketing by establishing innovative engagement strategies and nurturing brand innovation in the metaverse. As the convergence of fashion and technology continued to intensify, this study provided pioneering guidance for brands, marketers, and other stakeholders navigating the digital frontier. Hwang & Chien, (2022) intended to provide a comprehensive definition of the metaverse. In addition, potential educational applications and research issues pertaining to the metaverse were presented and the functions of AI in the metaverse and education based on the metaverse were discussed. Yang et al. (2022) conducted a comprehensive analysis of various case studies and scholarly literature on the implementation of artificial intelligence (AI) and data science in hospital management. They also discussed outstanding research inquiries and difficulties in implementing the metaverse, artificial intelligence (AI), and data science in the context of smart health. Their study offered a comprehensive overview of the progress and utilization of the metaverse, artificial intelligence (AI), and data science within the healthcare domain. They concisely summarized their development and application and highlighted potential avenues for future research. Furthermore, they delved into the potential implications of the metaverse, AI, and data science in the context of smart health.

Arya et al. (2023) offered a comprehensive analysis of the

metaverse, focusing on its technological categorization, the role of embodiment and the presence of avatars, and the level of participation within the virtual environment. Their examination was underpinned by social exchange theory. Additionally, the researchers indicated that practitioners should prioritize brand authenticity while presenting their brand inside the metaverse. Bordegoni & Ferrise (2023) provided a comprehensive examination of the potential benefits of artificial intelligence, digital twins, and the metaverse in the context of knowledge acquisition, skill development, and industrial maintenance. These technologies, which are now gaining significant popularity, were explored in terms of their ability to enhance these processes. Nevertheless, the notions may also be applicable to the upkeep of consumer goods. Chandiwala et al. (2023) conducted an investigation on the potential for renowned individuals and other prominent characters to utilize this realm as a means to enhance their personal brands, with the aim of comprehensively understanding the many opportunities presented by the metaverse. Huynh-The et al. (2023) undertook a valuable endeavor to investigate the impact of artificial intelligence, including machine learning techniques and deep learning architectures, on the establishment and evolution of the metaverse. They conducted an extensive examination of artificial intelligence (AI) techniques pertaining to several technological domains, such as natural language processing, machine vision, blockchain, networking, digital twins, and neural interfaces. These technologies hold promise for constructing virtual environments inside the metaverse. Moreover, a number of key artificial intelligence (AI)-assisted applications, such as those in the fields of healthcare, manufacturing, smart cities, and gaming, were examined with great potential for deployment within virtual environments.

Nalbant & Aydin (2023) analyzed the impact of artificial intelligence-powered technologies on digital marketing and branding. Furthermore, an investigation was undertaken to explore the potential uses of the metaverse, artificial intelligence, and many other digital technologies within the domain of marketing. Additionally, scholarly inquiries pertaining to these specific areas of interest were pursued. Their study examined a range of digital technologies, such as the metaverse, artificial intelligence, blockchain, virtual reality, and augmented reality. The ability of organizations to effectively compete in digital and virtual settings was crucial for their success in the era of digital transformation as they navigated intensifying global competition. Rathore (2023) conducted an investigation on the effects of incorporating artificial intelligence and the metaverse into the fashion business, with a particular focus on the marketing domain. He employed a comprehensive literature review methodology, namely a descriptive approach, wherein he systematically examined a wide range of scholarly publications published between 2014 and 2023. The findings of his study provided academics and technology developers with concise insights into the field of research.

1.2. Conceptual Framework

This study aims to enhance comprehension of the notion of metaverse marketing and explore the significance of artificial intelligence (AI) inside the metaverse. The study focused on the examination of various technologies and their corresponding applications. The architecture of the metaverse is delineated into seven primary strata. The layers are depicted in Figure 1 (Ludlow & Wallace, 2007; Ning et al., 2021; Far & Rad, 2022):

a. The layer closest to users in the physical environment is referred to as the experience layer, which may be considered analogous to the application layer in network systems.

b. The discovery layer is primarily influenced by artists and service providers that want to motivate and enlighten consumers and communities. This layer encompasses essential information, such as relevant material, live streams, promotional emails and messages, as well as notifications, which are sent by the marketing departments of the producers.

c. The layer in question contains creators who possess the ability to generate and sustain the preceding layer. The individuals engage in the process of designing, creating, and developing apps specifically tailored for end-users.

d. Spatial computing is a computational paradigm that facilitates a hybrid mode of processing, thus diminishing the delineation between the physical and digital realms. The layer in question may be regarded as the fundamental framework of the creator layer, encompassing many components such as 3D engines for rendering geometry and animation, mapping and interpreting functionalities, geographic mapping capabilities, integration of sensor data, and user interface elements.

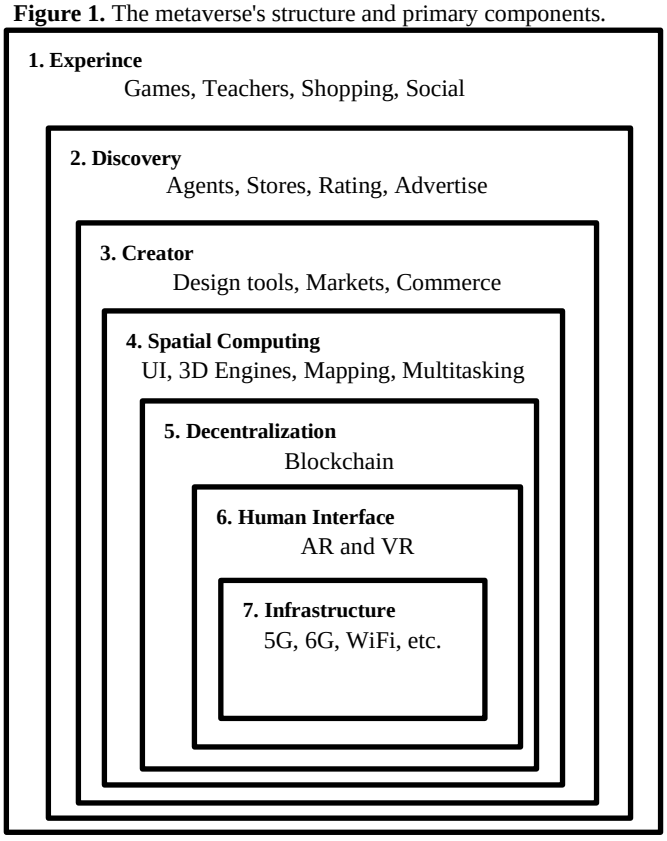
e. Decentralization is a fundamental principle in the metaverse, where distributed computing serves as the underlying framework. This approach offers developers a flexible environment and ensures stability for consumers. Blockchain technology is of utmost importance at this layer, as it serves as a fundamental element that facilitates decentralized infrastructure and assumes responsibility for handling inquiries.

f. The human interface layer encompasses physical-to-digital and digital-to-physical translators, which serve to interpret and bridge the gap between the digital and physical realms. These translators aim to provide users with a seamless and intuitive experience that aligns with their familiarity and expectations in the digital domain. Furthermore, with augmented reality (AR) and virtual reality (VR), smart glasses, 3D printers and scanners, biosensors, and maybe consumer neural interfaces might serve as physical-to-digital and digital-to-physical translation devices.

g. The layer responsible for facilitating connectivity between people and their devices in the digital realm is known as infrastructure, specifically referred to as the

Internet layer. Despite the advancements in speed offered by 6G, notable instances of this technological layer include 4G, 5G, and WiFi. In the context of the metaverse, Web 3.0 emerges as the most optimal selection.

Figure 1. The metaverse's structure and primary components.



AI has great potential in healthcare, vehicles, energy, mining, finance, marketing, agriculture, security, IT, transportation, retail and e-commerce, education, and insurance (Caner & Bhatti, 2020). Digitizing the fashion industry was about sustainability. This project used a variety of digital technologies to improve physical commodity operations, manufacturing, and sales. The metaverse, a parallel virtual reality universe, has opened new doors for digital garment invention and use. Virtual reality technology might be integrated into clothing. Digitalization involves integrating AI and the metaverse and systematically analyzing large data volumes to get insights. The fashion industry is increasingly using AI to forecast trends by analyzing customer behavior, tastes, and emotions. Academic studies have long investigated the metaverse and AI. AI and the metaverse are two major technical advances of the 21st century. Both technologies can improve people's lives and businesses' operations. AI and the metaverse have shown promise in education, operations, fashion, management, and marketing (Rathore, 2023).

1.3. Methods

The acronym SWOT, which stands for "strengths, weaknesses, opportunities, and threats," has a lot of value as a strategic tool for both businesses and individuals. Its meaning is "strengths, weaknesses, opportunities, and threats." "SWOT" stands for "strengths, weaknesses, opportunities, and threats," and it refers to the process of conducting an assessment to determine an organization's or company's areas of vulnerability. The application of a SWOT analysis makes it easier to identify both internal strengths and weaknesses as well as external opportunities, which can then be exploited, as well as possible threats, which can then be evaluated, and suitable risk mitigation techniques can then be implemented.

Upon doing a thorough review of the extant scholarly literature pertaining to the metaverse sector, it becomes apparent that there is a dearth of SWOT analysis studies that explicitly concentrate on this particular area. The primary aim of this study is to conduct an extensive examination of strengths, weaknesses, opportunities, and threats (SWOT) inside the metaverse domain, with the ultimate goal of setting a significant precedent. The primary objective of our study was to conduct an analysis of the significance of artificial intelligence (AI) within the framework of the metaverse. Moreover, much research has been undertaken about the technologies and applications inside the metaverse. Furthermore, a comprehensive analysis is conducted on the notions of metaverse marketing and metaverse advertising.

Corporations have the obligation to duly consider all pertinent factors that are presently at stake. As part of their organizational obligations, corporations are required to allocate attention to their clients, who represent a significant external factor impacting the company's operations. Establishing and nurturing strong relationships with consumers is of paramount importance after they have been identified. Consumers play a crucial role in facilitating the sale of products or services by firms while also enabling consumers to derive benefits from the use of these items or services. To facilitate the development of relationship marketing strategies, organizations may find it beneficial to employ a SWOT analysis. The aspects of a company's marketing activities may be examined through the application of a strategic planning technique known as a SWOT analysis, which serves as a valuable tool. It is imperative for any business to possess the capacity to accurately assess both the potential for expansion of the organization and its ability to fulfill the needs of the target demographic. This component holds significant importance within the realm of any organization. It is imperative that one have the ability to execute each of these tasks with accuracy.

1.4. Research Design

The present study employs a qualitative research methodology. The utilization of a SWOT analysis, which evaluates the strengths, weaknesses, opportunities, and threats of a company, is a prevalent methodology employed in contemporary corporate management. Consequently, this will facilitate the development and implementation of strategic objectives. The key research tool employed in this

study was a strengths, weaknesses, opportunities, and threats (SWOT) analysis, which was utilized to examine the utilization of the metaverse. The SWOT analysis is a strategic framework employed to identify and assess the internal strengths and weaknesses, together with the external opportunities and threats, inherent within a company organization. The major purpose of doing a SWOT analysis is to enhance one's comprehension of the fundamental elements that are crucial to the formulation of a business decision or the development of a strategic strategy for an organization. Conducting such an analysis is of utmost significance due to its paramount importance. The use of a SWOT analysis significantly contributed to the advancement of our study. There are a limited number of SWOT analysis studies that have been conducted in the context of the metaverse domain. The objective of our study is to enhance the existing body of literature in this particular domain. The objective of this research is to facilitate organizations' exploration of their strengths and weaknesses, identification of opportunities, and use of these possibilities within the metaverse industry. Additionally, it aims to enable firms to assess potential threats and implement appropriate risk mitigation strategies.

The rationale behind using the SWOT analysis approach stems from the absence of complete research utilizing this method within the metaverse domain. There is a limited body of research in this particular academic discipline. Our objective is to enhance the body of literature through the inclusion of such research endeavors. The SWOT analysis framework provides a valuable chance to assess the internal strengths and weaknesses of the metaverse workplace while also considering the external possibilities and threats that may arise. Therefore, it is important to do a comprehensive study prior to using SWOT analysis in the context of strategic planning. The metaverse has been subjected to a thorough SWOT analysis, with a concentration on investigating the significance of artificial intelligence within the metaverse. After conducting this analysis, businesses are in a position to assess the forthcoming period's opportunities and devise strategies to prevent threats.

Within the framework of SWOT analysis, a structured depiction is created in the form of a table with four distinct columns that include the areas of strengths, weaknesses, opportunities, and threats. The SWOT analysis is commonly depicted in a tabular structure comprising four columns. The primary objective of this process is to enhance the formulation of forthcoming plans and strategies through a thorough analysis and evaluation of an organization's internal strengths and weaknesses, as well as external opportunities and dangers. Subsequently, a comprehensive analysis is carried out on each of the four components in isolation. SWOT analysis is a strategic planning technique that entails the identification and assessment of an organization's internal strengths and weaknesses, together with the external opportunities and dangers it may face. The objective of this technique is to anticipate and evaluate the prospective benefits and obstacles that may arise within these four discrete areas. Moreover, it provides accurate and thorough information to enable proactive preparedness for both advantageous and disadvantageous situations that may occur in the future.

2. Swot Analysis

Within this particular section, a comprehensive SWOT analysis has been conducted pertaining to the domain of the metaverse.

2.1. Strenght in Metaverse

The current state of uncertainty persists over the metaverse platforms and business models that will endure or arise within this moment of upheaval. Hence, the future appearance of the metaverse is unclear. One potential outcome is that the metaverse may undergo a transformation into a digital replica of our physical reality, wherein users may engage in an immersive online environment that mirrors the temporal and spatial dynamics observed in offline markets. Hence, it may be necessary for researchers to reconsider the relevance of several well-established notions and constructs that inform our present comprehension of consumer behavior (Hadi et al., 2023). The potential success of the Metaverse has the capacity to create additional revenue channels, offering boundless economic prospects for developers, investors, and individuals with a vested interest in business and gaming, among other relevant parties. For example, within the realm of gaming, virtual platforms have the potential to provide individuals with chances not just to engage in gameplay and acquire non-fungible tokens (NFTs), but also to engage in interactive experiences, acquire knowledge, foster innovation, and embark on novel adventures. The emergence of the metaverse has the potential to address societal concerns such as unemployment, which are prevalent in several global economies, particularly in a post-pandemic context. This is due to the creation of new revenue streams facilitated by the metaverse (Allam et al., 2022).

Currently, several enterprises are actively involved in the investigation and implementation of marketing and sales strategies within the metaverse. The use of virtual and augmented reality technologies inside the metaverse facilitates the enhancement of consumer engagement through the creation of interactive, personalized, and flexible user experiences. B2B marketers are anxiously anticipating improvements in the utilization of digital technologies and a greater emphasis on digital goods in order to boost brand recognition, construct a powerful online presence, and make efficient use of the power of technology. The utilization of metaverse marketing presents brands with the opportunity to engage with contemporary and dynamic consumer segments. The use of artificial intelligence technology has considerable significance in the progression of the metaverse. The integration of artificial intelligence (AI), virtual reality (VR), and other technical innovations in the construction of the metaverse holds considerable potential for revolutionizing human interaction, nurturing

creativity, and improving general welfare. The potential for democratization, the applications in sustainability, and the value it delivers in terms of entertainment make it a good force with favorable ramifications on a worldwide scale. Nevertheless, it is imperative to design the metaverse in a way that acknowledges the fundamental principles of psychology and human interaction to ensure its efficacy and impact.

2.2. Weakness in Metaverse

The COVID-19 pandemic necessitated the implementation of non-face-to-face sample collecting methods, which resulted in limitations in obtaining data from diverse sources and eliciting comprehensive responses about experiences and perceptions of metaverse platforms. The comprehension of the questionnaire items was hindered by a dearth of familiarity and consciousness regarding the metaverse service and platform, resulting in a limited range of participants in the gathered sample (Hwang, & Lee, 2022). The concept of virtual reality (VR) treadmill walking was presented to the panelists. In essence, individuals who have experienced a stroke may benefit by utilizing a safety ring, donning metaverse glasses, and engaging in walking exercises on a treadmill that is equipped with automated adjustments tailored to their specific needs. One distinguishing characteristic of this approach, in comparison to existing treadmills, is its ability to offer stroke patients a secure platform for exercising within a virtual environment alongside others, therefore enhancing their perception of reality. Hence, it is reasonable to anticipate that individuals who have suffered from strokes may experience favorable exercise outcomes inside the virtual realm, which offers advantages unbound by temporal and spatial limits. However, it is important to acknowledge that certain aspects, such as technological constraints, safety concerns, and cost considerations, may pose limitations in this context (Cho, et al., 2023).

The continuous progression of essential technologies required for the implementation of comprehensive metaverse principles indicates that the achievement of a completely actualized metaverse may require a significant duration, potentially spanning multiple years or even decades. The potential reason for this phenomenon may be attributed to the relatively sluggish progress in the development of essential technologies necessary for the realization of comprehensive metaverse concepts. Furthermore, it is imperative to address the matter of accessibility since it necessitates careful consideration. One of the limitations connected with metaverse marketing is the lack of specialized knowledge and skills inside the respective business. Proficiency in a diverse range of developing technologies is vital for professionals due to the continuous advancement of the metaverse.

2.3. Opportunities in Metaverse

The concept of the metaverse offers substantial marketing prospects by facilitating the presentation of diverse brands and products inside a virtual reality setting and a three-dimensional environment. In contrast to conventional online shopping encounters, marketers have the ability to offer an immersive experience that enables customers to engage with items in real-time, therefore eliciting a genuine sense of connection. Prominent gaming firms and industry leaders are capitalizing on the potential of the metaverse to develop immersive gaming platforms. Examples of such platforms include Roblox, Second Life, and Fortnite. The significance of the metaverse for marketers lies in its ability to effectively engage customers through a distinct and innovative approach, capturing their interest by showcasing items inside a dynamic and immersive environment in real-time. The metaverse presents a unique opportunity for businesses to enhance their brand recognition in hitherto unexplored domains of conventional marketing (Khatri, 2022). The metaverse allows local governments to improve citizen interactions, provide real-time services, and manage municipal assets. This will also generate more cash, allowing local governments to undertake complex and costly projects. The metaverse also allows local governments to redesign urban planning frameworks to focus on community well-being and social factors. In addition to governing bodies, enterprises, educational institutions, and huge corporations will be able to operate online. Digital twin technology, which will be created in the metaverse, will increase interactions with current and future customers and improve their products. As people desire to enhance their avatars, which are expected to become important assets in the burgeoning metaverse, they will have more opportunities to explore different fields, such as the creation of easily accessible virtual goods (Allam et al., 2022).

The advent of the metaverse offers a novel avenue for younger cohorts to engage in captivating and innovative encounters. Despite the ongoing development of the virtual world, several marketers have already allocated resources towards establishing their brand identities within the digital realm. The investment has yielded several advantageous effects, such as increased revenue, heightened brand awareness, improved engagement, and various other interconnected metrics. In the current market, consumers, particularly those belonging to elusive demographic segments like Generation Z, are actively searching for a brand that possesses qualities of engagement and fascination to meet their wants. This assertion has particular validity for consumers who have a keen interest in acquiring a novel product or service. Due to its pervasive accessibility, the metaverse offers a highly conducive backdrop for the achievement of this objective. Currently, companies are progressively expanding their operations outside the domain of virtual reality and actively engaging in the creation of immersive experiences that are in line with their product offerings. The potential impact of employing the AI-driven metaverse as a means to shape the course of human interaction in the future is noteworthy. It is imperative for individuals to engage actively in the construction of the metaverse, ensuring that the outcomes generated are

beneficial for all parties concerned.

2.4. Threats in Metaverse

Companies have been successful in building their physical and traditional brand presence in recent years. It's unclear how customers' metaverse expectations affect firms' need to change their brand building tactics. It is unclear how much metaverse brand creation increases product sales and brand loyalty. Customers' first knowledge of a product, such as a metaverse Chipotle burrito, and their future purchase decisions in the real world may result in temporary effects unrelated to sales. Marketers will struggle to link metaverse brand development to long-term client behavior in the physical and virtual worlds. Several traditional online and offline initiatives may complicate this process. Thus, marketers may struggle to demonstrate brand development results in the metaverse compared to the concrete domain (Lu, & Mintz, 2023). The vast range of possibilities offered by metaverse spaces, the ability for consumers to engage without revealing their true identities, cryptocurrency and legal ambiguities, and the lack of bank transaction security in blockchain chains have raised questions about the future of banks. Two views exist on banks' existence and importance. Banks often go beyond their primary aim of gathering small amounts of wealth and turning them into investments. Banks mainly serve customers who want to protect their money and lend it to others. Transaction fee-based structures are seen as hurting productivity and society (Ozkaynar, 2022).

The global community is currently witnessing a heightened level of digitalization, resulting in a corresponding rise in the frequency of cyberattacks. The growing occurrence of cyberattacks poses a potential threat to the integrity of security mechanisms utilized by intricate technologies like blockchain and bitcoin. It is imperative to use caution when dismissing the potential for these assaults to extend into the metaverse. The creation of hitherto undiscovered flaws in the system's defenses is an unavoidable consequence of the continuous evolution of metaverse technology. Programmers have a responsibility to do a thorough assessment of the system and address any potential risks that may have emerged due to the identification of new flaws. There is a possible vulnerability that exists wherein unauthorized parties may be able to acquire access to an individual's avatar using various software programs, therefore obtaining access to sensitive personal and financial information. Moreover, it is important to acknowledge that cybercriminals have the power to take control of an individual's avatar inside the virtual domain, therefore engaging in actions that might potentially do harm to one's interpersonal relationships and overall reputation. The authors were responsible for creating Table 1. Table 1 has been constructed based on the relevant literature in accordance with the findings of our investigation.

3. Technologies and Applications in the Metaverse

In his 1992 science fiction novel “Snow Crash,” Neal Stephenson invented the metaverse, a shared, immersive virtual environment. Augmented reality enriches physical reality, and a persistent virtual area creates this virtual universe. The integration of the physical and digital worlds might be considered a major internet achievement. This convergence lets individuals interact with computer-generated environments and instantly connect. The metaverse combines cutting-edge technology. VR and AR provide immersive experiences that blur the line between the real and virtual worlds. AI and ML provide in-world elements with more autonomy and interactivity, allowing them to behave like people (Rathore, 2018). The simulation begins with ballet, boxing, piano, dance, and tennis. The introduction film shows that tough life situations are possible. Hang gliding, surfing in Hawaii, skiing at the pyramids, climbing with Batman and on Mount Everest, gambling in a massive casino, and divorce and marriage are among these events. The metaverse has various minigames, including Gregarious, Minecraft, and 3D pinball. Avatars play these minigames and receive virtual money based on their skill and risk. When Avatar hits a car and a human, the metaverse pays him. The autos’ visual impacts and damage are obvious during these accidents. Scoreboards that display metaverse ranks help share intermediate game procedures and outcomes. Anonymizing names with numerical IDs is one way to exclude people from the real world. However, other examples show communication via the interface with physical reality. A marketing singularity has arisen in the metaverse, where virtual products in the game environment help sell tangible goods like clothes. In the metaverse, a virtual world, time-turning control function objects may be impracticable. However, these items are used in a way that preserves balance and does not threaten the worldview. The presence of education suggests that the structure of education will stay mostly similar, despite transparent display windows and tablet use (Park, & Kim, 2022).

The utilization of virtual reality”(VR)’and augmented reality (AR) technology inside the metaverse presents a novel opportunity for producers and prospective purchasers to engage in enhanced interactivity. Consequently, this fosters the development of a more immersive and expansive environment conducive to the implementation of affiliate and partnership marketing strategies (Ali, & Khan, 2023).

Table 1. The SWOT Analysis in Metaverse.

S STRENGHTS	W WEAKNESSES	O OPPORTUNITIES	T THREATS
• The Metaverse's ability to generate new income streams might open up endless opportunities for developers, investors, and anyone involved in business and gaming. • Virtual platforms can offer people the chance to play games, earn NFTs, learn, innovate, and have new adventures. • The metaverse may help solve global issues like unemployment, especially post-pandemic. New income sources are enabled by the metaverse. • Virtual and augmented reality technologies in the metaverse provide interactive, customized, and customizable user experiences, improving customer engagement. • B2B marketers are eagerly awaiting digital technology developments and a growing focus on digital products to promote brand awareness, build a strong online presence, and maximize technological potential. • Metaverse marketing lets firms reach modern, dynamic consumers.	• Since the COVID-19 epidemic required non-face-to-face sample collection, it was difficult to gather data from varied sources and elicit thorough answers on metaverse platform experiences and perspectives. • Few participants were able to understand the questionnaire questions due to a lack of awareness and consciousness about the metaverse service and platform. • Panelists heard about VR treadmill walking. In summary, stroke survivors may benefit from using a safety ring, metaverse glasses, and a treadmill with automatic adjustments. • The ongoing evolution of critical technologies needed to execute comprehensive metaverse principles suggests that a fully realized metaverse may take years or decades to accomplish. • The slow development of critical technology for complete metaverse ideas may explain this problem. Accessibility must be carefully considered. • Metaverse marketing is limited by business expertise. Due to metaverse progress, experts must be proficient in several evolving technologies.	• Virtual and 3D company and product presentations in the metaverse have huge marketing possibilities. Real-time, immersive marketing experiences are possible. • Metaverse helps gaming leaders build immersive platforms. Consider Roblox, Second Life, and Fortnite. Marketers desire real-time metaverse immersion. The metaverse boosts brand recognition in underserved areas. • Local governments may use the metaverse to enhance citizen relations, offer real-time services, and manage assets. New funds may support difficult and expensive local government initiatives. The metaverse may help urban governments enhance communal well-being and social challenges. Online collaboration is possible between governments, enterprises, schools, and corporations. • Metaverse solutions like digital twins will enhance customer service. More chances will arise to investigate other industries, such as the production of free virtual goods, to improve avatars, which are predicted to become significant assets in the increasing metaverse. • Creative metaverse experiences are now accessible to kids.	• Recent years have seen firms increase their physical and conventional brand presence. Metaverse expectations may influence brand-building strategies. How metaverse brand creation boosts sales and loyalty is uncertain. • Early exposure to a product, like a metaverse Chipotle burrito, and subsequent purchases may have non-sales impacts. Marketers will struggle to relate metaverse brand development to long-term physical and virtual consumer behavior. • Marketers may struggle to show metaverse brand development compared to physical ones. • The potential of metaverse spaces, users' anonymity, cryptocurrency and legal issues, and blockchain networks' transaction security are threats to banks' future. Most bank consumers seek secure lending and investing. Transaction fees may harm society and productivity. • Global digitization promotes cyberattacks. Metaverse technology will weaken defenses. • Programmers must assess new faulty system risks. Various applications may reveal avatars' personal and financial details. Avatar hijackers may damage a person's reputation and relationships.

The structural configuration of the metaverse platform significantly influences the user experience. The results show that both the operating system and the users' perception and use of the virtual reality program have a significant impact on the degree of user immersion in the virtual world. It is anticipated that the forthcoming metaverse, when named, will have a comprehensive immersive framework. Upon donning the headset, users will

be able to traverse a parallel, omnipresent realm that closely emulates the physical world (Ramadan, 2023). Users are spending more time on gaming and social metaverse platforms like Roblox, Zepeto, Minecraft, and Fortnite due to the COVID-19 epidemic. Metaverse platform users are growing, especially among younger, online-savvy users. The market size of these platforms is expected to grow significantly. Thus, companies across industries are aggressively using the metaverse for advertising, live performances, events, and education. Since the metaverse has become a global phenomenon, several academic fields are studying its many dimensions. Due to blockchain technology, NFTs, and varied platforms, the metaverse is expanding. Integrating the metaverse with concrete reality is having major effects on the economy, society, and culture (Hwang, & Koo, 2023).

Users can interact with a continuous and shared virtual world that blends physical and digital components in the metaverse. The phenomenon involves the integration of numerous technologies that enable multisensory interactions with virtual environments, digital entities, and people. These technologies include VR and AR. Thus, the metaverse is a complex network of immersive experiences on permanent multiuser platforms. This technology allows real-time, dynamic physical user touch with digital things. The early system included a network of virtual settings where avatars could teleport. The present metaverse includes socially engaging and immersive virtual reality technologies that work with large-scale multiplayer online video games, open game worlds, and augmented reality collaborative spaces (Mystakidis, 2022). The metaverse is a visually immersive virtual environment that mimics reality, allowing people to shop, game, socialize, and relax. The worldwide epidemic has accelerated digital technologies. Telehealth breakthroughs are important, but AI, VR, AR, and blockchain technologies also require better. This includes payment system improvements, remote monitoring, and secure data transmission. Early development and ongoing evolution characterize the metaverse. It integrates AI, AR/VR, Web 3.0, the Internet of Medical Devices (IoMD), quantum computing, and robots, making it promising for healthcare. This confluence might transform healthcare and enable new advances. The metaverse might improve surgical precision and medical applications (Bhugaonkar et al., 2022).

The metaverse has revolutionized entertainment. Gaming is frequently the first and most enjoyable step into the metaverse. Video games, which have traditionally included persistent digital settings, use the metaverse the most. Roblox, Fortnite, and Grand Theft Auto (GTA) are successful global game companies that have created virtual environments with their own economies, currencies, storylines, and characters. Big IT companies are using the metaverse in healthcare. Technological disruptions like the metaverse are expected to change our lives. Smartphones have forced all industries, including healthcare, to adapt. The digital revolution for healthcare practitioners and patients advances with the elimination of physical obstacles. The outbreak has highlighted the importance of reducing regular appointments at overburdened hospitals and clinics. Since it can be completely linked into the metaverse, its usage can remove physical exams. Due to the epidemic, tourism has suffered tremendous losses and failures. However, virtual travel might create a new and interesting tourism destination. Despite relaxed laws, the travel and tourism business has effectively adopted digital platforms by using VR headsets, tours, and 360-degree movies. The "try before you buy" mentality prevails. Virtual reality lets tourists pre-explore places. Travel tickets and lodgings are now booked seamlessly in the metaverse. Augmented reality technologies may make traveling more immersive and interesting. The epidemic and restrictions banning in-person meetings forced educational institutions to implement online systems and other digital communication methods. No matter their age, students prefer to watch rather than study. Virtual reality is fascinating because it may offer incredible experiences that are impossible in reality (Mishra, & Awasthi, 2022). The utilization of the metaverse is also advantageous in achieving goals pertaining to collaboration and enhanced efficiency. Virtual worlds provide a platform for users to engage in interactive communication and collaborative activities inside a shared digital environment. This might potentially provide significant benefits to organizations seeking to foster collaboration among their personnel on projects as well as to individuals working in geographically dispersed locations. Furthermore, virtual environments may be utilized to build virtual workspaces, allowing individuals to perform their professional duties from any geographical area worldwide. This capability has the potential to greatly enhance productivity levels (Bushell, 2022). Generative artificial intelligence can freely create text, images, audio, and video. Generative AI solves metaverse evolution problems by producing new material. ChatGPT and comparable technologies can improve search, reinvent information generation and presentation, and generate new internet traffic. This is expected to significantly impact search engine offerings, accelerating industry innovation and improvement (Lv, 2023).

4. The Significance of Artificial Intelligence (AI) within the Metaverse

The metaverse may be created by combining AI with AR, VR, blockchain, and networking. This integration creates secure, scalable, and realistic virtual environments. Also, these virtual worlds are housed on a platform that assures uptime. AI's role in ensuring infrastructure reliability and efficiency on the seven-layer metaverse platform is widely known. Many advanced machine learning (ML) techniques have been applied in 5G and possible 6G systems to solve complicated problems. Effective spectrum consumption monitoring, automated resource allocation, channel condition prediction, network traffic off-loading, attack prevention, and network failure detection are these responsibilities. These algorithms mostly use supervised and reinforcement learning. Sensor-based wearable devices and

other human-machine interface devices use ML and DL models to analyze and recognize simple and complex human gestures. Thus, users' physical movements are converted into virtual settings, allowing them to fully control their digital representations and interact seamlessly with metaverse entities. These avatars can also converse with numerous physical modalities. They include facial expressions, emotions, bodily movement, and physical encounters. AI-powered voice recognition and sentiment analysis provide avatars with exceptional accuracy and processing speed (Huynh-The et al., 2023). The significance and utility of a virtual environment are diminished if its users are unable to engage with it and utilize it in order to accomplish certain objectives. Hence, interaction serves as a pivotal function inside the metaverse, facilitating the link between individuals in the physical world and the virtual realm. Human-computer interaction has been a prominent subject of research in this particular domain for an extended period of time. It serves as a foundational framework for facilitating contact between humans and computers. Moreover, the field of brain-computer interaction has garnered significant attention in recent years. Artificial intelligence (AI) plays a crucial role in both research subjects, serving to enhance and advance these methodologies. In recent years, there has been a growing body of evidence indicating that artificial intelligence (AI), particularly deep learning, has exhibited encouraging outcomes in enhancing several domains, spanning from scientific research to industrial applications. The integration of artificial intelligence (AI) with the existing framework holds promise for furthering the evolution of the metaverse (Guo et al., 2022).

AI and the metaverse are key 21st-century technologies. Both technologies might improve people's lives, transform industries, and boost work efficiency. The metaverse combines virtual, augmented, and real worlds. Despite the long history of the name "metaverse," it remains a new technology that is increasingly referenced in everyday discussions. The metaverse will soon provide unparalleled labor, education, business, entertainment, and social connections. Machine learning, which allows software systems to improve their prediction skills without scripting, makes many metaverse experiences impossible without it. As technology converges, AI and data science will revolutionize global relationships. This will unleash new ideas, money streams, and better relationships. AI and the metaverse might be used in healthcare, gaming, administration, marketing, education, and other industries. These technologies are usually analyzed separately, ignoring their interactions and synergistic potential (Thakur et al., 2023). The metaverse represents the convergence of three prominent technological domains, namely artificial intelligence (AI), augmented reality (AR), and virtual reality (VR). The concept of the metaverse presents a range of emergent opportunities and potentialities (Yang et al., 2022).

5. Metaverse Marketing

Technology and the Internet have transformed marketing, and this trend is projected to continue. Therefore, marketers must be proactive in understanding and adopting new technologies for advertising, branding, consumer contact, and customer support. With the shift to the metaverse, or Internet 3.0, marketers are struggling to adapt their methods. Many questions remain unanswered under this framework. Marketers must first determine segmentation strategies that benefit their company and customers. Hospitality and tourism researchers must provide a roadmap and strategic frameworks to help industry players categorize and target customers. A conceptual framework that describes the marketing ecology in a decentralized block-chain environment will be valuable. Customers commonly utilize booking websites, hotel websites, or other digital platforms related to hospitality and tourism, but marketers in the metaverse must connect with the user's metaverse. Thus, marketers must create new metaverse customer engagement techniques. Research on metaverse marketing approaches such as content production, influencer involvement, search optimization, and others is urgently needed (Gursoy et al. 2022). Due to Industry 4.0 and a new generation of clients, luxury brands like Gucci, Christian Dior, and Louis Vuitton have partnered with metaverse social networks. Gucci and Burberry have created metaverse-specific non-fungible token (NFT) luxury fashion items. With the COVID-19 epidemic causing worldwide disruptions, fashion firms are expanding online. Thus, brand marketers are studying customer behavior and developing virtual marketing techniques. These strategies include assessing the value of digital fashion items, maintaining brand reputation, ensuring a cohesive and comprehensive luxury fashion brand marketing approach, and attracting prospective consumers, particularly Gen Z, who will be the primary target audience in the physical world (Sung et al., 2023).

The metaverse allows companies to interact with and target consumers via virtual reality, which is expected to change marketing communication. Given the metaverse's unique characteristics and limits, advertisers must plan how to effectively communicate. For instance, they must consider how to best use 3D images, virtual reality settings, and other immersive components to engage customers and communicate their thoughts. Advertisers must examine the distribution channel and how they may communicate with consumers in the metaverse, since print and television may not work as well. Advertisers must also balance metaverse personalization and targeting with privacy and consent considerations. The metaverse presents several marketing communication challenges and opportunities. Advertisers must be proactive and creative to engage consumers in this new medium (Cheah, & Shimul, 2023). Sales of non-fungible tokens (NFTs) have disrupted the fine art industry, affecting auction houses, galleries, dealers, artists, collectors, and investors. With platforms like OpenSea, NFTs are helping non-art collectible markets grow. Wall Street and overseas investors see this multi-trillion-dollar

digital venture as a profitable prospect. Metaverse work is underway by Meta, Microsoft, Apple, Tencent, Alibaba, Sony, and Nintendo, as well as Fortnite, Decentraland, and Roblox. Gaming, commerce, and social media platforms will need to incorporate 3D and mixed reality (MR) if the metaverse becomes a reality. In the following analysis, we will examine the circumstances under which this assertion is true (Belk et al., 2022).

As a growing virtual digital market for users, the metaverse might have considerable purchasing power. Thus, metaverse businesses would provide discounts like those in the actual world, whether online or in stores. Companies would sell virtual and physical goods in the metaverse, requiring the marketing staff to provide appealing deals. New metaverse rivals offer a similar threat to existing brands as in conventional markets. Metaverse investments are becoming more affordable; therefore, firms will likely invest in them. Many brands and businesses will fight over the growing metaverse market. Users need infrastructure and technology to properly participate in the metaverse. The metaverse must materialize and acquire universal acceptance by making these gadgets more affordable to attract more users. Substitution is difficult in the metaverse due to brand competition. As the metaverse grows, customers will have more options, boosting replacement potential (Tayal, & Rajagopal, 2023). In the metaverse, managers and executives analyze risk to determine market entry. Entering the metaverse later does not guarantee predictability or stability. For a competitive edge, organizations must have strong research and development capabilities, be able to handle change and steep learning curves, protect their knowledge from spillovers, and understand how to build services with mechanisms that prevent initial users from testing rival services. Managers may use these factors to assess their businesses' competitiveness (Gauttier et al., 2022).

Metaverse fields are emerging. Banks should emphasize developing new products, tailoring services to the market, establishing market share, achieving market leadership, and maintaining their leading position. First, you must comprehend the metaverse domains' unique traits. This requires understanding client characteristics and behavior in various sectors. Today, financial institutions should be proactive in investing in metaverse regions. Due to high metaverse investment expenses and a small user base, However, bitcoin marketplace product development may boost banks' early income. This is mostly because people who work in these fields own cryptocurrencies or plan to. Each metaverse world has its own coinage. Financial institutions might attract early Metaverse domain adopters by providing interexchange transactions with lower fees and a bank-guaranteed cold wallet to safely store cryptocurrencies. Metaverse domains and organizations have reliability difficulties. Like the Internet's acceptance, adaptation, and usage, metaverse locations are new and complicated to consumers. However, banks' brand values and trustworthiness will help eliminate this stage quickly. For banks to make such progress, national legal frameworks must be well developed. Banks now handle bitcoin exchange money transfers. The banks' proactive and innovative solutions will help speed up legal framework construction. In early metaverse development, game ads are the most important form of advertising for banks (Ozkaynar, 2022).

6. Advertising in the Metaverse

Advertising in the metaverse is exciting and profitable, drawing business organizations and researchers interested in virtual human behavior. There are many unanswered questions about metaverse advertising and its parallels or differences from the real world. Personalizing their avatars, including vital information and color choices, gives metaverse clients a unique experience. In light of companies' enthusiasm for engaging with their target audiences through novel and captivating means, brands must remember that, like social media, the metaverse follows advertising truthfulness regulations. Advertising in the metaverse is a specialized communication effort directed at a specified group during a given period. In the metaverse, companies must verify sensory and performance claims in ads. This assessment involves checking product or service claims and supporting proof for correctness and reliability. The need for metaverse advertising legislation is questionable. Current advertising practices and restrictions in the metaverse are unclear (Israfilzade, 2022). While it is improbable to accurately predict the precise appearance and evolution of the metaverse in the forthcoming decades, it is evident that augmented and virtual reality, in conjunction with advancements such as non-fungible tokens (NFTs), cryptocurrency, and digital innovations, will contribute to the development of a more sophisticated "virtual world" that attracts the attention of certain consumers. Furthermore, there is less uncertainty around the integration of advertising in this virtual realm. Consequently, there exists a conspicuous necessity for more investigation pertaining to the metaverse (Taylor, 2022).

Numerous prominent IT companies are embracing the metaverse phenomenon. Nvidia Omniverse, Facebook Horizon, and Microsoft's corporate metaverse are among the prominent entities at the forefront of this emerging trend. Prominent consumer brands, like Gucci and Coca-Cola, have begun offering their nonfungible tokens (NFTs) for sale inside metaverse platforms like Decentraland (Kim, 2021). Businesses have a valid reason to be enthusiastic about the potential of establishing connections with their intended audiences via innovative and captivating methods. However, it is important for brands to recognize that, similar to social media, the established regulations pertaining to honesty in advertising also hold true inside the metaverse. The capacity to generate three-dimensional depictions distinguishes advertising in the metaverse from other kinds of internet advertising. It is noteworthy to observe that the advertising objective would stay consistent inside the metaverse. In a general sense, an advertising aim may be

characterized as a distinct communication endeavor that must be accomplished within a certain timeframe, targeting a specified audience (Chandiwala et al., 2023). The concept is conceived as a collection of simulated environments in which virtual reality (VR), augmented reality (AR), and extended reality (XR) technologies are employed. Because these immersive technologies add interoperability, continuity, and concurrency to advertising structures and consumer experiences in ways that aren't seen before, we need thorough ways to study advertising in virtual environments. When a user returns to a virtual place and discovers the absence of previously seen brand items or assets, there is a potential for the user to have a diminished sense of connection to both the brand and the metaverse environment (Ahn et al., 2023).

Digital advertising is evolving towards metaverse advertising, similar to the shift from TV, radio, and banner advertisements to social media. The metaverse lets marketers incorporate their brands into the user experience, making users the center. The Metaverse, a virtual reality platform, lets people instantly try on the newest clothing and designs from apparel and fashion manufacturers, unlike seeing famous performers and models. Facebook and YouTube have seen a rise in video content over the last decade. Brands always seek unique formats to stand out. The metaverse seeks to create brand experiences that are more engaging and less obtrusive than digital advertising. Due to its continual accessibility, real-time functioning, independent creative economy, and user-centricity, the metaverse is ideal for advertising. The digital age has changed consumer behavior, especially during the COVID-19 pandemic. Online employment, education, pleasure, and commerce have increased because of this unprecedented worldwide health catastrophe. The metaverse brings together physical and digital aspects, or "phygital." This goal aims to blur physical and virtual reality, changing our perspective and interaction with the world. The metaverse, a collaborative and lasting three-dimensional space, allows digital avatars to interact and explore varied virtual surroundings. The metaverse goes beyond three-dimensional internet reproduction. Corporations seeking to profit from the metaverse are focusing on advertising. Metaverse advertising is attracting global firms that are investing in this promising area. The metaverse promises advertisers exclusive access to a restricted set of high-value, novelty-focused customers. The digital marketing approach incorporates VR, AR, MR, and AI to accomplish this. Second-life experiences are changing as people develop in augmented, mixed, and completely virtual environments (Kadry, 2022). Metaverse advertising provides immersive, interactive experiences that are more personal than conventional advertising. It uses virtual and augmented reality technology and branded virtual locations to provide highly targeted and individualized advertising experiences in virtual worlds. Metaverse advertising also tracks and measures campaign efficacy using user behavior. As virtual worlds and metaverse platforms gain popularity, this new advertising format offers the chance to reach new consumers and make money (Samad et al., 2023).

7. Branding in the Metaverse

Developing a robust and readily recognizable brand is a critical undertaking for any organization, warranting the utmost attention and prioritization. The brand of your company serves as a distinguishing factor that sets it apart from competitors and facilitates the development of long-term consumer loyalty. In the realm of the metaverse, corporations have the capacity to exploit three-dimensional virtual environments to provide customers with an encounter that is simultaneously captivating and engrossing, fostering a stronger connection between the consumer and the brand (Bushell, 2022). Brands have the potential to capitalize on several opportunities, such as the development of novel brand-consumer immersive experiences, fostering community engagement, exploring alternative income sources, using innovative forms of influencer marketing, and enhancing product traceability. Brands encounter several challenges, including but not limited to data privacy concerns, diversity and inclusion difficulties, technology reliability, and adoption challenges (Chrimes & Boardman, 2023). The metaverse operates on an activity-based framework, enabling users to engage in a range of activities such as shopping, gaming, traveling, and socializing. These activities are facilitated by a variety of platform features, including a globe map, customizable avatars, social interaction tools, and a shop or marketplace. Within metaverse platforms, businesses could establish a temporary retail space within the platform's public area, such as the presence of Nikehouse at HangkangPark within Zepeto. Additionally, brands can participate in or organize events hosted by the platform to exhibit their products, as shown by Decentraland Fashion Week and Unilever Degree's metathon held on Decentraland. Brands could establish their own designated world map, referred to as a brand experience space, which can take the form of a virtual store, headquarters, factory, or exhibition. Within this space, users are afforded the opportunity to explore, experiment with, and personalize virtual products through their avatars. Additionally, users can acquire knowledge about the brand's historical background and product offerings, participate in brand events, and engage in quests to obtain virtual products, gifts, non-fungible tokens (NFTs), and discount coupons as rewards (Wongkitrungrueng & Suprawan, 2023).

Luxury brands have reimagined brand identities and improved the consumer experience using technology. Due to modern technologies like blockchain, NFTs, AI, ML, and VR, the fashion business is facing a major shift. The upcoming metaverse as a social platform has researchers and industry experts wondering how these revolutionary technologies will affect luxury businesses, customer experience, and behavior. Luxury firms' customer experiences depend on AI and NFTs. Businesses' metaverse ventures will be a major change. Integrating digital product lines quickly develops a presence in cutting-edge surroundings. The younger generation, who consider the internet essential to their everyday lives, may not distinguish

between "real" and "virtual" as clearly as prior generations. The pandemic's widespread social isolation has caused this change in view (Joy et al., 2022). The use of NFTs for the establishment of a non-fungible brand within the metaverse is deemed imperative. Therefore, it is imperative to develop a novel brand image. The concept of brand substitutability pertains to the degree to which an alternative brand may effectively supplant a given brand in the consumer's decision-making process. This will significantly influence the outward worth of cosmetics (Lee & Kwon, 2022).

8. Conclusion

The concept of the metaverse holds significant importance in contemporary discourse and possesses considerable unexplored possibilities. The metaverse approach is anticipated to prioritize the integration of this technology into individuals' daily activities rather than only focusing on its future expansion. Consequently, it is imperative that more research and development efforts be undertaken promptly to further this technology. Due to the rapid pace of technological advancements, it is imperative for organizations to allocate a greater proportion of their resources to this domain. In the realm of business, active participation in the metaverse is a must for the most prosperous organizations within the sector since they serve as exemplars for other enterprises to emulate. The imminent integration of this technology into the firm necessitates its accessibility to personnel across diverse socioeconomic backgrounds inside the organization. It is advisable to prioritize the development of cost-effective alternatives above the production of expensive items, ensuring broader accessibility to a diverse range of individuals. This will guarantee that the market is adequately catered to.

There is a strong consumer need for convenient and efficient access to certain items and brands. Consequently, it is realistic to expect that the pace of communication will accelerate to its maximum potential. The metaverse is now in its nascent stages of growth, indicating that it has yet to fully realize its inherent capabilities. Consequently, it is anticipated that a considerable amount of time will elapse before the metaverse can effectively fulfill its maximum potential. Business enterprises have a responsibility to develop strategies that prioritize the satisfaction of consumer needs and wishes as well as devise solutions that effectively fulfill client requirements. Consequently, it is imperative to allocate resources towards the adoption and development of nascent digital technologies such as the metaverse, artificial intelligence (AI), blockchain, digital twins, virtual reality (VR), and augmented reality (AR). The concept of the metaverse is currently gaining traction as an emerging area of scholarly investigation and fascination, owing to recent advancements in the respective domain. In order to contribute to the extant corpus of knowledge, further research must be undertaken in this particular domain.

Artificial intelligence (AI) is playing an increasingly important role in the improvement of customer service, the promotion of product innovation, the maximization of human allocation for creative activity, and the implementation of strategies for cost reduction across a wide range of organizational structures. AI is also playing an important role in the promotion of product innovation. The utilization of machine learning (ML) and artificial intelligence (AI) technology has become very significant in the digital market and brand operations, leading to a substantial increase in popularity. Machine learning (ML) and artificial intelligence (AI) are acronyms that are self-explanatory. Artificial intelligence and machine learning have emerged as indispensable tools for several organizations, finding application in various domains. These technologies contribute to enhancing future prospects by consistently providing markets and brands with convenient solutions. Consequently, this phenomenon contributes to the advancement of long-term foresight. The utilization of artificial intelligence and machine learning techniques can enable the segmentation of individuals based on data pertaining to their demographic attributes, interests, and interactions with a certain brand. The aforementioned data has the potential to be utilized in the development of a comprehensive client profile. To effectively employ these methodologies, it is imperative to get relevant data. The duration of customer involvement with brand content is acknowledged as a significant aspect of the engagement process. As a result of this, it is possible to formulate an informed inference on the viewpoint held by these clients with respect to the brand.

The prevalence of digital addiction in contemporary society has significantly contributed to the emergence of a hitherto unexplored stage in the evolution of consumer behavior, which has arisen as a direct consequence of this phenomenon. The commencement of this emerging era has presently materialized, presenting a myriad of captivating prospects. Due to the worldwide pandemic caused by the coronavirus, there has been a growing dependence on the internet among individuals for meeting their shopping, work-related, recreational, and educational needs. It is anticipated that this tendency will persist. This phenomenon can be largely attributed to the reduced presence of barriers that impede individuals from accessing and utilizing the internet. The basic objective of the Metaverse project is to mitigate the existing boundaries between the physical and digital realms. This endeavor is undertaken with the aspiration of catalyzing a significant transformation in the way individuals comprehend and interpret their surrounding environment. The fundamental objective of this project is to facilitate a significant change. Due to this area of knowledge, organizations are now presented with the chance to initiate contact with demographic segments that had not been previously explored, enhance the trust of their current client base, and explore novel routes that might potentially lead to increased revenue. Broadly speaking, every constituent element comprising the metaverse possesses a substantial reservoir of untapped functionalities that may be used by a diverse range of enterprises. It is expected that the

most successful brands will build a substantial presence within the specific market sector under consideration. The utilization of marketing methods inside the metaverse offers a promising opportunity to collect valuable data that might be beneficial for an organization or brand. The previous approaches, if employed, may potentially provide the outcome. The incorporation of digital channels is crucial for companies operating inside the metaverse, as it facilitates the advancement of advertising, marketing, and sales methods that provide more efficacy. In the current epoch characterized by digital transformation, the attainment of commercial success necessitates the allocation of resources towards the metaverse. This need underscores the need for the development of a comprehensive strategy within this domain. Unless they are placed in this exact setting, they will lack the ability to compete on an equitable basis.

The SWOT analysis has revealed that the metaverse holds significant potential advantages and benefits that are anticipated to materialize in the future, indicating a promising outlook for this emerging concept. The field of metaverse studies also places much attention on the substantial contributions made by artificial intelligence. In the foreseeable future, the practice of marketing and advertising within the metaverse is expected to gain popularity. There is a scarcity of academic research focusing on the interconnections between the metaverse and many domains such as artificial intelligence, marketing, advertising, education, entertainment, finance, health, informatics, and industry. This study aims to provide a valuable contribution to the current scholarly literature. The completed study of strengths, weaknesses, opportunities, and threats in this industry has played a significant role in facilitating its expansion in terms of application. The firms operating within this market additionally allocate resources towards investments in the emerging domain of interactive artificial intelligence metaverses.

It is anticipated that both the relevance of and interest in metaverse marketing will continue to grow in the years to come. Because of this, it is feasible to do more in-depth literature research relating to the fields of marketing, advertising, and branding. It is necessary to participate in continuous research to investigate both established and developing technologies within this area considering the dynamic character of the metaverse sector and the rapid pace at which it is evolving. In the not-too-distant future, one of our primary goals is to make the integration of research from a variety of fields a focus within the realm of metaverse marketing. The production of scholarly essays on the topics of artificial intelligence, marketing, and the metaverse will be our primary focus. Through the creation of academic publications, one of our primary goals is to contribute to the expansion of the existing body of literature.

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