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Integrating the Metaverse into Omnichannel Fashion Retail: Customer Journey

Integración del metaverso en el comercio minorista de moda omnicanal: recorrido del cliente

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ABSTRACT

The objective of this paper is to investigate how fashion brands incorporate metaverse retailing into their omnichannel strategies. To this end, the metaverse is conceptualised as a retail channel, and a real case was analysed using content analysis to examine its omnichannel integration into a leading fashion brand. Finally, we explore the opportunities, challenges, and implications of integrating the metaverse into omnichannel retail and its impact on the consumer journey. Our study reveals that, despite initial branding coherence and partially integrated product information on the metaverse, at present, there is no genuine integration of these platforms within omnichannel retail strategies. Metaverse channel currently functions in isolation from established e-commerce touchpoints, yielding disjointed customer journeys.

Keywords: Metaverse Retailing, Omnichannel Strategy, Fashion Industry, Customer Experience, Digital Transformation

Jel Code: M31

RESUMEN

El objetivo de este artículo es analizar cómo las marcas de moda están incorporando el comercio minorista en el metaverso dentro de su estrategia omnicanal. Para ello, se conceptualiza el metaverso como un canal minorista y se aplicó un análisis de contenido a un caso real, con el fin de examinar su integración omnicanal por parte de una marca de moda líder en este entorno. Finalmente, se abordan las oportunidades, desafíos e implicaciones de esta integración, así como su impacto en el customer journey. Nuestro estudio revela que, pese a las incursiones iniciales orientadas a la coherencia de marca e integración parcial de la información de producto, no existe aún una integración genuina. La desvinculación del metaverso de los canales físicos y digitales consolidados genera su aislamiento funcional dentro del customer journey map.

Palabras clave: Comercio minorista en el metaverso, estrategia omnicanal, industria de la moda, experiencia del cliente, transformación digital.

Código JEL: M31

INTRODUCTION

Five sectors have already begun leveraging the metaverse—namely & apparel, fashion, and luxury; consumer packaged goods; financial services; retail; and telecommunications, media, and technology (McKinsey & Company, 2022; Crespo-Pereira et al., 2023).

Metaverse function as strategic an asset for fashion houses by opening innovative avenues to capture nascent market segments, convey brand positioning, test virtual retail environments, and diversify revenue sources—while simultaneously reinforcing brand image and reputation, particularly for companies with substantial brand equity (Park & Lim, 2023; Dwivedi et al., 2023; Dwivedi et al., 2022; Kalbaska & Cantoni, 2019).

The economic incentives for the fashion industry retail are clear. According to Bloomberg Intelligence, the market opportunity for the metaverse was predicted to reach USD 800 billion by 2024 (Dwivedi et al., 2022).

The gaming-skins market alone reached approximately USD 40 billion in 2020, and platform transformations could position the metaverse as fashion's most significant growth frontier since the advent of e-commerce (McKinsey & Company, 2022). In consequence, the retail landscape is undergoing a profound transformation as the metaverse emerges as a new touchpoint that reshapes traditional business models and the marketing mix. Over ten years ago, metaverse retailing was envisioned as the next phase of e-commerce, shifting the emphasis from product-centric to customer- and experience-driven approaches (Dwivedi et al., 2022).

The metaverse has emerged as a strategic omnichannel touchpoint (Alexander et al., 2024), transcending mere channel proliferation to facilitate seamless customer–brand–channel interactions across both digital and physical realms (Verhoef et al., 2015). Omnichannel marketing offers organisations enhanced opportunities to engage customers across multiple synchronised distribution channels, enabling more efficient use of all available touchpoints.

Despite this early projection, metaverse retail remains in its infancy, and the field's future trajectory is still unclear, as evidenced by the many unresolved questions (Dwivedi et al., 2022). Research remains scarce and largely conceptual (Barrera & Shah, 2023; Kumar et al., 2024). To the best of our knowledge, the literature lacks understanding of how brands integrate the metaverse into omnichannel strategies, making it imperative to elucidate how they leverage this channel to engage the unique, young, tech-savvy consumer segment.

OMNICHANNEL INTEGRATION IN FASHION RETAIL

Three core metaverse-driven brand strategies are possible in the fashion industry: (1) leveraging non-fungible tokens (NFTs); (2) utilising immersive technologies (Virtual Reality/Augmented Reality); and (3) embedding brand experiences in virtual worlds and games (Park & Lim, 2023).

Brands may develop proprietary virtual platforms (branded virtual worlds) where firms can communicate and distribute branded fashion skins as end-products (Chan et al., 2024). Russo et al. (2024) delineate two primary categories for virtual assets: non-fungible tokens (NFTs) and virtual garments or other digital goods.

NFTs are unique blockchain-based assets in decentralised metaverses, ensuring ownership, provenance, and authenticity of virtual or physical items (Russo et al., 2024). Consumers acquire fashion NFTs by converting currency to cryptocurrency and buying them on specialised marketplaces (Chan et al., 2024). Conversely, digital assets reside within centralised metaverse platforms and lack blockchain support (JPMorgan, 2022). This is the case of Vans' World, whose branded virtual space offers digital garments and other goods.

Virtual assets may have physical counterparts, known as digital twins. A notable case is Balenciaga. Balenciaga's collaboration with Fortnite showcased an innovative approach to fashion retail, in which digital outfits were first released within the game and later produced as limited-edition physical garments (Kniazeva et al., 2023). Consequently, the metaverse serves as a marketing channel generating new revenue via virtual skin sales. Still, metaverse-based sales represent only a small fraction of overall e-commerce revenues (Dwivedi et al., 2022).

Exploration of Omnichannel Distribution and the Role of the Metaverse

Omnichannel refers to the integration of all the channels a company has at its disposal (Akter et al., 2021). Channel integration is a fundamental component of omnichannel retailing, referring to the extent to which a company aligns the objectives, design, and deployment of its channels to generate synergies for the organisation and deliver specific advantages to its customers (Cao & Li, 2015).

Omnichannel distribution underscores the need for seamless coordination among multiple distribution and communication channels to ensure that customers perceive a unified value proposition regardless of whether they interact via web, mobile app, social media, in-store or metaverse. This concept reflects a company's initiatives to foster tight coordination across its various channels, resulting in seamless operations. Consequently, channel integration is

considered essential for effectively serving customers who utilise omnichannel services (Lee, 2020).

Scholars characterise channel integration as a six-dimensional construct: integrated promotion, integrated product and pricing, integrated transaction information, integrated information access, integrated order fulfilment, and integrated customer service (Oh & Teo, 2010; Lee, 2020; Gao et al., 2021) (Table 1).

Table 1

Omnichannel strategy. Typology of integration

Integration Type	Description/Definition
Integrated Promotion	Refers to the consistency and coherence of advertising and promotional information (including advertisements, campaigns, logos, and slogans) across all company's channels. In this way, promotional content encountered in a physical store enhances awareness of the company's digital channels, and vice versa.
Integrated Product and Price	Denotes the provision of identical and synchronized information regarding product categories, detailed descriptions, and pricing across all customer touchpoints. Thus, customers receive uniform product and price data regardless of the channel they use, enhancing information accuracy and reducing confusion. This consistency is crucial for maintaining brand integrity and customer trust.
Integrated Transaction Information	Ensures that customer transaction information is collected and synthesized across various channels. This approach treats each customer as the same individual across different touchpoints, allowing for convenient management of purchase records and tailored recommendations based on personal preferences, shopping history, and purchase patterns.
Integrated Information Access	Refers to the extent to which customers can access information about one channel (e.g., product availability, inventory status) from another channel. This integration allows customers to browse an offline store's products and inventory status from its online store and vice versa, enhancing the overall customer experience by providing easy access to comprehensive information.
Integrated Order Fulfillment	Represents a company's ability to complete a transaction process, including order, payment, and delivery, via any one or more channels. For example, customers can buy a product online and pick it up. This integration promotes transaction convenience and customer satisfaction.
Integrated Customer Service	Involves providing standard, consistent service support via one channel for products purchased through another channel. Customers can return or repair products bought online at offline stores and receive after-sales support online for offline purchases.

Source: Own elaboration (Oh & Teo, 2010; Gao et al., 2021).

The first three dimensions are information-oriented services that benefit customers by gathering, processing, analysing, and transmitting data to generate value for customers. They deliver functional, utilitarian value and lessen cognitive load (Gao et al., 2021). These dimensions enhance information quality (relevance, accuracy, and completeness) and decision-making efficiency, reduce effort and data accuracy. (Oh & Teo, 2010)

The latter three dimensions—integrated information access, order fulfilment, and customer service—are high-customer-contact integrations, entailing close, interpersonal interactions with service personnel. These dimensions increase service convenience (Oh & Teo, 2010) and impact positively on the affective component of the customer experience (e.g., enjoyment, pleasure, perceived trustworthiness) due to the interpersonal interactions and convenience they afford, while still contributing positively—albeit to a lesser degree—to the cognitive dimension (Gao et al., 2021).

MATERIALS AND METHODS

This study adopts a qualitative, single-case design to explore how a selected brand integrates its metaverse touchpoint into an omnichannel strategy. A case study is warranted because it allows direct immersion in a branded virtual world (metaverse), enabling observation of marketing behaviours that are not discernible through secondary data alone.

The selected brand was chosen based on its well-documented active presence in the metaverse. SanMiguel et al. (2024) and Dwivedi et al. (2022) identified Vans as one of the most technologically sophisticated and well-funded virtual worlds. Thus, the primary unit of analysis was Vans' World on the centralised metaverse Roblox.

To determine whether and how the metaverse functions as an integrated channel, observations were coded against an established channel-integration framework. Each dimension was operationally defined based on Oh and Teo (2010) and Gao et al. (2021). A detailed codebook defined each code and provided decision rules. Coded data were then aggregated to identify which integration dimensions were present in the metaverse environment and compared against the brand's website.

Access to the metaverse was obtained by creating an account and logging into the specified platform with a standardised avatar. The observation period, spanning June 2024 to May 2025, enabled an in-depth examination of the evolution of platform integration as a marketing and communication touchpoint. Field-note templates were used to record observations, accompanied by screenshots.

Vans' World description

Contemporary brands have been criticised for persisting with transactional approaches that fail to meet evolving experiential expectations (Langer, 2020). Roblox, a centralised metaverse, operates under a Free-to-Play (F2P) model—open, cost-free, and easily reachable via PC or mobile—which enables brands to create their virtual worlds to attract large audiences and foster positive user–brand relationships.

Van's World is a branded virtual world hosted on the Roblox platform, which opens an innovative avenue to contact new market segments. To date, the Vans' metaverse has achieved more than 120 million visits (Table 2). Among the top 30 branded metaverse experiences on Roblox for January–February 2023, Vans is ranked twenty-first (MaxPower Gaming, 2023). By integrating gameplay and commerce, Vans' World's users can play with third parties as well as navigate a curated selection of digital garments, engage in virtual try-on sessions (where permitted), and acquire fashion skins.

Table 2

Roblox's statistics (updated 09/06/2025)

	Visits	Upvotes	Downvotes	Rating	Favorites	Average playtime
Vans	123.998.750	245.247	24.990	90,75%	652.889	4.79 Minutes

Source: Rolimons (n.d.).

Integrated promotion

Notably, the metaverse enhances its utilitarian value by serving as a marketing communication channel in which to inform and educate users on the brand identity and positioning (Table 3). The challenge for brands is not only to adopt multiple touchpoints in the omnichannel strategy, but to manage them in such a way that the consumer perceives a consistent brand narrative, fully aligned with the firm's core values (Lemon & Verhoef, 2016).

Metaverse enable brands to build their positioning within a new virtual context (Dwivedi et al., 2022). The principal challenge in brand management is to strike an optimal balance between heritage imagery versus contemporary visuals (Keller, 2009). Consequently, brands must navigate the challenge of integrating strategic identity cues into these virtual environments without compromising their aspirational appeal or established market positioning.

DATA ANALYSIS

The analysis reveals consistent branding elements in the metaverse and the website—logo, slogan, and colour palette. Interestingly, there is a strong presence of heritage cues in Vans' World. Vans' brand heritage is vividly expressed through the iconic checkerboard motif and signature colour palette on the atmospheres and classic products. Introduced in the late 1970s, the black-and-white checkerboard pattern quickly became synonymous with Vans' commitment to skate culture and authenticity.

Heritage brands such as Vans often draw on a storied history, rich legacy, and curated experiences that longtime customers deeply appreciate. However, these traditional cues may hold less relevance for younger or prospective consumers, who tend to evaluate brands through a more modern, forward-looking lens.

By immersing users in lifestyle narratives focused on alternative sports (skateboarding as a cornerstone of authenticity and longevity, youthfulness, and freedom, the platform not only educates visitors on product application but also reinforces Vans' core brand positioning. The brand identity is also constructed around principles of exclusivity and rarity (to be analysed next).

The analysis revealed little promotional integration of the metaverse within the omnichannel strategy. The observation period was June 2024–May 2025. Our study found no evidence of reciprocal promotional integration between the metaverse and the brand's online channel. There were no digital or search-engine advertisements directing traffic to the virtual environment, no in-world elements linking users back to the website or highlighting web-based sales and events, and no website links or mentions encouraging visits to the metaverse or promoting in-world offers. Consequently, the metaverse channel remains siloed from the brand's broader omnichannel strategy, with neither the web nor the virtual world leveraged to drive traffic or cross-promote initiatives.

Table 3
Integrated promotion analysis

Integrated Promotion	Summarize instances	Synthesis
Consistent Branding	The Vans brand name and logo appear unaltered throughout the virtual store and in its surrounding streets .• Vans's corporate red colour is used continuously in the store and adjacent virtual areas. • The Vans logo is displayed on in-world products (e.g., backpacks) and virtual stores. • The Vans checkerboard pattern appears on in-game accessories (e.g., skateboards), on building façades, and on a bus shelter canopy. • The slogan "Vans Off The Wall" appears on a billboard in a virtual street.	These findings demonstrate a high degree of branding consistency: Vans's visual identity—logo, color palette, checkerboard pattern, and slogan—is faithfully replicated throughout the virtual environment, mirroring the brand's website. This uniformity reinforces brand recognition and suggests deliberate integration of metaverse promotional assets with Vans's overall omnichannel strategy.
Advertising the metaverse	• No Google SEM ads appear related to the brand's virtual assets nor virtual world when searching "Vans."	There is no evidence of digital advertising during the observation period. The absence of search-engine advertising suggests the brand did not leverage this channel to drive traffic to its metaverse.
Metaverse highlights the web	• No virtual brochures or digital pamphlets in the virtual space reference the brand's website. • No virtual shopping bags or packaging display website information.	There is no evidence that the virtual environment directs users to the website. The absence of any in-world promotional elements referencing the site indicates that this metaverse channel is not

	• No virtual posters or flyers highlight website offerings	leveraged to drive traffic back to the brand's online platform.
Metaverse Highlights web store promotion	Not found. • No in-world banner or slider stating, "This weekend only: 50% off in our website store." • No pop-ups, screens, or digital signage in the virtual world drawing attention to current website promotions.	There is no evidence that the virtual environment promotes any website-based sales or events. The absence of in-world references suggests this metaverse channel does not highlight or drive traffic to website promotions.
Web highlights the metaverse	Not found. • No web item explicitly mentions or advertises Vans' metaverse. • No homepage banner or navigation link directs users to a virtual world entry point.	There is no evidence that the website encourages users to visit the metaverse. The absence of any web-based links or mentions indicates the virtual channel is not integrated into the online strategy.
Web highlights promotions in the metaverse	Not found. • No homepage slider or banner referencing virtual asset sales (e.g., "Virtual asset 50% off"). • No pop-ups nor posts mention metaverse events or in-world discounts.	There is no evidence that the website promotes any metaverse-based promotions. The absence of virtual world offers on the site indicates that this channel does not highlight in-world sales or events.

Source: Own elaboration.

Product and price integration

Product characteristics—such as visual appeal, creativity, and customisation—constitute aspects of relevant consumer value significant for digital fashion (Venturini & Columbano, 2023). In the context of fashion, aesthetic value is particularly salient in driving consumption (Sheng, 2023).

The distinctive features of virtual collections can educate users about real-world offerings (Wongkitrungrueng & Suprawan, 2023). Integrating product and price information (Table 4)—offering consistent details on product categories, descriptions, and pricing across all organisational touchpoints—minimises customer confusion and streamlines the purchasing process by obviating cross-channel comparisons (Gao et al., 2021). This integration not only maximises the utilitarian benefits of an omnichannel strategy but also strengthens consumers' cognitive processing during decision-making (Dennis et al., 2014).

The metaverse operates as a complementary channel (rather than an integrated channel to the website) by offering exclusive digital-only assets that avoid the cannibalisation of other sales channels. Additionally, the metaverse supports "digital twins"—virtual replicas of real-world products.

Metaverse enables personalisation options. Personalisation refers to the consumer's ability to make specific aesthetic choices—such as selecting colour, cut, sizing, or other design elements (Moreau et al., 2020)—resulting in unique items created exclusively for the individual. In June 2024, users could virtually "try on" and customise the virtual assets of Vans' Classic line models: Authentic model, Slip-on model, Old Skool model and SK8-HI

model. This personalised shopping journey positioned the metaverse as an intermediary between traditional online and offline retail.

Although customisation positively influences purchase intention, implementing this option presents a significant challenge for brands in the virtual environment. Brands must balance personalised offerings with the preservation of their creative identity, which underpins brand equity (Moreau et al., 2020).

Van's product lineup features classic, retro models that evoke its heritage, and notably, these designs could be customised by consumers in both physical and virtual formats in June 2024. In earlier iterations of the virtual storefront, users could modify this model via a suite of intuitive online tools and a predefined palette of options (the same as in the webpage at that moment)—an offering that underscored Vans' pioneering role in personalised footwear.

However, by the fourth quarter of 2024, these capabilities had been withdrawn: users can no longer experiment with fashion skins (no free-try on) nor tailor or customise their virtual sneakers. Conversely, different product lines are offered in the metaverse (classic, apparel, shoes, accessories). Notably, product information to date in the metaverse is primarily conveyed through aesthetic attributes such as design, colour and, in some specific products, textures.

Over the past year, the level of three-dimensional realism in Van's virtual retail environments has varied widely. Items intended to captivate users—most prominently Vans' sneakers—consistently feature the most advanced high-resolution 3D textures and full 360° renderings. This rigorous focus on visual fidelity not only deepens user immersion but also underscores the brand's dedication to showcasing its latest offerings or hero products.

Nowadays, Vans enables users to obtain specific models like the Mixxa shoe (2000s style) within its virtual version launch before their release in the physical market, as stated in the Vans World platform description. No explicit information about product real-world analogues was found. Interestingly, Vans only sporadically incorporates some detailed real-world product specifications into its virtual skin descriptions.

For example, a virtual white zip-up hoodie is described as "Stay warm and look great with the Vans White Vans Classic full-zip hoodie," mirroring the type of functional benefit that can be found on physical products. Moreover, the firm informs about both quantitative limits (restricted unit counts) and temporal constraints (limited time) on virtual products, cultivating a sense of exclusivity, scarcity, and urgency that amplifies the brand's perceived value and stimulates consumer interest and desire (Lehdonvirta, 2009).

Pricing in the metaverse introduces further complexity. Each platform (i.e. Roblox) has its in-game currency. Virtual fashion items are obtained either through purchases, priced in alternative currencies (such as Robux), or by completing in-game missions. For a relatively low fee—often one dollar or less—consumers can purchase branded digital skins, including exclusive items they might not afford in the physical market, making these offerings highly accessible and appealing to a broad player base (Venturini & Columbano, 2023; Wongkitrungrueng & Suprawan, 2023).

Micro-transactions constitute a fundamental strategy for enhancing utilitarian value within the metaverse (Venturini & Columbano, 2023) and elicit pleasure and satisfaction among consumers (Park & Lim, 2023). However, due to the low-price policy, virtual environments lack consistent pricing information for corresponding physical products. It is therefore essential to investigate how such reduced prices in virtual fashion influence brand perception.

Table 4

Integrated product and price

Integrated Product and price	Summarize instances	Synthesis
Product Description Consistency metaverse	• Information of design, colour and textures of virtual replicas found on the website. •Occasional tangible product information of virtual products. •No lists of identical fabric composition details to those shown on the brand's website nor physical product's measurements.	Earlier (Q3 2024), Vans' virtual iterations of its classic lines closely mirrored their physical counterparts—displaying identical design details, colour options, and customization elements as found on the website. Today, however, the platform's offerings combine wholly new, digitally native collections and Vans' retro and classic products with no custom options.
Stock Availability Consistency	• Not found availability status (in stock/out of stock) displayed within the virtual world.	Our analysis found no evidence of stock-level integration, indicating a complete absence of synchronized stock availability information between the metaverse and the brand's online store. Yet, virtual worlds offer stock information about virtual skins.
Cross Channel Purchase Recommendations	• Not found personalized product suggestions offered in the virtual world using data from both virtual world and website purchases.	No instances were identified of in-world recommendation features leveraging both avatar and website purchase data. Brands have yet to implement unified recommendation mechanisms across their virtual and web channels.
Price Consistency	• No correspondence was detected in either the price or the currency between the virtual environment and the website.	There is an obvious price discrepancy between the online and virtual offerings. Despite converting currencies at the prevailing exchange rate, the prices remained unmatched, confirming inconsistent pricing across channels for digital twins.

Source: Own elaboration.

Integrated transaction, Integrated information access, Integrated customer service, Integrated order fulfilment

Vans' metaverse environment disclosed a lack of integration with the brand's website—and vice versa. Specifically, metaverse and website purchase histories remain siloed; recommendation engines do not synchronsze; search and stock-check functions in the metaverse do not surface real-time website availability. The website offers no access to metaverse catalogues or promotions; virtual coupons cannot be redeemed online, and no returns for website orders can be initiated in-world. The website's support portal excludes virtual-world purchases, and there is no live-chat connection to in-world customer-service avatars. In sum, the metaverse and web environments operate as isolated silos concerning all tested forms of transactional and service integration. This result is consistent with Akter et al. (2021), who point out that the metaverse is not capable of offering personalised offers, location-based promotions, or one-to-one communication (Akter et al., 2021).

The metaverse in the customer journey map

Omnichannel marketing encompasses every customer touchpoint across the organisation (Verhoef et al.,2015), which should be employed to guide the customer journey (Alexander et al., 2024). Brands need to reassess and refine their consumer personas and customer journey mappings to accurately capture the novel interaction dynamics that emerge when physical and virtual environments converge (Dwivedi et al., 2023).

The metaverse is increasingly recognised as an initial stage in the customer journey, particularly for product awareness. The metaverse exerts its greatest influence during the pre-purchase phase of the customer journey—serving as a research hub, information source, and novel brand touchpoint by situating products in immersive, interactive environments. Consistent with earlier studies, the metaverse offers a novel, highly engaging touchpoint during the brand-awareness stage (Gao et al., 2021; Alexander et al., 2024).

This trend is also consistent with social media as a retail channel. Even though transactions on social media remain infrequent, they mainly serve as a discovery channel and still influence the purchasing decisions of younger segments (Juárez, 2025). While virtual worlds serve as significant touchpoints for a niche market, prompting users to explore physical products based on their virtual representations, emerging research is being done to understand their impact on the transactional stage.

Pioneer research states that although the Web 3.0 approach to the metaverse effectively engages consumers in earlier stages, their influence diminishes at the point of transaction (Harrisson-Boudreau et al., 2023; Alexander et al., 2025). Factors such as cryptocurrency

complexity, opaque pricing structures, purchase friction, and limited sensory immersion inhibit actual purchases (Alexander et al., 2025).

Conversely, in gaming-centric virtual environments, perceived enjoyment (fun) of the environment has been identified as a significant predictor of purchase intention (Guo & Barnes, 2009). In this regard, customisation becomes a critical determinant of purchase intention within virtual environments. The degree of enjoyment experienced in the virtual world and the ability to personalise avatars serve to enhance consumers' propensity to buy virtual products (Bleize & Antheunis, 2017). Interestingly, consumers who value tailored offers and feel a strong connection with a brand are more inclined to make purchases within the metaverse (Harrisson-Boudreau et al., 2023).

Although sales within the metaverse remain infrequent, virtual experiences can drive traffic to physical stores and e-commerce sites, suggesting a spillover effect that enriches omnichannel engagement. Metaverse resurges modestly post-purchase through community engagement and behavioural intent (Alexander et al., 2025).

Recent studies are exploring how the metaverse can function effectively as a sales channel for real-world products. Empirical studies across sectors demonstrate that positive virtual experiences reliably influence analogous real-world behaviours. Active engagement with brands in the metaverse consistently predicts stronger real-world purchases. Consumers bring their real-world needs and preferences into virtual environments; satisfying those needs virtually can translate into real-world purchases (Payal et al., 2024).

Although technology can enhance product awareness, its actual limited adoption (Dwivedi et al., 2022) may constrain its influence on consumer cognition. Metaverse leverages features such as digital-garment try-ons and digital twins. To capitalise on these dynamics, retailers should prioritise pre-purchase metaverse initiatives—such as creating digital twins of physical products and exclusive virtual skins—while addressing technical barriers to enhance immersion and seamlessness, thereby unlocking the metaverse's full potential as a complementary retail channel (Alexander et al., 2025).

The metaverse represents an ever-evolving paradigm driven by emerging technologies that enables users to encounter and explore items in contextually rich settings rather than through static images or text alone. Metaverse involves a range of advanced systems—such as 5G/6G connectivity, brain–computer interfaces, artificial intelligence (AI), computer vision, natural language processing, intelligent voice interfaces, virtual reality (VR), augmented reality (AR), and mixed reality (MR) (Wang et al., 2021).

Through the use of VR, AR, and MR technologies, head-mounted displays, haptic gloves, and motion trackers, virtual worlds enable hybrid experiences in which consumers can interact in innovative ways with brands and products using virtual reality (Flavián et al., 2019; Dwivedi et al., 2022). These technologies enhance consumer fashion experiences through virtual fitting rooms and immersive store and product simulations that engage multiple sensory channels and leverage embodied cognition.

The metaverse: opportunities and challenges

Fashion brands—ranging from luxury houses to fast fashion brands—have assumed a pioneering role on the metaverse as a retail channel (Kniazeva et al., 2023; Dwivedi et al., 2023). The metaverse presents a compelling opportunity for omnichannel distribution by effectively extending retailers' physical footprints into boundless digital realms. Retailers can establish virtual storefronts in which their complete product assortments are on display without spatial restrictions. Concurrently, consumers are poised to purchase entirely new categories of digital goods, from avatar apparel to coordinated digital twin collections, thereby unlocking unique commercial opportunities exclusive to the metaverse (Dwivedi et al., 2023).

The rise of digital assets creates an entirely new revenue stream. Also, luxury and mass market brands can capitalise on consumers' willingness to pay premium prices for exclusive virtual goods (Sheng, 2023). Beyond transactional benefits, the metaverse infrastructure will accelerate low-cost concept testing, prototyping, and A/B experiments, enabling rapid product development (Rauschnabel et al., 2022; Dwivedi et al., 2022).

The metaverse can potentially offer richer, more valid consumer data through immersive interactions (Crespo-Pereira & Sánchez-Amboage, 2024). The behavioural data generated from in-world navigation to avatar customisation choices and virtual purchase histories—empowers retailers to optimise touchpoints through data-driven personalisation, ensuring that recommendations, store layouts, and promotional activities resonate across both virtual and physical channels (Dwivedi et al., 2022).

Integrating the metaverse into an omnichannel distribution strategy presents a host of technical and social challenges. Complex transactional workflows within the metaverse present a significant obstacle to its adoption as a viable retail channel (Alexander et al., 2024). Accurate 3D product representation remains a technical hurdle as well, since texture, fit, and scale must be rendered convincingly to maintain consumer trust (Dwivedi et al., 2022).

The metaverse coexists with both online and offline channels; the choice of channel is contingent upon the consumer's motivation (hedonic, utilitarian, symbolic). Within the metaverse, value co-creation plays a central role, emerging not only through interactions

between retailers and consumers but also between consumers and the underlying technology. Users can co-create value in the metaverse through unique designs and experiences that enrich the ecosystem. Future research should assess the extent to which the metaverse addresses diverse consumer needs (Dwivedi et al., 2022).

Retailers must also reconcile uncertain business models. The dominant technology providers wield outsized influence over platform governance, data policies, and community norms, raising trust concerns for retailers who must safeguard customer privacy and ensure fair competitive conditions (Dwivedi et al., 2022; JP Morgan, 2022).

An extensive collection of biometric and behavioural data creates heightened privacy and security risks (Crespo-Pereira & Sánchez-Amboage, 2024). The fragmentation of virtual environments and the absence of common technical standards are challenges. Unlike the open protocols that underpin the web, multiple metaverse platforms each adopt proprietary architectures and commercial rules, forcing retailers to choose which ecosystems to support and complicating seamless interoperability across channels.

These platforms can demand specialised hardware—VR headsets, AR devices, high-bandwidth connectivity—that many consumers may lack, creating a "channel overhead" that risks excluding segments of the audience and driving them back to conventional web or brick-and-mortar outlets (Dwivedi et al., 2022). To note, a key critique of the metaverse's inability to fulfil early expectations is the notion that its existence is synonymous with VR, AR, and MR usage (Dwivedi et al., 2022). However, the metaverse is also accessible through personal computers.

Personalisation in virtual spaces also proves technically and operationally complex. Unlike one-to-one web sessions, metaverse storefronts may host numerous avatars simultaneously, each with unique preferences; dynamically tailoring environments, recommendation engines, and layouts in real time requires sophisticated load-balancing and orchestration strategies. Identity management further complicates matters: avatars can freely alter appearance and behaviour, obscuring genuine consumer intent and challenging the construction of reliable user profiles for targeted marketing. Additionally, unmoderated social interactions—ranging from harmless trolling to more serious harassment—threaten brand reputation and user well-being when governance frameworks are immature (Dwivedi et al., 2022).

Branded chatbots and virtual avatars will enhance customer support in immersive metaverse environments by acting as AI-powered agents—ranging from automated assistants to sponsored influencers—that learn and adapt through ongoing consumer interactions. This shift will move many touchpoints from human to AI representation, allowing avatars to receive personalised guidance, virtually try products (e.g., clothing), and fuse the benefits of

online convenience with in-store realism (Rauschnabel et al., 2022; Dwivedi et al., 2022). However, the deployment of AI agents also carries the potential for harmful behaviours, underscoring the need for robust moderation mechanisms (Dwivedi et al., 2022).

CONCLUSIONS

Brands must assess whether the metaverse represents a strategic communication and marketing channel and, if so, delineate its role within their overarching omnichannel framework. Our findings underscore that the metaverse integration into omnichannel strategies remains markedly underexplored, resulting in largely incongruent experiences across the customer journeys. This aligns with previous research indicating that, at present, companies predominantly manage their content and activities through a multichannel approach (Ramadan, 2023).

Brands have begun to leverage metaverse environments for information-based services—thereby enhancing consumer cognition and bolstering brand and product awareness—full omnichannel integration is yet to be developed. Preliminary steps have been undertaken to partially integrate information-oriented service dimensions (i.e. partial promotion integration and product integration). These dimensions deliver functional, utilitarian value, which at the same time enhances the cognitive aspect of the customer experience (e.g., decision-making efficiency, reduced effort, data accuracy) (Gao et al., 2021).

Beyond its aesthetic function, embedding customisation mechanisms into products delivers significant perceived benefits for users and brands. Fashion serves as a communicative instrument. Personalisation empowers consumers to express themselves following their preferences and tastes (Mogaji et al., 2023) and engage in unique experiences that enhance emotional value and affective responses (Venturini & Columbano, 2023; Bleize & Antheunis, 2017). Consequently, determining the appropriate limits on product variety and user customisation within virtual environments is essential, considering these observed user benefits and potential impact on the different stages of the customer journey.

Vans' World evidences a lack of cross-platform information, transactions and consumer-contact integration. The platform does not provide essential IRL product details, nor does it effectively link virtual retailers with real e-commerce. Although the metaverse operates as a virtual storefront, it lacks brand-specific assistant avatars to guide users.

This limitation restricts its functionality to merely showcasing product models rather than facilitating a comprehensive omnichannel shopping experience. To note, these dimensions increase service convenience and impact positively on the affective component of the

customer experience (e.g., enjoyment, pleasure, perceived trustworthiness) and contribute positively—albeit to a lesser degree—to the cognitive dimension (Gao et al., 2021).

By focusing specifically on the fashion industry, the study provides a foundation for future research and practice, as brands seek to realise the full potential of metaverse platforms in creating seamless, immersive shopping experiences. Limitations include the single-case scope—findings represent a snapshot in time and may not generalise to other brands or platforms.

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