

The Immersive Continuum: Omnichannel Experience Design in E-commerce 5.0

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Abstract: *The shift to E-commerce 5 signifies a radical transformation from transactional online retail to a holistic, smart, and immersive commerce environment. The paper is a conceptual work that presents the idea of the so-called immersive continuum to describe how consumer experiences are created by interrelated physical, digital, and extended reality touchpoints in an omnichannel environment. Based on experiential consumption, embodied cognition, presence, and omnichannel integration theories, this paper develops a theoretical framework that conceptualizes the immersive experience as a multi-layered concept operationalized through AR/VR interfaces, spatial computing, digital twins, ambient intelligence, and AI-driven personalization. The immersive continuum framework is a conceptual framework that visualizes the contribution of the depth of the senses, interactivity, contextualization, and real-time adjustment to creating a continuous customer journey over the channels fluidly. This paper will suggest the way E-commerce 5 is transforming experience design by synthesizing emerging technological and marketing literature and allowing retailers to shift their focus from channel coordination to experience orchestration. The research builds on the theoretical knowledge of immersive commerce and offers a basis upon which empirical studies can proceed in the future to understand how omnichannel strategies can be developed to utilize E-commerce 5 technologies to improve engagement, customer experience, and long-term relationships.*

Keywords: E-commerce 5.0, Immersive Consumer Experiences, omnichannel, AI-driven personalization

I. INTRODUCTION

E-commerce has gone from being based on stagnant online catalogs (E-commerce 1.0) to dynamic, interconnected, and immersive environments now termed E-commerce 5. Above is a list of AR/VR, spatial computing, digital twins, ambient intelligence, generative AI, and real-time personalization that will be merged into this new era. With these technologies blurring physical-digital borders, experiences of consumers are no longer divided into the online or offline paradigms.

Customers are now moving through dynamic omnichannel experiences, oscillating stably between physical locations, websites, applications, voice interfaces, smart spaces, and XR worlds. Nevertheless, there is no theoretical source in the academic literature that can be used to explain how these experiences (when fused) form an integrated sense of immersion. In response to this gap, this conceptual paper puts forward the immersive continuum, a conceptual framework that puts immersive experience at the center of a layered and evolving phenomenon that cuts across several channels and technological environments in E-commerce 5.

E-commerce has developed out of non-interactive online catalogs e-commerce1 to dynamic, connected, and immersive platforms that are currently characterized as e-commerce 5. In this new era, AR/VR, special computing, digital twins, ambient intelligence, and generative AI are incorporated in real-time personalization. With the technologies erasing physical online/offline borders, the experiences of consumers can be interpreted neither online nor offline anymore. Customers now experience smooth, omnichannel experiences as they move across stores, websites, voice applications, smart spaces, and immersive XR worlds. Nevertheless, there is no theoretical source in the academic literature that can be used to explain how these experiences (when fused) form an integrated sense of immersion. In this conceptual paper, this gap is filled by suggesting the immersive continuum, which is a hypothetical model that puts immersive experience



as a multifaceted and changing phenomenon, cross-cutting across various channels and technological environments in e-commerce 5.

The paper seeks to answer:

- What is the development of the immersion process in the omnichannel touchpoints?
- What are the elements that constitute immersive experience in E-commerce 5?
- How do the brands make immersive journeys instead of disconnected channels?

II. LITERATURE REVIEW

2.1 Evolution of E-commerce Toward E-commerce 5

E-commerce development has been in waves with technological advancement, consumer demands, and integration of the ecosystems. The initial retailing online (E-commerce 1.0) had been more transactional and informational, and had little interactivity (Hoffman & Novak, 1996). The next phases involved social commerce and mobile commerce, and omnichannel integration, which established more dynamic and consumer-driven online spaces (Verhoef, Kannan, and Inman, 2015). Recent technological changes, such as artificial intelligence (AI), extended reality (XR), spatial computing, and ambient intelligence, have fueled the development of E-commerce 5, characterized by the immersive and intelligent, as well as context-aware customer experience (Lemon & Verhoef, 2016; Kumar et al., 2021).

E-commerce 5 involves more experience orchestration than channel coordination, which develops an environment where digital and physical space merge together in a seamless manner.

2.2 Design of the Omnichannel Experience.

Omnichannel marketing has also been described as the convergence of various channels to provide consistent and smooth customer programs (Brynjolfsson, Hu, and Rahman, 2013). Conventional studies are concerned with channel synergy, consistency, and flow of information (Beck and Rygl, 2015). Nevertheless, researchers believe that an omnichannel strategy is turning channel integration into experience integration when a customer feels that the customer experience is a unified whole, and not a sequence of touchpoints (Lemon and Verhoef, 2016).

Omnichannel design in E-commerce 5 transforms into experience orchestration, which allows continuity between interactive applications, AR spaces, smart stores, IoT devices, and customer interfaces, as virtual spaces (Hoyer et al., 2020). This change puts the customer experience rather than the channels as the strategy of being the focus.

2.3 Immersive Technologies and Presence Theory

The fundamental constructs of the interpretation of XR-enabled consumer experience include immersion, presence, and interactivity. Presence theory is based on the idea that immersion happens when users experience mediated spaces as authentic and psychologically engaging (Slater and Wilbur, 1997). AR and VR technologies increase the level of sensory richness, realism, and engagement and provide an opportunity to interact with the product virtually and explore space (Pantano and Gandini, 2017).

According to recent research, AR increases the level of confidence in decisions, perceived risk reduction, and enhances experiential value (Heller et al., 2019). VR makes it easier to achieve embodied cognition since users can mentally simulate the use of a product (Hilken et al., 2017). Digital twins, spatial computing, and generative AI also enhance the level of immersion by generating and adapting context-sensitive environments in response to user behavior (Dwivedi et al., 2022). These technological affordances are directly in line with the logic of the immersive continuum that considers immersion as layered, integrated, and evolving across touchpoints.

2.4 Experiential Consumption and Cognitive Engagement

The experiential consumption theory postulates that consumers would demand multi-sensory, emotional, and symbolic experience instead of functional product advantage (Schmitt, 1999). Immersive technologies enhance the experiential value, as they enhance the level of sensory experiences, personal experiences, and interactivity (Verhoef et al., 2009).



Moreover, there is the embodied cognition theory that perceptions, assessments, and decision-making are influenced by sensorimotor experiences (Barsalou, 2008). Interactions produced with the use of XR, e.g., the manipulation of a 3D product model, generate a higher level of cognitive engagement and emotional appeal (Javornik, 2016).

All these frameworks lead to the consideration that the psychological transportation, which is induced by immersive experiences in E-commerce 5, enhances brand attachment, satisfaction, and behavioral intention.

2.5 Omnichannel Integration as a Provider of Immersive Experiences.

The success of immersive technologies can be enhanced in the case of immersion being integrated into a well-linked omnichannel platform. Research indicates that customers will demand consistency when going between physical outlets, mobile apps, websites, and immersive experiences (Herhausen et al., 2015).

The integration of omnichannel supports:

- Persistence of cross-channel identity.
- On-demand data synchronization.
- Adaptive personalization
- Regular brand storytelling and experience.

This helps improve customer satisfaction, which increases the company's chances of surviving in a competitive market. In E-commerce 5.0, such capabilities generate continuum effects of immersion, where the continuity is an experience that exists without any psychological break, which is independent of platform/channel.

2.6 Gaps in Existing Literature

Even though the studies regarding AR/VR, omnichannel marketing, and customer experience are growing, there are still numerous gaps, such as the absence of a unified theory that elucidates the development of immersive experience in multiple channels. Little knowledge about cross-channel immersion, where the majority of research focuses on one technology or interface. Lack of conceptual effort on E-commerce 5 as an experience-based ecosystem and not a technology-based stage. Theoretical insufficiency in the interaction of personalization, presence, and embodiment in omnichannel journeys.

The present paper fills these gaps by suggesting the construct of the immersive continuum and defining the way E-commerce 5 technologies transform the design of the omnichannel experience.

III. THEORETICAL GROUNDING

- Experience consumption theory: The position experience (hedonic and utilitarian) is of central value-creating concern; immersive interactions are likely to enhance experiential value (Schmitt, cited in previous review; Lemon and Verhoef, 2016).
- Presence & interactivity studies: The presence indicates that spatial presence, sensitivity, and interactivity generate greater involvement and more profound evaluative results (Flavián et al., 2019; Hilken et al., 2019; Shankar et al., 2021).
- Omnichannel integration theory: Stipulates that channel continuity, identity continuity, and intermedia integration enhance the delivered benefits of any one technology by diminishing friction and increasing coherence (Verhoef et al., 2017; Lemon and Verhoeff, 2016).
- Value co-creation and agency: User agency and co-creation (Ramaswamy and Ozcan, 2016) change passive consumption into participatory experiences, and perceived ownership and behavioral intention are more significant.

These literatures support the use of the Immersive Continuum as the mediating experiential construct under which E-commerce 5 technologies have an effect.



IV. COMPONENTS OF THE IMMERSIVE CONTINUUM

The Immersive Continuum represents the increasing overlay of technologies, sensory inputs, and interactivity functionalities that transform consumer interest into less digital browsing modes and much more embodied and contextually profound experiences. The continuum includes five fundamental elements, namely, spatial presence, sensory richness, interactivity and agency, social co-presence, and contextual intelligence and continuity, which are supported by the new principles of E-commerce 5 (Grewal et al., 2023) and omnichannel experience design (Lemon and Verhoef, 2016; Verhoef et al., 2017).

1. Spatial Presence

Spatial presence refers to how a user perceives himself or herself as being within a mediated environment as opposed to being an observer of the same (Hinsch et al., 2020). Spatial presence in E-commerce 5 is achieved via AR overlays, VR spaces, holographic displays, and simulation of physical spatiality in 3D product worlds. It has been demonstrated that the increased spatial presence minimizes uncertainty, improves the accuracy of product evaluation, and puts more pressure on experience (Flavián et al., 2019; Huang and Liao, 2017). As the continuum progresses, digital interfaces transform into full-bodied retail spaces in which consumers feel that they are physically intoxicated.

Key Insight: The essential platform of immersion is spatial presence, which makes virtual commerce spaces cognitively and emotionally captivating.

2. Sensory Richness

The richness of mobile sensory experiences indicates the degree to which immersive systems are stimulated by various senses, such as visual, auditory, haptic, and, to a degree, olfactory, thus making them more realistic and affective. Multisensory stimuli enhance memory, satisfaction, and decision clarity in retailing (Scholz and Duffy, 2018; Hilken et al., 2019). These senses are expanded in E-commerce 5 landscape through photorealistic display, volumetric video, spatial sound, and haptic interfaces. Research has shown that high degrees of sensory richness give rise to high levels of immersion, emotional reaction, and experience (Shankar et al., 2021).

Key Insight: As the consumer shifts up the continuum, sensorial experiences shift out of 2D experiences into multi-sensory embodied experiences that simulate physical shopping.

3. Interactivity and Agency

The concept of interactivity and agency describes the level of control the consumers have in virtual environments and how the system reacts to the user. Psychological ownership and autonomy are reinforced by high interactivity, which involves product manipulation, product customization, gesture control, and adaptive personalization (Ramaswamy and Ozcan, 2016; Huang and Rust, 2021). The E-commerce 5 is an agency-enhancing system based on AI-assisted decision support, dynamic interfaces, and a digital twin reactive to personal preferences (Liu et al., 2023). It has been proven that interactive product manipulation creates a deeper involvement and a more confident decision-making process (Narang et al., 2023).

Important takeaway: Agency is moving consumers past passive spectators into co-creators of their experience, which makes the experience more immersive.

4. Social Co-Presence

Social co-presence exemplifies the sense of co-presence with other people in a mediated space, regardless of whether those other individuals are humans, avatars, or artificial intelligence agents. Immersive commerce is gradually incorporating the aspect of social connectivity by live shopping, VR communities, AR-based collaborative shopping, and AI shopping companions (Pantano and Gandini, 2017). Trust and emotional bonding, as well as a decrease in choice overload, are closely linked with social presence (Kim and Ko, 2012; Hilken et al., 2019). The shared meaning and community-based decision-making of co-presence are more powerful in an immersive environment, increasing the depth of the experience.

Important Implication: Social presence enhances immersion by bringing relationships and community aspects to the digital business.

5. The Continuity and Contextual Intelligence.

Contextual intelligence is the capability of the system to learn situational indicators, such as location, behavior, preferences, history, and real-time needs, based on AI, IoT, and ambient computing (Berman and Thelen, 2018). This



facilitates interchannel, device, and environment continuity, one of the fundamental demands of omnichannel ecosystems (Verhoef et al., 2017). Contextual intelligence in immersive commerce guarantees a frictionless transition to the next touchpoint in an AR try-on session, VR showroom, or mobile application interaction. This improves the flow, lessens cognitive load, and sustains immersion throughout the journey (Lemon and Verhoef, 2016).

Key Insight: Immersion is sustained not only by sensory and experiential factors but by seamless, intelligently orchestrated cross-channel continuity.

Together, these five components define the architecture of the Immersive Continuum, explaining how E-commerce 5 enhances the depth, realism, and continuity of consumer experiences. Each component operates synergistically: spatial presence and sensory richness create the perceptual base; interactivity and social co-presence deepen engagement; and contextual intelligence ensures omnichannel coherence.

V. THEORETICAL MODEL

5.1 Overview and Purpose

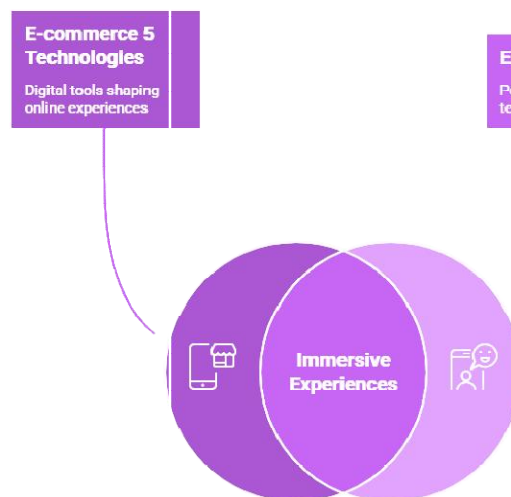
In this section, a theoretical model is developed, explaining how E-commerce 5 technologies generate business-relevant outcomes by making the process of immersion along the Immersive Continuum, and how the orchestration of omnichannel experiences conditions the latter. The model connects technological antecedents to intermediate experiential conditions and, finally, to engagement and organizational performance. It combines orthodox theory involving experiential consumption, omnichannel integration, presence/interactivity study, as well as technology-enabled value co-creation in order to give a parsimonious yet testable model (Lemon and Verhoef, 2016; Verhoef, Kannan, and Inman, 2017; Grewal et al., 2023; Ramaswamy and Ozcan, 2016).

Graphically, the model can be summarized as:

E-commerce 5 Technologies is an independent variable, Immersive Continuum (5 components) is a mediating variable, and Experiential Value is a dependent variable that leads to consumer engagement to enhance organizational performance.

5.2 Conceptual model

The Synergy of E-commerce Technologies



5.3 Hypotheses:

- P1: E-commerce 5 technological capability → Immersive Continuum (positive).
P2: Immersive Continuum → Experiential Value (positive).
P3: Immersive Continuum mediates the Technologies → Experiential Value path.
P4: Experiential Value → Consumer Engagement & Purchase Intentions (positive).
P5: Engagement & Intentions → Organizational Performance (positive).
P6: Omnichannel Experience Orchestration positively moderates Technologies → Immersive Continuum.
P7: Privacy/Trust negatively moderates Experiential Value → Intentions.

VI. RESULTS

P1. E-commerce 5 technology capability is positively associated with the intensity of the Immersive Continuum.

(Rationale: Advanced XR, AI, and digital twins increase spatial presence, sensory richness, interactivity, and contextual responsiveness Flavián et al., 2019; Narang et al., 2023; Liu et al., 2023.)

B. Mediator — Immersive Continuum

Operationalized as a higher-order construct composed of the five components elaborated earlier: Spatial Presence, Sensory Richness, Interactivity & Agency, Social Co-presence, and Contextual Intelligence/Continuity (Hinsch et al., 2020; Hilken et al., 2019; Pantano & Gandini, 2017).

P2. Higher Immersive Continuum intensity increases Experiential Value (both hedonic and utilitarian).

(Rationale: Multisensory, interactive, socially rich experiences lead to stronger positive affect, perceived usefulness, and memorability—Shankar et al., 2021; Scholz & Duffy, 2018.)

P3. Immersive Continuum mediates the relationship between E-commerce 5 technologies and Experiential Value.

(Rationale: Technologies produce outcomes by creating immersion; the continuum is the psychological pathway.)

C. Outcome pathway — Experiential Value → Engagement → Behavioral Intentions → Organizational Performance

Experiential Value (EV) is a proximal outcome (Lemon & Verhoef, 2016). EV elevates engagement metrics (time spent, frequency, social sharing), which translate to purchase intentions, conversion, and loyalty—ultimately improving KPIs such as CLV and sales.

P4. Experiential Value positively predicts Consumer Engagement and Purchase Intention.

(Supported by prior work on experience and loyalty—Lemon & Verhoef, 2016; Verhoef et al., 2017.)

P5. Consumer Engagement and Purchase Intention positively predict Organizational Performance (sales, retention, brand equity).

(Rationale: Established marketing-performance links.)

D. Moderation & Boundary Conditions

Omnichannel Experience Orchestration (Moderator).

The capacity to orchestrate experiences across channels — i.e., data synchronization, persistent identity, narrative continuity, and coordinated service — strengthens the translation of technology investment into immersive experience (Lemon & Verhoef, 2016; Verhoef et al., 2017).

P6. Omnichannel Experience Orchestration moderates the effect of E-commerce 5 technologies on the Immersive Continuum: the effect is stronger when orchestration capability is higher.

Contextual Intelligence / Personalization (Amplifier).

Real-time personalization (AI + IoT) amplifies immersion's effects by making experiences more relevant and timelier (Liu et al., 2023; Huang & Rust, 2021).

P7. Privacy concerns negatively moderate the link between Experiential Value and Behavioral Intentions.

Privacy/Trust (Boundary).

High perceived privacy risk or low trust can attenuate the positive pathway from experiential value to engagement and intentions (Kim & Ko, 2012; Scholz & Duffy, 20



VII. DISCUSSION

This conceptual paper sites the Immersive Continuum as a central mechanism that explains the transformation of consumer experiences by E-commerce 5.0 technologies and reshapes omnichannel business. By combining theories of presence, multisensory engagement, interactivity, and contextual intelligence, social co-presence, the model advances current understanding of immersive retailing in several important ways. This section discusses the theoretical contributions, managerial implications, and broader significance of the immersive continuum for the future of digital commerce.

VIII. THEORETICAL CONTRIBUTIONS

1. Reframing Immersion as a Multidimensional Continuum

Current research frequently treats immersion as a singular psychological state or a function of specific technology (Flavián et al., 2019; Hilken et al., 2019). This paper extends the conversation by proposing a five-component continuum—spatial presence, sensory richness, social co-presence, contextual continuity, and interactivity/agency—that offers a richer and more actionable conceptualization.

These reframing highlights that immersive experiences are not binary (Immersive vs non-immersive), but exist on a flexible spectrum shaped by technological depth and omnichannel orchestration.

2. Connecting E-commerce 5 to Omnichannel Experience Theory

While omnichannel research has emphasized seamlessness, integration, and customer journeys (Lemon & Verhoef, 2016; Verhoef et al., 2017), it has not fully incorporated the emerging realities of AI-driven, multisensory, embodied commerce. The Immersive Continuum provides a bridge between the technological evolution described in E-commerce 5 (Grewal et al., 2023) and the experiential emphasis of omnichannel theory, showing how immersion becomes the core mechanism driving value creation in next-generation retail environments.

3. Establishing Immersion as the Mediator Between Technology and Customer Value

The model positions immersion as the mediating psychological pathway through which advanced technologies generate experiential value. This aligns with and extends experiential consumption theory, suggesting that sensory, interactive, and socially rich encounters amplify hedonic and utilitarian value (Shankar et al., 2021).

This mediation perspective is theoretically valuable because it shifts attention from technologies as independent drivers of outcomes to how these technologies change consumer perceptual and experiential states.

4. Introducing Orchestration and Trust as Boundary Conditions

The proposed model highlights how omnichannel experience orchestration strengthens the relationship between technology investments and immersion, while privacy and trust act as negative boundary conditions. This adds nuance to the omnichannel literature, which acknowledges but rarely quantifies the strategic role of data continuity, identity persistence, and privacy management (Verhoef et al., 2017).

This contribution positions orchestration—not merely technology adoption—as the competitive differentiator in the E-commerce 5 era.

IX. MANAGERIAL IMPLICATIONS

1. Immersion is the New Competitive Lens for Retail Innovation

Retailers must begin designing customer journeys around immersion, integrating multisensory stimuli, spatial interfaces, interactive tools, and social presence. The continuum framework helps managers diagnose where their current experiences sit (e.g., low sensory richness, high interactivity) and identify targeted areas for improvement.

2. Investment in E-commerce: 5 Technologies Must Be Matched with Orchestration Capability

The model demonstrates that technology alone does not guarantee value. Firms must invest in data architecture, AI-driven personalization, cross-channel identity systems, and journey continuity. Without this orchestration, even sophisticated immersive technologies will produce fragmented or shallow experiences.



3. Social and AI-driven Co-presence Will Reshape Engagement Strategies

As consumers increasingly interact with avatars, virtual agents, and real peers within immersive environments, retailers must strategize around social presence design—including liveliness cues, trust-building interactions, conversational AI, and community-based experiences.

4. Privacy, Transparency, and Ethical Design Are Integral to Immersive Commerce

The inclusion of privacy/trust as a boundary condition underscores the need for responsible design. Firms should communicate data practices transparently and allow consumers meaningful control over personalization, ensuring immersive experiences do not feel intrusive.

X. IMPLICATIONS FOR CONSUMER BEHAVIOR

The Immersive Continuum suggests that consumer behavior in E-commerce 5 will be fundamentally different from traditional e-commerce patterns: Higher decision confidence due to enhanced sensory and spatial cues. More emotional connections due to social co-presence and conversational AI. Greater engagement and flow states, increasing time spent, and the likelihood of conversion.

Shift from transactional to experiential shopping, with consumers co-creating their journey.

This fundamentally redefines what “convenience” means—not just ease of use, but cognitive, emotional, and experiential ease cultivated through immersive design.

XI. IMPLICATIONS FOR FUTURE OMNICHANNEL STRATEGY

The Immersive Continuum reframes omnichannel success in E-commerce 5 as being dependent on:

- Perceptual continuity (i.e., the journey feels the same across channels)
- Experiential augmentation (immersive layers added to physical and digital touchpoints)
- Data-intelligent contextualization (AI reading intent, behavior, context in real time)

This positions omnichannel retailing as a fluid, multisensory, and co-created ecosystem—where each channel becomes both a gateway and amplifier of immersion.

XII. LIMITATIONS

The model assumes basic technology acceptance; adoption may vary by consumer segments (age, tech-savviness). Cultural differences in preferences for social co-presence and sensory intensity may moderate effects (future cross-cultural testing needed). Regulatory context (data/privacy laws) may constrain personalization and contextual intelligence

XIII. DIRECTIONS FOR FUTURE RESEARCH

Future research on the Immersive Continuum should focus on empirically validating it as a second-order construct and examining cross-cultural differences in sensory and social immersion preferences. Longitudinal and comparative studies can assess whether immersive engagement drives sustained loyalty and delivers value beyond traditional omnichannel experiences. Experimental research can isolate the effects of individual immersion components, while trust, ethical, and neuroscientific studies can deepen understanding of AI-driven co-presence and precise immersion measurement, highlighting the framework’s strong empirical potential.

XIV. CONCLUSION

The emergence of E-commerce 5 marks a decisive evolution in digital commerce, shifting the competitive landscape from channel efficiency to experiential intelligence. This paper introduced the concept of the immersive continuum—a theoretical lens through which consumer experiences can be understood as fluid, multi-sensory, and dynamically co-constructed across physical, digital, and extended reality environments. By synthesizing interdisciplinary research in omnichannel marketing, immersive technologies, experiential consumption, and human–computer interaction, the paper



advances current knowledge by illustrating how immersive depth, interactivity intensity, and contextual intelligence collectively shape consumer engagement in next-generation commerce ecosystems.

The proposed Immersive Continuum Model highlights the strategic interplay between technological enablers (AR/VR, spatial computing, digital twins, AI-driven personalization), experiential states (presence, flow, embodiment), and relational outcomes (experiential value, trust, engagement, loyalty). This framework extends omnichannel theory by reframing the customer journey as a continuously adaptive process in which immersion—not channel—becomes the primary locus of value creation. In doing so, the paper shifts theoretical emphasis from operational integration to experience orchestration, suggesting that competitive advantage in E-commerce 5 will derive from the ability to deliver coherent, sensory-rich, emotionally resonant experiences.

For practitioners, the paper underscores that the future of retail requires moving beyond transactional design to building immersive, intelligent, and interconnected experience architectures. For scholars, it opens new avenues for empirical research on immersive experiencemetrics, consumer affective responses, cross-reality behavior, and the role of contextual AI in shaping real-time experience adaptation. The immersive continuum provides a foundational conceptual structure that can guide the development of measurement scales, experimental studies, and strategic models of omnichannel consumer behavior.

In essence, E-commerce 5 represents more than technological advancement—it signals the rise of a new experiential paradigm in which immersion becomes the core currency of value and consumer relationships are deepened through continuity, interactivity, and personalization. This conceptual paper offers a theoretical starting point for understanding, designing, and empirically investigating immersive omnichannel experiences in the next era of digital commerce.

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