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Impact of Technology on Customer Experience in the Metaverse Era

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ABSTRACT

Immersive technologies like AR/VR/MR redefine customer experiences and co-creating value, impacting customer experience management. Studies focus on customer experience (CX), defined as cognitive, emotional, and social responses to a firm's offerings throughout the purchase journey. This research paper provides an overview of existing literature on customer experience, exploring immersive technology's potential impact on human engagement. Integrating AI, machine learning, and chatbots enhance customer interactions, and immersive technologies like AR and VR transform product visualization, fostering emotional connections and brand loyalty. Experiential marketing and immersive technologies create memorable interactions, creating greater satisfaction and brand differentiation. The study analyzes experiential dimensions like sensory, affective, cognitive, pragmatic, and social-identity experiences, contributing to customer pleasure and satisfaction. Collaborative efforts between marketing and information systems researchers shed light on virtual consumer behaviour and its implications for managing immersive customer experiences.

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INTRODUCTION

In the not-so-distant future, a cutting-edge store was entered, which appeared straight out of a sci-fi novel. Instead of being guided by human salespeople, AI assistants led the way, analyzing preferences and suggesting personalized product recommendations. The store operated like Amazon Go, with no checkout lines or cashiers – just seamless AI-powered transactions. The virtual mirror that allowed trying on clothes without changing physically was found intriguing, with outfits projected onto the reflection in real-time. It felt like magic as various styles and colours were experimented with. Upon leaving the store, the incredible fusion of artificial intelligence and advanced technologies, making shopping an extraordinary and futuristic experience, was marvelled at.

In addition to the awe-inspiring AI salespeople and futuristic store features, this establishment was no ordinary brick-and-mortar space. It was a gateway to the metaverse, where customers could immerse themselves in a virtual store environment unlike any other. The Metaverse store was a sprawling digital realm with endless possibilities, allowing shoppers to explore various products and brands from their homes. Using VR headsets, customers could step into this virtual wonderland and browse through virtual shelves, interact with products, and even interact with other shoppers from around the globe. The Metaverse store provided a unique and captivating shopping experience, blurring the lines between reality and imagination. As the boundaries between the physical and virtual worlds continued to merge, this futuristic store became a glimpse into the endless possibilities of retail in the ever-evolving landscape of technology.

The world of interactive technologies is on the cusp of a transformative era, poised to revolutionize various dimensions of human experience. Interactive technologies such as augmented reality (AR), virtual reality (VR), and mixed reality (MR) are leading the charge in shaping the future of immersive interactions. In this research paper, we explore the potential

impact of these cutting-edge technologies on various aspects of human engagement. As users immerse themselves in this visionary world, they will witness a fusion of physical and digital realms, where information overlays enrich their surroundings, interactive virtual environments spark creativity, and the boundaries between reality and imagination blur. By delving into the potential of AR, VR, and MR to enhance human interactions, experiences, and cognitive processes, this research aims to uncover the profound possibilities in the era of immersive technologies.

In today's digital landscape, technology plays a significant role in shaping customer experience. Technology integration enables businesses to engage with customers through various channels, including websites, mobile apps, social media, and AI-powered chatbots. Automation and self-service options allow customers to access information and support whenever needed, increasing convenience and responsiveness. Moreover, technology facilitates personalization and customization, where businesses can offer individualized recommendations, targeted promotions, and personalized content based on customer data and preferences. This level of personalization creates a more meaningful and relevant experience for the customer, fostering stronger relationships with the brand.

Customer experience is one of the essential components of a successful business strategy, and technology has become an indispensable tool in creating and optimizing these experiences. By leveraging technology to deliver personalized, efficient, and consistent interactions, businesses can build lasting customer relationships and thrive in today's competitive marketplace.

CUSTOMER EXPERIENCE

Customer experience can be broadly defined as the overall impression and perception a customer has towards a brand or business based on their interactions and encounters throughout the entire customer journey. In marketing, retailing, and service management, customer experience has traditionally been regarded as something other than an independent construct. Instead, researchers have predominantly focused on measuring customer satisfaction and service quality, leaving the notion of customer experience needing to be more noticed. Despite practitioners acknowledging the significance of customer experience,

academic marketing literature exploring this subject has remained limited. Research publications on customer experience predominantly appear in practitioner-oriented journals or management books. These works often prioritize discussions on managerial actions and outcomes rather than delving into the theoretical foundations concerning the factors that influence and result from customer experience (Verhoef et al., 2009).

Customer satisfaction is achieved through a comprehensive approach beyond mere measurement. It is the result of effectively bridging the gap between customer expectations and actual experiences. Companies must delve deeply into individual customer experiences to truly succeed in fostering satisfaction, recognizing that more than brand messages and offerings are needed to shape the overall customer experience. By understanding the full range of customer interactions and emotions, businesses can proactively adapt strategies to create lasting positive impressions and strong customer relationships(Schwager & Meyer, 2007).

American multinational technology company Oracle Corporation defines customer experience as the sum total of all interactions with the customer and the brand at every point of their buying journey, from marketing to sales to customer service (Oracle, n.d.). Meanwhile, the technological research and consulting firm Gartner defines customer experience as the perceptions, emotions, and attitudes resulting from all interactions with suppliers, employees, systems, channels, and products(Gartner, n.d.). As stated by the management consulting firm McKinsey & Company, customer experience comprises all the endeavours undertaken by an organization to provide exceptional experiences, unmatched value, and foster customer growth. (McKinsey & Company, 2022).

According to marketing scholars, the customer experience emerges from interactions between a customer and a product, company, or specific part of the organization, eliciting a response. This experience is inherently individual and involves the customer's engagement on various levels - rational, emotional, sensory, physical, and spiritual. Evaluating the Customer Experience relies on comparing the customer's expectations with the stimuli encountered during interactions with the company and its offerings at different touchpoints or moments of contact (Gentile et al., 2007). According to (Becker & Jaakkola, 2020) customer experience

involves customers' non-deliberate, spontaneous responses and reactions to stimuli related to the offering throughout the customer journey. It encompasses their perceptions, emotions, and satisfaction as they engage with the company's products or services. By understanding and optimizing these interactions, businesses can create more positive and memorable experiences that foster customer loyalty and advocacy.

In the experience economy, customer experience has two dimensions: customer participation and customer connection. In the first dimension, passive participation lies in one spectrum where customers do not affect performance. In contrast, active participation lies at the other end of the spectrum, where customers play critical roles in creating the event or performance that yields the experience. The second dimension of experience involves the connection, or environmental relationship, that binds customers with the event or performance. On one end of the dimension, connection, spectrum is absorption, while immersion resides at the opposite end. This dimension delineates how deeply customers engage and interact with the experience. These two dimensions can be subdivided into four components: Educational, aesthetic, Escapist, and Entertainment experiences for the business. The entertainment and aesthetic dimensions of a business experience are characterized by passive customer participation, whereas active customer participation characterizes educational and aesthetic experiences(Pine & Gilmore, 1998).

In holistic customer experience research, a two-dimensional space has traditionally been highlighted, encompassing the digital and social realms, with the physical realm often considered the reference condition. However, recent research has seen the inclusion of a third dimension, comprising a more extensive range of physical components. As a result, the interconnectedness and integration of these three realms—social, digital, and physical—can give rise to superior customer experiences. Empathy is essential in customer experience, where customer satisfaction and motivation can be either enhanced or diminished. Since the virtual world lacks intelligence and compassion, researchers are exploring the development of virtual reality agents that exhibit social qualities and have a natural appearance. This concept has created a new branch, "socially intelligent robotics." Soon, the virtual environment interacting with the customer will display signs of empathy, including recognizing

the customer's emotional state, engaging in communication, displaying emotion, and demonstrating the ability to take the customer's perspective.

In customer experience research, another intriguing avenue investigates the dimensions of internal and subjective experiences evoked by these touchpoints, referred to as "brand experience." This line of inquiry delves into the profound impact of touchpoints on customers' perceptions, emotions, and overall subjective encounters, providing valuable insights into the intricate relationship between customers and the brand. By understanding these dimensions, businesses can enhance their understanding of customer behaviour and preferences, leading to more effective strategies for building stronger brand connections and fostering customer loyalty. Two distinct approaches have driven research on customer experience and its management. The first approach involves delineating the customer's contact with a company as a comprehensive journey comprising various experience touchpoints.

On the other hand, the second approach centres on identifying and understanding the diverse types of internal and subjective responses elicited during these interactions. By exploring these two dimensions, researchers gain valuable insights into enhancing customer experiences and optimizing business management strategies. (Hoyer et al., 2020).

TECHNOLOGICAL IMPACT ON CUSTOMER EXPERIENCE

How businesses engage and interact with their clientele has been revolutionized by the impact of technology on customer experience. From personalized interactions and seamless communication to data analytics and artificial intelligence, the landscape has been reshaped, empowering companies to deliver exceptional and tailored experiences, ultimately fostering customer satisfaction and loyalty. Furthermore, in light of these transformative changes, the models will necessitate a shift towards increased customer participation, reduced reliance on service personnel, enhanced data capture capabilities, and a blending of the traditional back and front office boundaries. These adaptations are essential as businesses strive to optimize their customer experience strategies and stay at the forefront of delivering superior and tailored interactions in the dynamic digital landscape. A journey of discovery and innovation is signified for businesses as they seek to meet their customers' ever-changing needs and expectations through the continuing evolution of technology in customer experience (Dawes

& Rowley, 1998). Over the years, a significant shift has occurred in how customers assess a company's offerings. Beyond merely scrutinizing product or service features, customers now place paramount importance on the quality of experiences they encounter while interacting with the company. These customer experiences have become crucial to overall satisfaction and brand loyalty (Prahalad & Ramaswamy, 2004). In the contemporary consumer market, co-creating value through interactions spanning services and products has become increasingly prominent. Technological advancements have triggered a power shift from businesses to customers, fostering active engagement across various industries, including retail, tourism, and education.

Furthermore, the involvement of multiple stakeholders in the value co-creation process is flourishing. As a platform for value co-creation among customers, immersive technology holds significant potential to revolutionize the design and consumption of customer experiences. This technology integration enables a deeper and more immersive engagement, providing unique opportunities to shape and enhance customer value (Tom et al., 2022).

Amidst the dynamic landscape of mixed (VR & AR) environments, social presence emerges as a compelling predictor across four realms of the experience economy. The entertainment experience is the most influential predictor of the overall visitor experience. Moreover, VR and AR entertainment experiences can enhance visitors' overall experience. Furthermore, each realm, except for the esthetic experience, significantly impacts visitors' intention to revisit the attraction. These findings underscore the pivotal role of social interaction and immersive entertainment in shaping the visitor's journey and satisfaction within such environments (Jung et al., 2016). In the last decade, the evolution of artificial intelligence (AI) and machine learning has revolutionized customer interactions through personalized recommendations and virtual assistants. The advent of chatbots and AI-powered customer service has enhanced communication and responsiveness. Moreover, the integration of augmented reality (AR) and virtual reality (VR) has transformed product visualization and immersive experiences for customers.

Additionally, the widespread use of social media platforms has facilitated real-time customer engagement and feedback, fostering social networks and user-generated content among

consumers. These technological advancements significantly shape and elevate the overall customer experience in the digital era. IoT, AR/VR/MR, and virtual assistants/chatbots/robots have radically transformed the concept of customer experience and will result in the next level of customer experience encompassing how shoppers perceive the world, interact with others, and perceive objects within their surroundings. This innovative perspective redefines the essence of the customer's journey and interactions, shedding new light on their overall experience with products, services, and brands (Hoyer et al., 2020).

Experiential marketing and technology form a dynamic and powerful duo, revolutionizing how businesses engage with customers. Experiential marketing creates immersive and memorable customer interactions by leveraging immersive technologies such as augmented reality (AR), virtual reality (VR), interactive displays, and personalized mobile apps. These tech-driven experiences enable businesses to forge deeper emotional connections, enhance brand loyalty, and drive customer satisfaction. Embracing technology in experiential marketing amplifies the impact of brand messaging and enables data-driven insights for continuous improvement and customer-centric strategies. This seamless integration of technology into experiential marketing opens new possibilities for companies to deliver exceptional and personalized experiences, ultimately differentiating themselves in today's competitive landscape. Experiential marketing consumers are rational and emotionally focused on achieving pleasurable experiences (Schmitt, 1999).

Various dimensions of experience encompass multiple touchpoints, and technology-enabled marketers aim to concentrate on these touchpoints to create immersive and memorable experiences. In the existing literature, experiential dimensions have exhibited diversity in their number and content. According to (Schmitt, 1999), marketers can create five strategic experiential modules (SEMs) for their consumers. The modules include sensory experiences (SENSE), affective experiences (FEEL), creative cognitive experiences (THINK), physical experiences, behaviours and lifestyles (ACT), and social-identity experiences that result from relating to a reference group or culture (RELATE). Gentile et al. (2007) proposed six experiential components that include sensorial, emotional, cognitive, pragmatic, lifestyle, and relational. Brand experience has four dimensions: sensory, affective, intellectual, and behavioural (Brakus et al., 2009). Pleasure is often connected with immersive and memorable

experiences. Pleasure is conceptualized hierarchically, where distinct pleasure types (intellectual, emotional, social, and physical) are integrated and unified under a higher-level unitary form of pleasure (Dubé & Le Bel, 2003).

The types of experiences are not mutually exclusive. A holistic experience can be evoked when multiple dimensions of experience are simultaneously triggered. Not all types of experience hold equal significance and relevance in the context of technological impact(Hoyer et al., 2020). This conceptual paper provides an overview of the research literature on the impact of immersive technologies on customer experience.

UNLEASHING THE SENSES: VR AND HAPTICS ENHANCING DIGITAL INTERACTIONS

VR can be defined as the utilization of a computer-generated 3D environment, referred to as a 'virtual environment' (VE), where users can navigate and potentially interact with it, thus enabling the real-time simulation of one or more of the user's five senses. 'Navigate' pertains to the ability to move around and explore the VE, while 'interact' involves the capability to select and manipulate objects within the VE (Guttentag, 2010).

Virtual Reality (VR) has evolved as a powerful tool for evaluating cognitive functions, particularly attention and memory, with episodic memory being vital for daily activities, enabling individuals to recall experiences within their spatial and temporal contexts consciously. The 360° camera, a groundbreaking technology in immersive VR, has been the focus of recent research examining its validity for assessing episodic memory. Findings reveal that a more immersive condition strengthens memory retention for specific objects, attributed to the sense of spatial presence experienced during the VR encounter. The realism provided by the 360° immersive environment and the relative sense of spatial presence play a crucial role in enhancing the memory trace, a feat non-immersive conditions fail to achieve (Ventura et al., 2019).

Another dimension of virtual reality technology has recently emerged: haptics. Haptics is the science and technology that focuses on transmitting and comprehending information through touch. This innovative field holds the potential to revolutionize how users interact with virtual environments, enhancing the sensory experience and deepening the level of immersion in

virtual reality simulations. For instance, smartwatches showcase the practical application of haptics, with distinct vibration patterns for various use cases. The user can easily discern the vibration pattern without visual confirmation, whether it is notifications from an e-commerce app or social media. This seamless integration of haptics introduces the sense of touch to digital experiences, fundamentally transforming consumers' interactions with brands in virtual realms. The personalized and intuitive feedback from smartwatches exemplifies how haptics enrich digital interactions, making them more immersive and impactful for users. With its evolution, haptic technology holds immense potential to reshape how consumers engage with brands and enhance the overall virtual experience.

Using haptics through hand movements offers valuable insights into how consumers learn and perceive objects, including product judgments. Haptics in technology can be categorized into two forms: tactile and force. Tactile haptics enable consumers to feel textures, temperature, and vibrations, while force haptics produce directional forces conveying a sense of boundaries, weight, or compliance with virtual objects' movements. This technology directly influences brand attitude and, in turn, significantly impacts purchase intentions. Consumers exposed to haptics will report higher brand attitudes and purchase intentions, demonstrating the profound impact of haptic experiences on consumer behaviour and brand perception (Mulcahy & Riedel, 2022). As haptics continue to play a pivotal role in enhancing digital interactions, businesses can harness them to craft captivating and unforgettable experiences that nurture stronger brand connections and drive purchase decisions.

VR holds significant potential as a valuable and innovative tool for studying cognitive functions and memory processes. Through continuously exploring immersive technologies, researchers can delve deeper into understanding how virtual environments influence human cognition and memory abilities in diverse contexts. This dynamic field of study opens up exciting possibilities for enhancing our knowledge of human cognition and optimizing the practical applications of immersive technologies in various domains.

ENRICHING REALITIES: EXPLORING THE IMPACT OF MIXED REALITY (MR) TECHNOLOGY

Mixed Reality (MR) is a distinct subset of Virtual Reality (VR) technologies that seamlessly blend real and virtual worlds, positioned along the "virtuality continuum." This continuum connects authentic environments to entirely virtual ones, offering users a spectrum of experiences that combine elements from both realms cohesively and interactively. Mixed Reality (MR) interfaces encompass diverse hybrid display environments grouped into several classes based on their characteristics. Class 1 includes non-immersive video displays, often termed "window-on-the-world" (WoW) displays, overlaying computer-generated images on monitors using electronic or digital techniques. For a more immersive experience, Class 2 adopts head-mounted displays (HMDs) rather than traditional monitors. Class 3 introduces HMDs with see-through capabilities, allowing computer-generated graphics to be optically superimposed on real-world scenes using half-silvered mirrors.

Similarly, Class 4 employs video viewing of the outside world, aiming for orthoscopic correspondence with the real world, creating a "video see-through" system. Class 5 involves completely graphic display environments, either fully or partially immersive, where video "reality" is integrated to enrich the user experience. Finally, Class 6 comprises completely graphic yet partially immersive environments, incorporating natural physical objects from the user's surroundings to interact with or affect the computer-generated scene. These diverse classes of MR interfaces showcase the fusion of virtual and real-world elements, providing a continuum of experiences for users to explore and engage with in novel and interactive ways (Milgram & Kishino, 1994). Mixed Reality (MR) wearable devices seamlessly integrate with the user's body, significantly enhancing immersive experiences. This integration expands the perceived sensorial stimulation and creates a more seamless and natural interaction between the user and the digital environment, further enriching the overall MR experience (Gil-López et al. 2023).

A recent study delving into consumer responses to Mixed Reality (MR) features, and their influence on behaviour reveals intriguing findings. Participants wearing MR glasses exhibited distinct patterns of interaction, including differences in frequency and duration of product engagement compared to those without MR technology. Moreover, using MR smart glasses affected purchase decisions and altered decision times, particularly for utilitarian purchases. The perceived hedonic and utilitarian values of the purchase experience were notably higher

with MR utilization, impacting future purchase intentions and the users' perceived emotional state (Gil-López et al., 2023). These results highlight the significant impact of MR on consumer behaviour and underscore its potential as a powerful tool for enhancing the overall purchase experience.

Optimizing the AI's capabilities, particularly in speech recognition and synthesis through advanced machine learning, significantly enhances MR immersion, spatial immersion, MR enjoyment, and consumers' perception of novel experiences when interacting with augmented objects. This improvement in AI quality fosters a more captivating and immersive Mixed Reality encounter, enriching the overall user experience and elevating the potential of augmented objects in the MR domain(Sung et al., 2021). Elevating engagement, engrossment, and total immersion significantly enhances overall user satisfaction when using MR devices (Dehghani et al., 2020). These factors work synergistically to create a deeply satisfying and captivating user experience, making MR technology a compelling choice for immersive interactions.

AUGMENTED REALITY (AR): SHAPING THE FUTURE OF CUSTOMER INTERACTION

The impact of Augmented Reality (AR) on customer experience has been nothing short of transformative, reshaping the way businesses engage with their clientele. Through AR technology, customer interactions have become more dynamic and interactive as virtual elements seamlessly merge with the real-world environment. This integration allows customers to visualize products in their physical space, empowering them with a deeper understanding and appreciation of the offerings before making purchase decisions. As a result, customer confidence and satisfaction have soared, leading to increased brand loyalty and advocacy. Across various industries, AR-powered applications have revolutionized the customer journey, providing personalized and immersive experiences that resonate with users on a profound level.

By leveraging AR's potential, businesses can forge meaningful connections with their audiences, elevating the overall customer experience to unprecedented heights. AR represents an interactive technology that seamlessly blends the physical and digital realms, overlaying real-time virtual annotations such as information, images, and audio onto the

user's environment. The primary objective of AR is to craft immersive brand experiences, interactive marketing campaigns, and innovative product encounters for consumers. Leveraging mobile AR in physical stores significantly enhances the shopping experience, offering consumers enriched product information surpassing virtual and traditional brick-and-mortar stores without AR.

Moreover, the inclusion of virtual product demonstrations in-store fosters increased purchase certainty, a distinct and valuable aspect of AR perceived by consumers (Moorhouse et al., 2018). AR stands apart from virtual reality (VR) by offering users a partial immersion experience in a computer-enhanced version of their physical environment. Unlike VR, which entirely replaces the user's real-world surroundings with a computer-generated environment, AR enriches the user's existing environment with digital information. The concept of AR was initially introduced as a prototype in the 1960s. However, only recently have marketers embraced this technology as a potent tool for marketing communications (Baek et al., 2018). Augmented reality provides various interactive experiences, seamlessly blending virtual elements with the real world. From immersive gaming adventures to interactive learning environments and innovative marketing campaigns, AR opens endless possibilities for engaging and captivating interactions that captivate users across various industries.

Interactive experiences with augmented reality encompass a range of activities, such as exploring product details, personalizing products, and virtually trying them on through in-store AR displays or mobile app features. The augmented reality within stores elevates brand value, streamlines customer decision-making, boosts brand engagement, and intensifies purchase intent. For example, in the restaurant industry, AR services influence consumer perceptions of dining experiences and drive preferences towards premium offerings. Moreover, in the hospitality sector, AR applications, particularly those integrated with wearable devices, impact tourists' intention to visit destinations, amplify enjoyment, enrich travel experiences, and even elevate their willingness to spend more(Du, Liu, and Wang, 2022).

Another important aspect of AR's implementation in a virtual try-on setting is its potential to reduce product returns significantly. This cutting-edge technology empowers brands to

furnish comprehensive product information, enabling consumers to explore multiple views of the item. An essential aspect of AR in virtual try-on is its capacity to augment information, instilling confidence in consumers' decisions. Interacting with the product fosters a sense of assurance, bolstering customers' confidence in their choices. AR exerts its influence across seven core themes pertinent to the customer journey. It widens product consideration, narrows the choice set, and mitigates the value of brand curation of outfits.

Additionally, AR drives hedonic value through playfulness and impacts post-purchase experiences, amplifying cognitive dissonance. At the point of purchase, AR proves beneficial in product curation and enhances hedonic value through playful interactions. Furthermore, findings demonstrate that AR can impact consumer choice confidence and further amplify cognitive dissonance during the post-purchase stage(Romano et al., 2021). AR's impact on the customer journey extends beyond the purchase phase. At the post-purchase stage, it significantly influences consumer choice confidence and amplifies cognitive dissonance, encouraging customers to reevaluate their decisions.

Moreover, AR's immersive capabilities facilitate a more enjoyable and customized shopping experience, increasing customer satisfaction and loyalty. AR fosters more profound connections between consumers and brands by providing interactive and engaging interactions with products, ultimately driving brand loyalty and advocacy. Additionally, the ability of AR to offer personalized product recommendations and virtual try-on experiences further enhances the customer's decision-making process and reduces the likelihood of product returns. Overall, AR emerges as a transformative technology that revolutionizes how consumers interact with brands, transforming the customer journey into a seamless, immersive, and memorable experience.

CONCLUSION

Marketing science delves into the study of consumer-company exchanges; human-computer interaction (HCI) centres on interactions between users and digital devices. Given the ever-evolving digital technologies impacting consumer interactions with companies, marketers must know how human-computer interaction influences marketing research and practices. Collaboration between marketing and information systems researchers is crucial to gaining

deeper insights into virtual consumer behaviour and enhancing understanding (Moutinho, 2014).

Several factors, including interactivity, realism, ease of use, and immersion, influence satisfaction with the experience. Interactivity refers to the speed and extent of users' ability to manipulate technology, stimulating product appearance and functionality and ultimately enhancing enjoyment and satisfaction. Additionally, greater interactivity is linked to improved cognitive and affective responses in consumers. Ease of use and content involvement contribute to perceived efficacy and control. Realism is another significant aspect, representing how closely a media representation aligns with real-world experiences, including plausibility, typicality, emotional realism, factuality, consistency, and perceptual quality. The plausibility, typicality, and factuality dimensions determine how much an experience relates to one's reality.

The concept of immersion, explored in contexts like gaming, VR, AR, and XR, refers to belonging or being present in a virtual environment. Immersion involves the perception of physical presence in a non-physical, virtual world. Notably, AR is considered more immersive due to its interactive and vivid nature, allowing users to experience a heightened sense of presence and engagement. These factors collectively shape the level of satisfaction consumers derive from their experiences with interactive technologies. The satisfaction with experience is intricately tied to various factors such as interactivity, realism, ease of use, and immersion. Enhanced interactivity leads to improved product exploration and enjoyment, promoting positive cognitive and affective responses in consumers. Realism is vital in bridging media representations with real-world experiences, influencing the perception of plausibility, typicality, and factuality.

Additionally, immersion fosters a sense of presence and engagement in virtual environments, with AR being particularly immersive due to its interactive and vivid nature. Moreover, the naturalness and vividness of sensorial rich mediated environments contribute significantly to the overall evaluation of experiences, making VR encounters particularly appealing to consumers. By providing a heightened level of presence and engagement, VR experiences are poised to leave a lasting impression on consumers, reflecting their preference for such

interactive technologies. As technology continues to evolve and new dimensions of experience are explored, understanding these factors will be essential for designing more compelling and satisfying consumer interactions with immersive technologies (Bialkova & Barr, 2022).

Soon, augmented reality (AR) is anticipated to play a significant role in marketing efforts, especially for body-involved products like beauty, hairdressing, shoes, and clothing, revolutionizing the virtual shopping experience for consumers. Incorporating AR into virtual stores empowers companies to maintain control over product and service delivery while influencing consumer buying behaviour. By enhancing the shopping experience through AR, consumers can project their self-image, leading to greater engagement and satisfaction in the shopping process(Huang et al., 2019).

Despite virtual reality's current popularity and continuous research, the technology's simulation environments still grapple with certain limitations that may impede the user experience. Immersion plays a pivotal role in the success of VR applications, and any disruptions in immersion can hinder the intended effects of the procedure. This may lead to user dissatisfaction with commercial head-mounted displays (HMDs) and, in specific industry-based cases, can adversely manipulate data, compromising the validity of simulations relied upon for safety-critical situations. Addressing these challenges is essential to ensure VR's continued advancement and effectiveness in various domains (DeVito & Ngalamou, 2021).

Virtual Reality (VR) escape experiences allow individuals to immerse themselves in captivating virtual environments, providing an illusion of an alternate reality - the metaverse - where they can spend countless hours interacting with engaging content. Despite the extensive discussions on usability challenges, research still needs to be conducted concerning the broader social, psychological, and physical implications of immersive Virtual Reality (VR) experiences. This gap in knowledge calls for a deeper understanding of how this technology affects individuals and demands careful consideration by both consumers and businesses before embracing its widespread use. Making informed decisions about VR's implementation is crucial to ensure positive outcomes and avert potential risks. In today's fast-paced world, people often resort to maladaptive coping strategies, such as self-indulgent escapism, due to

the pressures of their environment and social conditions. This desire to escape is fueling the search for alternative realities, leading to the development of VR consumer experience escapes evolving into a metaverse. The allure of fully immersive virtual worlds, where users experience a heightened sense of presence, can trigger feelings of euphoria and even lead to addictive behaviours (Han et al., 2022).

In the context of marketing science and human-computer interaction (HCI), understanding the factors that influence user satisfaction with interactive technologies is crucial. Interactivity, realism, ease of use, and immersion are critical in shaping consumers' experiences. Collaborative efforts between marketing and information systems researchers are essential to gain deeper insights into virtual consumer behaviour. Augmented reality (AR) can transform the virtual shopping experience for body-involved products. However, challenges with immersion in virtual reality (VR) applications need addressing to ensure optimal user experience. Despite VR's popularity, further research is needed to explore the broader social, psychological, and physical implications of immersive VR experiences. Informed decisions about VR's implementation are necessary to mitigate potential risks. The growing desire for escape and the allure of immersive virtual worlds drive the development of the VR consumer experience esc apes. However, careful consideration is needed to use this technology correctly.

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