

The Metaverse For Communicating And Marketing Purposes: Opportunities And Challenges

Mohamed Abdulzaher¹, Thouraya Snoussi², Shereen Moussa³,
Wassim Korbi⁴

Abstract

This qualitative study examines the uses of the metaverse to create informational and advertising content to promote products and services in the Middle East and North Africa region; A particular focus has been placed on the United Arab Emirates. The authors aim to highlight the opportunities as well as the challenges of using metaverse technologies for marketing purposes. Twenty in-depth interviews were conducted with public relations and advertising experts. The results showed that although the UAE is a very advanced country in the use of artificial intelligence technologies, there is still reluctance by the sample to use the metaverse as a tool to promote products and services; the conviction that the target audience is not yet reliable, and that it is too early to consider the metaverse as a purchasing and marketing tool are among the reasons. In terms of opportunities, respondents estimate that the metaverse is producing a new set of tech tools capable of attracting audiences, boosting engagement, and improving the quality of marketing content creation in the coming years. For perceived challenges, the metaverse is seen as unstable and ever evolving; this makes it difficult for companies to operate, especially in planning and executing marketing campaigns.

Key words: Metaverse, Marketing, Branding, Advertising, Content creation, UAE.

Introduction

Defined as an immersive virtual or augmented reality environment (Mack, 2023; Yilmaz et al, 2023), the metaverse fundamental characteristic lies on its existence in real-time and does not require the user to "turn it on" or turn it off. Thus, this technology is generally used to combine the virtual and physical environments. Further

¹ University of Sharjah, UAE

² University of Sharjah, UAE

³ Khawarizmi International College, UAE

⁴ Gulf University, Bahrain

development of the concept of metaverse in the business environment depends on the development of the virtual economy, which will include various forms of digital currencies such as non-fungible tokens (NFT) and cryptocurrencies (Joy et al, 2022; Belk et al, 2022).

The metaverse is rapidly gaining popularity in the United Arab Emirates (UAE). According to a report by PwC (2021), the UAE is one of the leading countries in the Middle East and North Africa (MENA) region in terms of adopting virtual and augmented reality technologies. The country has been investing heavily in creating a digital infrastructure that can support the metaverse. For instance, Dubai has launched a blockchain-powered virtual world called "Dubai Future District" that allows users to interact with each other and explore different areas of the city. Additionally, Abu Dhabi has established a dedicated hub for gaming and e-sports, which is expected to attract more investors and developers to the region. The UAE's government has also been actively promoting the use of virtual reality in various sectors such as education, healthcare, and tourism. Overall, the UAE's efforts to embrace the metaverse are likely to have significant economic and social impacts on the country in the coming years.

This paper will take the UAE as example to examine the opportunities offered by the metaverse to enhance content creation, and marketing activities to promote products and services. Challenges that may hinder investment in the new communication environment to spread advertising messages in effective ways will be investigated as well.

Literature Review

The concept of Metaverse

Metaverse is a post-reality, continual, multi-user environment that melds physical reality with digital virtuality; with simpler words, it is a virtual world that allows users to interact with each other in a 3D environment. This virtual tool is based on the convergence of technologies that enable multisensory interactions with virtual environments, digital objects, and people such as Virtual Reality (VR) and Augmented Reality (AR) (Mystakidis, 2022). Narin (2021) explains that the term refers to a virtual world where people feel completely mentally using the augmented virtual reality devices involved today. The term "Metaverse" was first mentioned in the 1992 literary work *Snow Crash* by Neal Stephenson (Stephenson, 1992). The first metaverses were computer games consisting of virtual worlds, where access is provided to users through terminals with built-in virtual

reality capabilities and where users can pose as an avatar (The Economist, 2023).

However, in the third decade of the 21st century, the fictional idea of the metaverse seems to be increasingly evolving into an electronic business environment, thus opening business considerations for marketing development and the emergence of marketing tools. Technological companies such as Meta, Microsoft, and Nvidia Corporation are investing huge resources in building a digital universe, which can be paralleled with the meaning of the term metaverse (Kshetri, 2022; Meta, 2023; Sipper, 2022). For this, the metaverse is seen as an additional 3D layer on top of the traditional 2D internet. It is a three-dimensional world where business, information and communication tools are immersive and interoperable (Hollensen, 2022).

Metaverse for marketing and branding purposes

Marketing and branding is a term referring to creating a distinct identity for the business in the mind of the target audience and consumers. Through the marketing and branding across the metaverse, companies describe what they offer, and create content, (mainly PR and advertisement production) that promote their goods and services. That is, they shape how and what people perceive their actions to be.

It has become clear that metaverse provides many opportunities for marketing and branding purposes. Brands can use the metaverse to create immersive experiences that engage consumers and build brand loyalty; all technologies that Meta is currently building are ready for use in a more advanced virtual world in the metaverse (Mourtzis et al, 2022). This new and evolving tool affords a rare chance for companies and individuals alike to broaden their reach and connect with others in a virtual world (Wiederhold, 2022). Adweek (2021) states that among the opportunities the metaverse presents to marketers is the ability to create branded virtual spaces; Brands can create their own virtual environments that reflect their brand identity and values. For example, Nike has created a virtual basketball court in Fortnite where players can participate in challenges and earn rewards. This allowed Nike to reach a younger audience of gaming and basketball fans. Another opportunity is the ability to create branded avatars; companies can create avatars that represent their brand or products. For example, Gucci created a virtual fashion show in Roblox where players can dress their avatars in Gucci clothes and accessories (Vogue Business, 2021). This allowed Gucci to reach a younger audience who are interested in fashion and gaming. Moreover, companies can create immersive experiences that allow users to interact with their products or services in new ways. For example, Mercedes-Benz created a virtual

showroom where users can explore and customize their cars in 3D (Mercedes-Benz, n.d.). This allowed Mercedes-Benz to display its cars in a new way and reach consumers who might not be able to get to physical showrooms. In the same vein, Molina (2021) asserts that the metaverse is not limited by geographic restrictions, which is what enables companies to reach consumers around the world; Kozinets (2022) also notes that the metaverse provides a unique and interactive environment that can be used to interact with consumers in a way that is not possible in the physical world. Shin (2022) as well as Barrera and Shah (2023) argue that the marketing bots are installed to secure a virtual space for services offered to a global audience and open new opportunities for extensive brand engagement and potential for direct sales at scale; Hazan et al. (2023) note that virtual product sales via direct-to-avatar transactions are envisioned as a \$54 billion market. Narin (2021) states that the meta space seems to be powered by a fully functioning virtual economy, often built on cryptocurrency and digital goods and assets, including nonfungible tokens (NFTs).

It has to be stressed that the importance of the metaverse in the context of digital business transformation has been recognized by commercial brands such as Nike, Puma, Gap, Clarks, Tommy Hilfiger, Gucci entertainment brands such as Disney (Los Angeles Times, 2023), fast food chain brands such as Wendy's, Chipotle, Panera, and McDonald's (Insider, 2023), and even professional sports teams such as the Atlanta Braves (Sport Media, 2023). All these brands are considered to have started by researching and analyzing opportunities for cooperation with consumers in the metaverse. Celebrities and influencers are already using the metaverse as a brand wing, and there is a high capacity for companies to do the same (Molina, 2021).

It also showed that the success of the Metaverse experiment depends on addressing the challenges and problems that may arise from violating the privacy of communities and individuals, in addition to ensuring the existence of Metaverse ethical guidelines and ensuring that the Meta world does not conflict with the laws of countries or the culture of local communities.

Although the concept of metaverse has gained significant attention in recent years, with many companies exploring its potential for marketing and branding purposes, there are several challenges associated with using metaverse in marketing and branding. One of the primary challenges of using metaverse in branding is the lack of standardization and interoperability. Currently, there are multiple metaverse platforms available, each with its own set of rules and regulations. This makes it difficult for brands to create a consistent experience across different platforms and limits their ability to reach a wider audience (Kaplan, 2021). Another challenge is the issue of

privacy and security. As metaverse environments become more immersive and interactive, they also become more vulnerable to cyber threats such as hacking and data breaches. Brands need to ensure that the personal information of their users is protected and that they comply with relevant data protection laws (Barnes & Mattson, 2021). In the same vein, Bushell (2022) cautions that there are some potential drawbacks that need to be considered when marketing the metaverse, chief among them is that the Metaverse is still a relatively new technology, and in constant evolution. Which loses stability and fixed standards within the metaverse, which makes it difficult for companies to work, especially regarding planning and implementing marketing campaigns. Several authors also point to the highly competitive environment within the metaverse, which increases the risk of negative publicity (Dhelim et al., 2022; Bushell, 2022; Umar, 2019). In addition, CHA (2022) highlights the global environment in which the metaverse belongs, which assumes that companies should consider cultural differences when marketing to an international audience, which is not always easy. Moreover, Zhu (2022) states that companies need to weigh the potential benefits and drawbacks of marketing and branding in the metaverse before deciding whether to use this new technology, which is why the decision to use metaverse for marketing and branding purposes depends mainly on the specific needs and goals of the companies.

Regarding the uses of the metaverse in the MENA region, Abdulzaher (2022) noted that there is still a mystery about how to use it; the adoption of metaverse technologies has begun in earnest in many areas, such as education, tourism, and medicine, but in terms of marketing, the author notes a lack of literature on this level.

In short, it must be emphasized that the metaverse as a content creation space, marketing and branding tool, encompasses immersive environments, often using virtual or augmented reality technology. Being “always on” and exists in real time, the metaverse spans the virtual and physical worlds, as well as multiple platforms. As in social media, the metaverse enables people to have virtual identities, presence, and “agency,” including peer-to-peer interactions, transactions, user-generated content, and “world-building.” Moreover, despite the potential downsides of using the metaverse such as instability, novelty and global competition, previous studies have emphasized the importance of engaging in the metaverse experience as it shapes future marketing milestones.

The last observation relates to the context of the previous literature, as the authors note that previous studies were conducted in contexts other than the MENA region. Thus, this study will attempt to cover the gap by focusing on the uses of the metaverse for the purpose of

advertising and marketing in the context of the GCC countries. Views of PR experts, communicators and marketers in the UAE will be monitored.

Problem

The problem of the research revolves around the opportunities provided by the metaverse for communicating and promoting products and services from the perspective of experts in advertising, communication, and marketing, as well as the most important challenges that prevent the effective use of metaverse for advertising purposes.

Three research questions formulated as follows to answer the problem at hand:

RQ1: How do content creators and marketing professionals use the metaverse and perceive its role in ensuring content creation in marketing and branding?

RQ2: What are the opportunities to use the metaverse for Content creation in marketing and branding?

RQ3: What are the challenges in using the metaverse for Content creation in marketing and branding?

The importance of the study lies in the fact that it is the first of its kind that reveals the uses the metaverse by communicators and marketers in the MENA region, as well as challenges they face.

Methodology

This qualitative paper is based on in-depth interviews conducted to obtain accurate information about the uses of the metaverse for communication and advertising purposes in the UAE as example of the most developed countries in the MENA region. The sample includes twenty (20) media and marketing experts, aged 35 to 45 years, who work in the UAE government companies (8 participants) and the private sector (12 participants). They have accumulated 10 to 15 years of experience. The sample encloses 14 male participants and six females. 16 of them are bilingual (Arabic and English), while 4 are non-Arabic speakers.

The sample was selected based on the invitation of volunteers to participate in interviews among communication, media, and marketing experts working in the three largest emirates (Abu Dhabi, Dubai, and Sharjah), who are familiar with digital media tools (Etisalat, DU, NBD, SHAMS, Dubai Media City, ADIB, Sharjah Media City, SEMA Brands, Boopin, Ninja Promo, Nexa...etc). An invitation was randomly

sent to 100 employees working in the most popular companies via email, Messenger, and LinkedIn private messages. Only twenty volunteers agreed to be interviewed online 25 to 35 minutes during the period of September to October 2022 (via Zoom, Teams, and Webex). It has to be highlighted that the authors followed the views of Kvale (2007), who recommended to conduct few but long and intensive interviews for qualitative studies.

Findings

Theme1. Metaverse uses (RQ1)

While interviewing the participants, the authors noted that the sample seemed aware of the importance of the metaverse for content creation in marketing and branding purposes; However, the majority of those interviewed failed to confirm its use officially. With the exception of two participants from Ninja Promo and Nexa, the respondents indicated that their use of the metaverse is amateurish, and that they do not master how to use it properly since they did not attend any training for this purpose in their workplace.

Moreover, the interviewees indicated that at present, the metaverse is not yet a significant factor influencing marketing strategies and consumer communication because it is still under development, and the technologies are not widely available; But in the future, it will open many opportunities for content creation, marketing, branding, and strategic communication.

Theme2. Opportunities to use the metaverse for content creation in marketing and branding (RQ2)

According to interviewees, metaverse will open new diverse horizons for promotional and marketing content in several directions; One participant explained that “metaverse will enhance interactivity via live and indirect communication with target audiences aware of using artificial intelligence technologies, avatars, and three-dimensional shapes in choosing products or services”. Participants also emphasized the ability for the metaverse to provide direct and explicit reactions to the marketing content, whether in NFT, videos, or direct conversations with the audience; they also appreciate the fact that the metaverse generates a new set of technical tools capable of attracting the public.

Moreover, a participant from Etisalat emphasized the role the metaverse can play in promoting different products and merchandise across multiple platforms; while highlighting the inclusive and generalized feature dedicated to publishing rich, diverse and disparate content, she recounted her experience on this: “From personal experience, while visiting a space offering legal services, I saw a special

advertisement for tourism and special packages for Malaysia; this commercial content was published for the audience of the “lawyer space inside the metaverse.

In the same vein, another respondent from SEMA Brands argued that metaverse technologies will enhance the improvement of the marketing content, as it offers marketers the ability to modify the content up-to-date and directly, even in the presence of the audience within those spaces. This, he explained, will certainly “speeds and increases competencies in reaching a qualitative audience around the world.”

A respondent from Boopin spoke about “reducing cost compared to publishing content in all traditional media, where any person can publish promotional content about the largest international brands on his spaces on metaverse at the lowest prices, and sometimes for free to promote his personal space.”

The participants added at the end that all mentioned opportunities will contribute to developing and establishing the “metaverse” in the coming years, thus developing into a seamlessly connected virtual reality space; this phenomenon will change how consumers, brands, and companies communicate and do business. However, they feared some of the challenges that might hinder this development

Theme3. Challenges of using the metaverse for content creation in marketing and branding (RQ3)

Many participants expressed their fear of the impact of the digital divide on the development of the metaverse in terms of content creation and marketing use, as some of them explained that metaverse technologies may create new content, but it loses the chances of further spread because of the lack of many technologies in some countries and the lack of awareness of many advertising and marketing specialists of these new tools and applications. One participant from Dubai Media City noted:” There is a need to bridge the technological gap between developing and developed countries to ensure the spread and success of this experience.”

“Realizing the advantages of these technologies, and what they can offer in producing content or marketing services and products, and what is different from what we are currently acquiring from artificial intelligence, virtual reality, and augmented reality, is not clear in the minds of many consumers; we need time to spread the necessary awareness to consumers and professionals as well.” Added another participant from Shams.

A very interesting point was raised by a respondent from Dubai Media City, referring to the issue of ethics: "The success of the metaverse experiment depends on addressing the challenges and problems that may arise from violating the privacy of communities and individuals, in addition to ensuring that metaverse ethical guidelines are in place and ensuring that the metaverse is It does not contradict the laws of countries or the culture of local communities."

To overcome these challenges, participants stress that the focus should be on creating a consistent experience across different platforms by adhering to industry standards such as Open XR. A participant from Boop in spoke of the need to "prioritize user privacy and security by implementing strong data protection measures and complying with relevant regulations such as the GDPR". Finally, users of the metaverse space should monitor their online presence and respond quickly to any negative reactions or incidents.

Discussions and Conclusion

The results of the qualitative study show that even though the UAE is a very advanced country in the use of artificial intelligence technologies, there is a reluctance on the part of public relations experts, reporters, and marketing professionals, who participated in this study, to use the metaverse as a new tool for marketing and branding. While many government and private companies have invested heavily in the metaverse on many platforms recently, it seems that the sample is not decisive in seriously engaging in metaverse technologies.

The reasons given for this were the lack of metaverse training for employees in the market segment, the conviction that the target audience was not yet relied upon, and that it was too early to consider the metaverse as a buying and marketing tool. Although the reasons are different, these results are consistent with what was mentioned by Buchel (2022), who indicated that the metaverse is still a relatively new technology and in constant development. Which makes some people hesitate to use it.

In terms of opportunities, the participants estimate that the metaverse generates a new set of technical tools capable of attracting audiences, enhancing interaction, and improving the quality of creating marketing content in the coming years, by promoting various products and services across multiple platforms characterized by fierce international competition and thus an environment conducive to creativity and innovation. Bushell (2022) maintains the same line that the primary benefit of brands in the metaverse is that companies can reach a larger audience than ever before. Molina (2021) also

emphasizes that the metaverse has a universality that enables companies to reach consumers around the world. As for Kozinets, 2022, he made an appraisal about the interaction that characterizes the metaverse, which is not possible in the physical world.

An important note to add at this level is that the data included opinions about financial aspects related to metaverse use, which the authors failed to find in the studies reviewed; Study participants noted the cost-effectiveness of the metaverse compared to posting content in traditional media and some online platforms, whereby anyone can post promotional content about top global brands on their metaverse environment for minimal prices, and sometimes for free, to promote their personal space.

As for the challenges, the metaverse technology is perceived as unstable and constantly evolving. This makes it difficult for companies to operate, especially in planning and executing marketing campaigns. Other challenges lie in the risks of negative publicity in a broad competitive environment. Violating the privacy of communities and individuals in the metaverse space was stated as well. Several authors (Dhelim et al., 2022; Umar, 2019) have also pointed out the seriousness of the metaverse's highly competitive environment as a double-edged sword. Kaplan (2021) also mentioned the potential for negative brand associations; in a virtual world where users have more control over their experiences, brands may find it difficult to control how their products or services are perceived. Thus, negative experiences or interactions can quickly spread through the metaverse, damaging a brand's reputation.

In conclusion, the authors stress that companies in the United Arab Emirates need to work to raise more awareness among their employees of the importance of serious participation in the metaverse as an essential tool for creating content and promoting products and services, taking into account the existing limits and challenges and the need to work to overcome them professionally.

As for the main limitations of the study are the small number of respondents; Richer results would be possible if the authors could reach large numbers of participants. Another limitation is related to the geographical context in which the study was conducted (three emirates of the United Arab Emirates). The next research will be more comprehensive for more accurate results.

Declaration of Conflicting Interests

The authors declared no conflicts.

Funding

The authors received no financial support for the research.

Bibliography

1. Ad Age. Available online: <https://adage.com/article/marketing-news-strategy/nike-files-virtual-goods-trademarks/2377501> (26 January 2023).
2. Adweek. (2021). Nike's Virtual Basketball Court Comes Alive on Fortnite Island. Retrieved from <https://www.adweek.com/brand-marketing/nikes-virtual-basketball-court-comes-alive-on-fortnite-island/>
3. Barnes, C., & Mattson, E. (2021). The Metaverse: Opportunities And Challenges For Brands And Marketers. *Forbes*.
4. Babbie, E.R. *The Practice of Social Research*. Thomson Wadsworth: Belmont, 2007.
5. Barrera, K. G.; Shah, D. Marketing in the Metaverse: Conceptual understanding, framework, and research agenda. *Journal of Business Research* 2023, 155, 113420.
6. Belk, R.; Humayun, M.; Brouard, M. Money, possessions, and ownership in the Metaverse: NFTs, cryptocurrencies, Web3 and Wild Markets. *Journal of Business Research* 2022, 153, 198-205.
7. Buchholz, F.; Oppermann, L.; Prinz, W. There's more than one metaverse. *I-com*, 2022, 21(3), 313-324.
8. Charged. Available online: <https://www.chargedretail.co.uk/> 2021 /11/19/nike-makes-first-foray-into-metaverse-with-nikeland-on-roblox/(26 January 2023).
9. Creswell J.W. *Research design: Qualitative, quantitative and mixed methods approaches*. Sage: Thousand Oaks, 2003.
10. Czarniawska, B.; Joerges, B. *Robotization of work?: Answers from popular culture, media and social sciences*. Edward Elgar Publishing: Cheltenham Glos, UK, 2020.
11. Dubai Metaverse Strategy, The United Arab Emirates' Government portal.
12. Dwivedi, Y. K.; Hughes, L.; Baabdullah, A. M.; Ribeiro-Navarrete, S.; Giannakis, M.; Al-Debei, M. M.; ...; Wamba, S. F. Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management* 2022, 66, 102542.
13. Dwivedi, Y. K.; Hughes, L.; Wang, Y.; Alalwan, A. A.; Ahn, S. J.; Balakrishnan, J.; ...; Wirtz, J. Metaverse marketing: How the metaverse will shape the future of consumer research and practice. *Psychology & Marketing* 2022, In Press.
14. Easterby-Smith, M.; Jaspersen, L. J.; Thorpe, R.; Valizade, D. *Management and Business Research*, 7nd ed.; Sage: London, UK, 2021.

15. Fereday, J.; Muir-Cochrane, E. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods* 2008, 5(1), 80-92.
16. Green, J.; Willis, K.; Hughes, E.; Small, R.; Welch, N.; Gibbs, L.; Daly, J. Generating best evidence from qualitative research: the role of data analysis. *Australian and New Zealand Journal of Public Health* 2007, 31(6), 545-550.
17. Hazan, E.; Kelly, G.; Khan, H.; Spillecke, D.; Yee, L. Marketing in the metaverse: An opportunity for innovation and experimentation. *The McKinsey Quarterly* 2022. Available on: <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/marketing-in-the-metaverse-an-opportunity-for-innovation-and-experimentation> (26 January 2023).
18. Hollensen, Svend, Philip Kotler, and Marc Oliver Opresnik. "Metaverse—the new marketing universe." *Journal of Business Strategy ahead-of-print* (2022).
19. Insider. Available online: <https://www.businessinsider.com/chipotle-mcdonalds-wendys-metaverse-virtual-worlds-photos-2022-4> (26 January 2023).
20. Jasmina Banda, Andrea Fetzter and Rijal Hikmatullah, GCC State of the Metaverse, Chalhoub Group Report, Dubai, UAE, December 2022
21. Joy, A.; Zhu, Y.; Peña, C.; Brouard, M. Digital future of luxury brands: Metaverse, digital fashion, and non-fungible tokens. *Strategic Change* 2022, 31(3), 337-343.
22. Kaplan, J. (2021). *The Metaverse: Opportunities And Challenges For Brands And Marketers*. Adweek.
23. Kim, J. Advertising in the metaverse: Research agenda. *Journal of Interactive Advertising* 2021, 21(3), 141-144.
24. Kshetri, N. Web 3.0 and the metaverse shaping organizations' brand and product strategies. *IT Professional* 2022, 24(02), 11-15.
25. Kvale, S. *Doing Interviews*. Sage: London, UK, 2007.
26. Lim, W. M.; Kumar, S.; Pandey, N.; Verma, D.; Kumar, D. Evolution and trends in consumer behaviour: Insights from *Journal of Consumer Behaviour*. *Journal of Consumer Behaviour* 2023, 22(1), 217-232.
27. Los Angeles Times. Available online: <https://www.latimes.com/entertainment-arts/business/story/2022-04-27/disney-begins-formulating-a-metaverse-strategy> (26 January 2023).
28. Mack, O. O. The metaverse matters: How this new world could affect your life. *Forbes*. Available online: <https://www.forbes.com/sites/forbestechcouncil/2022/11/18/the-metaverse-matters-how-this-new-world-could-affect-your-life/?sh=2d59d9ef2c7c> (accessed on 26 January 2023).
29. Mercedes-Benz. (n.d.). Virtual Showroom: Experience Mercedes-Benz Virtually Anywhere You Are. Retrieved from <https://www.mercedes-benz.com/en/vehicles/passenger-cars/virtual-showroom/>
30. Meta. Available online: <https://about.fb.com/news/2021/09/building-the-metaverse-responsibly/> (26 January 2023).

31. Microsoft. Available online: <https://www.microsoft.com/en-us/Investor/events/FY-2021/earnings-fy-2021-q4.aspx>(26 January 2023).
32. Mohamed Abdulzaher,(2022). Media of Metaverse, Media Industry and 5th Industrial Revolution Technologies and Web 4.0 & 5.0, Artificial Intelligence Journalism for Research and Forecasting (AIJRF), UAE, First Edition, August.
33. Mohamed Abdulzaher , 7G Journalism and Beyond the Media of Metaverse, How can Metaverse be applied in Robotisation of Marketing?, Artificial Intelligence Journalism for Research and Forecasting (AIJRF), Artificial Intelligence Journalism Journal Issue 01, Volume 1, issue 1, UAE, February 2022.
34. Mohamed Abdulzaher. Globalization 4.0: The Future of Media in the Age of 7G Journalism, Intelligence-Integrated Public Relations Mode. Dar ElBadaal: Cairo, Egypt, 2021.
35. Mourtzis, D.; Panopoulos, N.; Angelopoulos, J.; Wang, B.; Wang, L. Human centric platforms for personalized value creation in metaverse. *Journal of Manufacturing Systems* 2022, 65, 653-659.
36. Mystakidis, Stylianos. "Metaverse." *Encyclopedia* 2, no. 1 (2022): 486-497.
37. Narin, Nida Gökçe. "A content analysis of the metaverse articles." *Journal of Metaverse* 1, no. 1 (2021): 17-24.
38. OpenXR (n.d.). OpenXR Overview - Khronos Group Inc. Retrieved September 28, 2021 from <https://www.khronos.org/openxr/>
39. Patton, M.Q. *Qualitative Research and Evaluation Methods*. Sage: London, UK, 2002.
40. Retail thinktank. Available online: <https://www.retailtouchpoints.com/topics/retail-innovation/moving-into-the-metaverse-growing-swath-of-brands-test-out-virtual-experiences> (26 January 2023).
41. Rizwan Choudhury, "Middle East's First Metaverse Incubator Opens in Dubai World Trade Centre," *Mashable Middle East*, April 12, 2022.
42. Shin, H. A critical review of robot research and future research opportunities: adopting a service ecosystem perspective. *International Journal of Contemporary Hospitality Management* 2022, 34(6), 2337-2358.
43. Sipper, J. A. *The Cyber Meta-Reality: Beyond the Metaverse*. Rowman & Littlefield, London, EN, 2022.
44. Sport Media. Available online: https://www.sportspromedia.com/news/atlanta-braves-digital-truist-park-metaverse-mlb/?zephir_sso_ott=hNMOhU (26 January 2023).
45. Stephenson, N. *Snow Crash: A novel*; Bantam Books: New York, NY, 1992.
46. Stirling-Attride, J. Thematic networks: An analytic toll for qualitative research. *Qualitative Research*, 2002, 1(3), 385-405.
47. The Economist. Available online: <https://www.economist.com/technology-quarterly/2020/10/01/a->

novelists-vision-of-the-virtual-world-has-inspired-an-industry (26 January 2023).

48. Tony G. Karam, Dany Karam and Jad N. Baroudi , A Middle East perspective on the metaverse, PWC Report, Dubai, UAE, April 2022
49. Vogue Business. (2021). Why luxury brands are flocking to Roblox's metaverse. Retrieved from <https://www.voguebusiness.com/technology/luxury-brands-roblox-metaverse-gucci-burberry-lvmh>
50. Yilmaz, M.; O'Farrell, E.; Clarke, P. Examining the training and education potential of the metaverse: Results from an empirical study of next generation SAFe training. *Journal of Software: Evolution and Process* 2023, e2531.
51. Yin, R. K. Applications of case study research. Sage, Los Angeles, CA, 2012.
52. Yin, R. K. Case study research: Design and methods. Sage, Los Angeles, CA, 2003.