



Fashion and the metaverse: Clarifying the domain and building a research agenda

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Introduction. The metaverse, originally envisioned in the science fiction novel as a 3D virtual world inhabited by lifelike avatars (Stephenson, 1992), is gaining new traction in recent years. From leading tech firms like Meta, formerly Facebook, to retail giants like Walmart, many companies have been venturing into the metaverse with various digital strategies (Bobrowsky, 2021). The fashion industry is not an exception. In 2021, Nike acquired a virtual shoe company, RTFKT to accelerate its digital transformation in the metaverse. Brands like Gucci and Ralph Lauren opened their virtual stores on a gaming platform, Roblox, to sell their digital clothing (Debter, 2021). While it has been predicted that the metaverse will radically change the fashion industry (Stephens, 2021), little consensus currently exists regarding what the metaverse is and how it is embodied in the fashion industry. Therefore, this study attempts to clarify the domain of the metaverse focusing on its role in the fashion industry, and proposes a research agenda for studying the metaverse concept in the field of fashion. To this end, this paper first presents the review of literature on the metaverse relevant to the fashion industry and then identifies the types of specific metaverse strategies currently being implemented by fashion firms in order to provide deeper insights into what the metaverse means for fashion.

Literature Review. Although there is no clear consensus on the concept of the metaverse yet, researchers agree that the metaverse is a collective, persistent network of shared virtual environments where people can interact in a similar way to what they might do in the real world (Debter, 2021; Kim, 2022). In delineating the concept of the metaverse, Smart et al. (2007) suggest that the metaverse is not a virtual space but is more of “the junction or nexus of our physical and virtual worlds” (Smart et al., 2007, p. 4). Therefore, the metaverse is built when a network of different platforms and technologies work together to create an experience that spans both the digital and physical worlds. Researchers have identified several core features that define the metaverse, which includes realism (i.e., the virtual space must be sufficiently realistic to immerse users in the virtual realm), persistence (i.e., the virtual space must retain constant presence and availability), and interoperability (i.e., the virtual spaces must interact with each other seamlessly) (Ball 2020; Stephens, 2021). These characteristics make the text-based multi-user virtual environments an integrated network of 3D virtual worlds that provide a compelling environment for human interaction and culture (Dionisio et al., 2013). Several leading firms have already started to build their presence within the metaverse by creating their digital assets like virtual spaces and virtual goods. Essential is an array of technologies, such as non-fungible token (NFT), augmented reality (AR), virtual reality (VR), and metaverse platforms, in implementing compelling metaverse strategies. For fashion brands, the metaverse offers unique opportunities

as it provides an alternative venue for self-expression (e.g., digital clothing for avatars) and retail shopping (e.g., virtual 3D stores) (Bain, 2021).

Methodology. To investigate the metaverse strategies currently being implemented by fashion firms, published trade journals were reviewed using a content analysis. Factiva, a business information and research tool, was used as it is one of the largest databases for industry publications in the business field. Articles published during the period of January 1 to November 4, 2021 were searched using keywords “metaverse” and “fashion.” This search resulted in 651 publications, and after careful examination, 135 articles were identified as relevant sources. Two researchers coded and analyzed the data to identify themes of business strategies relevant to the metaverse. The coding table included the list of business strategies along with the copy of the article summary and fashion brands, if any. Key metaverse strategies were grouped into categories, and the initial list of categories was further analyzed and refined. Through an iterative process, modifications were made, and three types of the metaverse strategies were identified.

Results. Table 1 summarizes the three types of the metaverse strategies that emerged during the data analysis. The first strategy is to release NFT assets. An NFT is a digital asset on the blockchain, which links ownership to unique physical or digital items (Goodwin, 2021). Unlike a digital file that can be endlessly shared and exchanged online without belonging to anyone, an NFT is unique and inimitable, enabling users to own a genuine digital item. NFT may provide the backbone of the metaverse as controlling over the digital assets is vital in the metaverse (Fonarov, 2022). For fashion brands, NFT is most widely used to launch digital fashion goods to facilitate transactions in virtual marketplace. The second strategy is to create virtual clothing and accessories for digital avatars. In the metaverse, users interact via avatars. The ability to customize the avatar is therefore one of the crucial needs for consumers as they want to express themselves through their virtual clothing (Bain, 2021). Providing virtual products on the metaverse platforms enables fashion brands not only to engage consumers with unique brand experiences but also to attract younger audiences who often cannot afford physical products. The third strategy is to create brand events (e.g., fashion shows) and shopping venues (e.g., 3D virtual stores) in an immersive digital environment. Unlike the first two strategies, this strategy is not necessarily specific to the metaverse, rather the natural extension of enhancing online shopping experiences by applying advanced technologies, which fashion firms have strived to do over the past decade. Teaming up with a variety of technology companies that can support the brand’s digital transformation (e.g., turning physical products into digital clothing) is essential in creating compelling digital products and venues.

Table 1. Types of metaverse strategies implemented by fashion firms

Metaverse strategies	Technologies	Examples
Releasing NFT assets (e.g., limited edition products)	NFT, blockchain	Dolce & Gabbana released a nine-piece NFT collection including a digital item as well as physical products and experiences like a private tour of the brand’s atelier.
Creating digital clothing for digital avatars	Metaverse platforms	Gucci sold its virtual sneakers that avatars can wear on the gaming platforms like Roblox and Sims 4.

Creating brand events and shopping venues in an immersive environment	AR, VR, 3D scanning and modeling	Jonathan Simkhai, a New York-based women's wear designer, turned its physical clothing into digital garments and staged a virtual fashion show in Second Life.
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Discussion. Based on these findings, the current study proposes the following research agenda for studying fashion in the metaverse. First, researchers can explore psychological factors that affect consumers' decisions on purchasing NFT products. Exploring how NFT influences a sense of exclusivity among users and the perception of authenticity of digital fashion products may be an interesting avenue of new research. Moreover, future studies can explore the role of digital fashion items in expressing and connecting with others via avatars in the metaverse platforms. Researchers could further explore whether the types of games or gaming platforms affect what digital clothing consumers choose to wear. Another interesting path for future research is exploring how the experience of the brand world mediated by avatar influences consumers' attitudes toward the fashion brand. Lastly, researchers can explore how brand events and shopping venues in an immersive digital environment foster connections between consumers and fashion brands. Specifically, researchers may examine how avatar-mediated versus user-mediated (e.g., 'virtual try-on' using AR/VR) brand experience influences consumer attitudes toward the brand and whether there are different types of products (formal vs. streetwear) or brands (luxury vs. mass market) that work better for a certain type of brand experience.

References

- Bain, M. (2021). Facebook's vision for fashion in the metaverse. *Business of Fashion*. Retrieved from <https://www.businessoffashion.com/articles/technology/facebooks-vision-for-fashion-in-the-metaverse/>
- Ball, M. (2020). Framework for the metaverse. *MatthewBall.vc*. Retrieved from <https://www.matthewball.vc/all/forwardtothemetaverseprimer>
- Bobrowsky, M. (2021). Big tech seeks its next fortune in the metaverse: From virtual-reality glasses to software to digital goods, emerging online realms promise new ways to make big bucks. *Wall Street Journal*. Retrieved from <https://www.wsj.com/articles/big-tech-seeks-its-next-fortune-in-the-metaverse-11636459200>
- Debter, L. (2021). Fashion and the metaverse: Why Ralph Lauren wants to sell your digital clothing. *Forbes*. Retrieved from <https://www.forbes.com/sites/laurendebter/2021/12/25/fashion-and-the-metaverse-why-ralph-lauren-wants-to-sell-you-digital-clothing/?sh=57a0d005be89>
- Dionisio, J. D. N., Burns III, W. G., & Gilbert, R. (2013). 3D virtual worlds and the metaverse: Current status and future possibilities. *ACM Computing Surveys*, 45(3), 1-28.
- Fonarov, O. (2022). What is the role of NFTs in the metaverse? *Forbes*. Retrieved from <https://www.forbes.com/sites/forbestechcouncil/2022/03/11/what-is-the-role-of-nfts-in-the-metaverse/?sh=404c411e6bb8>
- Goodwin, J. (2021). What is an NFT? Non-fungible tokens explained. *CNN*. Retrieved from <https://www.cnn.com/2021/03/17/business/what-is-nft-meaning-fe-series/index.html>

- Kim, J. (2022). Advertising in the metaverse: Research agenda. *Journal of Interactive Advertising*, 21(3), 141-144.
- Smart, J., Cascio, J., Paffendorf, J., Bridges, C., Hummel, J., Hursthouse, J., & Moss, R. (2007). A cross-industry public foresight project. Metaverse roadmap 2007: Pathways to the 3D Web. *Metaverse Roadmap*. Retrieved from <https://www.metaverseroadmap.org/MetaverseRoadmapOverview.pdf>
- Stephens, D. (2021). The metaverse will radically change retail. *Business of Fashion*. Retrieved from <https://www.businessoffashion.com/opinions/retail/the-metaverse-will-radically-change-retail/>
- Stephenson, N. (1992). *Snow crash*. New York, NY: Bantam Books.

