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THE METAVERSE AND CUSTOMER SERVICE MANAGEMENT: AN INTRODUCTORY REVIEW

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ABSTRACT
Purpose. This paper introduces the concept of the metaverse in accessible terms and examines its emerging relevance to customer service management (CSM), an area that remains under-examined relative to the wider metaverse-marketing and metaverse-retail literature. **Methodology.** The study adopts a narrative (basic) review of recent peer-reviewed scholarship published between 2016 and 2025, drawn from Scopus, Web of Science and Google Scholar, and synthesised thematically. **Findings.** The review indicates that immersive and AI-supported technologies can enhance customer experience, engagement and service delivery through presence, interactivity and personalisation, but that trust, cost, workforce skills and customer adoption operate as conditional constraints. **Research gap and implications.** While existing studies address customer experience in metaverse retail and marketing, few examine service quality within the specific setting of customer service management. This paper maps that gap and lays an introductory foundation for a subsequent empirical study on the impact of the metaverse on customer service management.

Keywords: *Metaverse; Customer Service Management; Immersive Technologies; Customer Experience; Virtual Reality; Service Quality; Digital Transformation.*

1. INTRODUCTION
Digital technology has steadily changed the way businesses connect with their customers — from telephone helplines to email, websites, mobile apps and social media. The latest stage in this evolution is the metaverse: a persistent, three-dimensional digital world in which people interact through avatars using technologies such as virtual reality (VR), augmented reality (AR) and artificial intelligence (AI).

The term “metaverse” combines “meta” (beyond) and “universe,” and refers to immersive online spaces where users can meet, shop, learn, work, extend services and support various productive activitiesas if they were physically present. Dwivedi et al. (2022) describe the metaverse as a convergence of the physical and digital worlds that enables real-time interaction, collaboration and virtual economic activity. Once associated mainly with gaming, it is now being explored by businesses for commerce, product visualisation and customer engagement.

This paper has two aims. The first is to introduce the metaverse in clear, non-technical terms. The second is to examine its relevance to customer service management — in particular, how immersive technologies might change the way organisations support and serve their customers. The discussion is based on a narrative review of recent academic literature.

Although a growing body of work considers the metaverse in the context of marketing and retail, comparatively little attention has been paid to customer service management as a distinct function. Customer service is the point at which service quality is most directly experienced, yet the mechanisms through which immersive environments shape service encounters remain under-theorised. This paper addresses that gap at an introductory level. In scope, the review concentrates on peer-reviewed, English-language scholarship published between 2016 and 2025 and retrieved from Scopus, Web of Science and Google Scholar.

The remainder of the paper is organised as follows.

Section 2 sets out the research methodology.

Section 3 introduces the metaverse and its enabling technologies.

Section 4 outlines customer service management and the SERVQUAL tradition.

Section 5 presents the narrative review of literature.

Section 6 discusses the impact of the metaverse on customer service management.

Section 7 offers a discussion, and

Section 8 concludes with implications, limitations and a future research agenda.

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1.1 OBJECTIVES OF THE STUDY

The study is guided by the following objectives:

Objective	Description
O1	To introduce the concept of the metaverse and its enabling technologies in accessible, non-technical terms.
O2	To position customer service management within the metaverse context and relate it to established service-quality thinking.
O3	To review recent literature on immersive technologies, customer experience and AI-mediated service.
O4	To identify the principal benefits and challenges of applying the metaverse to customer service management.
O5	To surface the research gap concerning service quality in metaverse customer service and outline directions for future empirical study.

1.2 Research Questions

Consistent with these objectives, the paper is oriented around three research questions:

- **RQ1.** What is the metaverse, and which technologies enable customer-facing applications within it?
- **RQ2.** How do immersive and AI-supported technologies influence customer experience, engagement and service delivery?
- **RQ3.** What benefits and challenges does the metaverse present for customer service management, and where does the research gap lie?

1.3 Significance of the Study

The study contributes on three levels. Theoretically, it connects the metaverse to established service-quality frameworks, extending a well-known tradition into an emerging digital environment. For practice, it offers service managers an accessible orientation to a technology their organisations are beginning to evaluate, together with a balanced account of its benefits and constraints. Academically, by isolating customer service management as an under-researched sub-domain, the paper establishes an introductory foundation and research agenda for the empirical work that follows.

2. RESEARCH METHODOLOGY

Type and design of study. This paper adopts a narrative (basic) review design. A narrative review is appropriate for an emerging and interdisciplinary topic where the aim is to introduce concepts, map the current state of knowledge and identify gaps, rather than to produce the exhaustive, protocol-driven synthesis of a full systematic review. This design suits the introductory purpose of the study and its focused evidence base.

Data sources and selection. Literature was identified through Scopus, Web of Science and Google Scholar. Search terms combined the concepts of the technology and the service domain — for example, “metaverse,” “immersive technolog*,” “virtual reality,” “augmented reality,” “customer experience,” “customer service” and “service quality.” Inclusion criteria were peer-reviewed, English-language publications addressing immersive technologies in relation to customer experience, service or the metaverse. Studies were excluded where they were purely technical (for example, hardware or network engineering) with no service or customer relevance.

Analytical approach. Selected sources were examined and organised thematically. Recurring themes — presence and immersion, customer experience and engagement, AI-mediated service, and adoption constraints — were drawn out and mapped against the study’s objectives to structure the synthesis in Sections 5 and 6.

Scope and time frame. The review covers work published between 2016 and 2025, a period that spans early conceptual treatments of virtual experience economies through to recent empirical and measurement-focused studies of metaverse customer experience. As an introductory review, the paper draws on a focused core of representative sources; a broader systematic review is identified as a natural next step.

3. UNDERSTANDING THE METAVERSE

At its simplest, the metaverse is the internet experienced in three dimensions. Instead of viewing a flat web page, a user enters a virtual space and interacts with people, products and services through a digital avatar. Several technologies make this possible:

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- **Virtual Reality (VR):** fully immersive environments accessed through headsets.
- **Augmented Reality (AR):** digital information layered onto the real world through a phone or glasses.
- **Artificial Intelligence (AI):** intelligent agents and chatbots that interact with users in a human-like way.
- **Spatial computing and avatars:** the sense of "being there" and of interacting with others in real time. Conversaly, the aggregate of all these technologies, could also be termed as XR - Extended Reality.

Together, these create a feeling of presence — the sense of being inside a shared space rather than looking at a screen. It is this quality of immersion and interactivity that distinguishes the metaverse from earlier digital channels and gives it potential for customer-facing applications.

These technologies are not merely a list of tools but the object of an established stream of adoption research. Dwivedi et al. (2022) provide a widely cited multidisciplinary definition and typology of the metaverse, classifying it across environment, interface, interaction and social value. Their account grounds the technology conceptually and situates VR, AR and AI as convergent enablers rather than isolated novelties. Understanding whether customers will in fact use these environments also draws on technology-acceptance thinking — the tradition associated with the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology — in which perceived usefulness, ease of use and social influence shape adoption. This theoretical lens is returned to in the discussion of adoption constraints in Section 6.

4. CUSTOMER SERVICE MANAGEMENT

Customer service management refers to the way an organisation handles its interactions with customers before, during and after a purchase. It covers activities such as answering queries, resolving complaints, providing product support and maintaining customer relationships. Good service management improves customer satisfaction, loyalty and, ultimately, business performance.

Traditional service channels — call centres, email and live chat — are efficient but often lack depth and personal connection. The classic way of measuring service quality is the SERVQUAL model of Parasuraman, Zeithaml and Berry (1988), which assesses five dimensions: tangibles, reliability, responsiveness, assurance and empathy. As customer expectations rise towards more personalised and interactive experiences, organisations are looking for new ways to deliver service — and the metaverse is one of them.

SERVQUAL's five dimensions translate instructively into the metaverse and provide a bridge between established theory and the new environment. Tangibles, traditionally the appearance of physical facilities and staff, become the fidelity of the virtual environment and the realism of avatars — the visual and spatial quality of the space in which service occurs. Reliability maps onto the technical stability of the platform and the consistency of the immersive experience. Responsiveness corresponds to the immediacy of AI agents and the real-time nature of interaction within the space. Assurance relates to data security, privacy safeguards and the trust customers place in an unfamiliar environment. Empathy translates into the personalisation and human-likeness of AI-mediated service and the degree to which an avatar or agent recognises individual needs. Reframing SERVQUAL in these terms supplies the theoretical scaffold that the remainder of the paper builds upon.

5. REVIEW OF LITERATURE

In this section we narratively review method set out in Section 2. The review type is a narrative (basic) review; sources were retrieved from Scopus, Web of Science and Google Scholar using the search terms and inclusion criteria described earlier, spanning 2016 to 2025. The table below summarises the core sources reviewed for this paper. It is acknowledged that a focused core of this size is characteristic of an introductory review; expanding the corpus toward a fuller systematic review — including work on virtual influencers and live commerce, digital twins in service, and adoption barriers such as privacy and technology readiness — is identified as a priority for the subsequent study.

Author (Year)	Focus	Contribution
Dwivedi, Hughes, Baabdullah et al. (2022)	Foundations	Defines the metaverse and maps its impact across marketing, retail, education and health; identifies trust, privacy and governance as the main constraints.
Buhalis, Lin & Leung (2023)	Customer experience	Positions the metaverse as a driver of customer experience and value co-creation, reshaping the service encounter through presence, avatars and interactivity.

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Author (Year)	Focus	Contribution
Gadalla, Keeling & Abosag (2016)	Service theory	Applies service-dominant logic to the virtual experience economy, showing customers act as co-creators of value in virtual settings.
Parasuraman, Zeithaml & Berry (1988)	Service quality	SERVQUAL — the classic five-dimension model (tangibles, reliability, responsiveness, assurance, empathy) used to measure perceived service quality.
Gleim, McCullough, Gabler et al. (2024)	Retail CX	Examines customer experience in metaverse retail; finds presence, interactivity and personalisation are dominant drivers of experience across the customer journey.
Rahman, Chowdhury, Bowden & Carlson (2024)	Measurement	Develops a metaverse customer-experience scale based on ten platform attributes, moving the idea from concept to a measurable construct.
Ranieri, Di Bernardo & Mele (2024)	AI service	Studies chatbot service encounters; shows AI-mediated service can improve or worsen experience depending on interaction quality and trust.
Dastane, Aggarwal, Jha & Aw (2025)	XR service	Maps customer service experience in extended reality across the customer journey and sets a future research agenda.

Table 1. Summary of reviewed literature.

Buhalis, Lin and Leung (2023) argue that the metaverse can become a driver of customer experience, allowing firms and customers to co-create value through presence and interactivity. Gleim et al. (2024) and Rahman et al. (2024) focus on customer experience in metaverse retail, finding that presence, interactivity and personalisation are the strongest drivers of a positive experience; Rahman et al. further translate this into a measurable ten-attribute scale. Ranieri et al. (2024) study AI chatbots in service encounters and show that AI-mediated service can either help or hinder, depending on the quality of interaction and the trust it inspires.

Looking more broadly, Dastane et al. (2025) map customer service experience across extended-reality environments and the whole customer journey, while Gadalla et al. (2016) provide the theoretical idea that customers are active co-creators of value in virtual settings. Across these studies a common message emerges: **immersive technologies can make service richer and more engaging,** *but their success depends on trust, ease of use and the organisation's readiness to adopt them*.

A clear gap nonetheless remains. Although these studies richly address customer experience in metaverse marketing and retail, none examines service quality specifically within the customer service management function — the post-purchase, support-and-resolution setting in which service quality is most directly tested. The measurement work of Rahman et al. (2024) and the journey mapping of Dastane et al. (2025) provide valuable building blocks, but a service-quality account tailored to metaverse customer service has not yet been developed. It is this gap that the present paper maps and that the forthcoming empirical study is designed to address.

6. IMPACT OF THE METAVERSE ON CUSTOMER SERVICE MANAGEMENT

Bringing the literature together, the metaverse *can* influence customer service management in several ways.

Richer interaction. Immersive environments allow customers and service staff to meet in a shared virtual space and to view products or problems in three dimensions, making support more visual and intuitive than a phone call or chat window. Buhalis et al. (2023) frame this as a reshaping of the service encounter through presence and interactivity, in which the customer is drawn into the interaction rather than mediated at a distance. A practical illustration is a virtual showroom in which a service agent and customer jointly inspect a 3D model of a faulty appliance, rotating and annotating it together to diagnose the issue — a form of support that flat channels cannot replicate.

Greater engagement. Immersive, interactive experiences hold customer attention and can deepen satisfaction and loyalty. Gleim et al. (2024) and Rahman et al. (2024) identify presence, interactivity and personalisation as

the dominant drivers of a positive metaverse experience, with Rahman et al. showing these can be captured in a measurable scale. The mechanism is one of heightened involvement: a customer who resolves a query inside an engaging environment is more likely to form a positive and memorable association with the brand than one who waits in a call queue.

Faster problem-solving. Virtual product models and AI assistants can speed the diagnosis and resolution of issues. Ranieri et al. (2024) show that AI-mediated service, when well designed, can improve task achievement and reduce effort in the service encounter. In practice, an AI avatar available around the clock and across languages can triage routine queries instantly and guide a customer through a virtual walkthrough of a setup or repair, escalating to a human agent only where judgement is required.

Personalisation. AI can tailor service to the individual customer within the virtual environment, adjusting guidance, tone and content to the person's history and needs. This maps directly onto the empathy dimension of service quality discussed in Section 4. Dastane et al. (2025) note, however, that personalisation is experienced differently across the stages of the customer journey, so its value depends on being delivered at the right moment rather than uniformly.

At the same time, researchers consistently point to challenges. Concerns about data privacy and security, the cost and complexity of the technology, the need for staff skills, and the question of whether customers will readily adopt these environments all temper the optimism. Viewed through a technology-acceptance lens, adoption depends on customers perceiving the environment as both useful and easy to use, and on organisations having the readiness and capability to support it. The benefits, in short, are real but conditional.

7. DISCUSSION

Read together, the literature suggests that the metaverse *does not simply add another service channel*; **it changes the nature of the service encounte**r. The recurring finding across studies is that value in immersive settings is co-created: the customer is an active participant whose sense of presence, trust and engagement shapes the outcome, rather than a passive recipient of a transaction. This resonates with the service-dominant logic advanced by Gadalla et al. (2016) and with the customer-experience emphasis of Buhalis et al. (2023) and Gleim et al. (2024).

For customer service management specifically, the evidence points to a double-edged dynamic. The same features that make immersive service powerful — richer interaction, AI mediation, personalisation — also introduce new failure modes. Ranieri et al. (2024) are explicit that poorly designed AI service can worsen the experience, and the adoption literature warns that cost, skills and trust can stall implementation. The practical challenge for service managers is therefore not whether the technology can enhance service in principle, but under what conditions it does so in practice. This tension — between the demonstrated potential of immersive service and the conditions required to realise it — is the central issue that the forthcoming empirical study seeks to examine, and it frames the implications set out in the conclusion.

8. CONCLUSION

The metaverse represents the next stage in the digital relationship between organisations and their customers. This paper has introduced the concept in simple terms and examined its relevance to customer service management. The literature suggests that immersive and AI-supported technologies can enhance customer experience, engagement and service efficiency, but that trust, cost, skills and adoption remain important hurdles. As an introductory study, this paper sets the stage for deeper, evidence-based research.

8.1 Theoretical Implications

The paper extends established service-quality thinking into an emerging environment. By reframing SERVQUAL's five dimensions in metaverse terms and connecting them to the service-dominant, value co-creation perspective, it offers a conceptual bridge between traditional service theory and immersive service settings, and identifies service quality in metaverse customer service as a construct in need of dedicated development.

8.2 Practical and Managerial Implications

For service managers, the review offers a balanced orientation to a technology under active evaluation. It suggests concrete starting points — virtual showrooms for visual troubleshooting, AI avatars for round-the-clock and multilingual support, personalised guidance calibrated to the customer journey — while flagging that value depends on interaction quality, data protection and organisational readiness. Managers are therefore advised to pilot narrowly, design AI mediation carefully, and invest in staff capability before scaling.

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8.3 Limitations

As an introductory narrative review, the study draws on a focused core of sources rather than an exhaustive systematic corpus, and it presents no primary empirical data. Its conclusions are therefore indicative rather than confirmatory, and the thematic synthesis reflects the interpretive nature of the narrative-review method.

8.4 Future Research Agenda

Future work should broaden the review into a full systematic review and then proceed to empirical testing. Priorities include developing and validating a service-quality instrument for metaverse customer service, testing the conditions under which AI-mediated immersive service enhances rather than diminishes satisfaction, and examining adoption through technology-acceptance and organisational-readiness lenses. These directions define the empirical study for which this paper provides the foundation.

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