

# Immersive netnography: a novel method for service experience research in virtual reality, augmented reality and metaverse contexts

Robert V. Kozinets

*Marshall School of Business and Annenberg  
School for Communication and Journalism, University of Southern California,  
Los Angeles, California, USA*

## Abstract

**Purpose** – As immersive technologies gain wider adoption, contemporary service researchers are tasked with studying their service experiences in ways that preserve and attend to their holistic and human characteristics. The purpose of this paper is to provide service researchers with a new qualitative approach to studying immersive technologies.

**Design/methodology/approach** – Using logic and following established methodological rules, this article develops the scope, definition and set of procedures for a novel form of netnography specifically adapted for the study of immersive technologies: immersive netnography. The research question is “How might netnography be adapted to research service experiences in virtual and augmented environments, which include and overlap with the notion of a Metaverse?”

**Findings** – Immersive netnography should be at the vanguard of phenomenological service experience studies of augmented reality, virtual reality and the Metaverse. A set of data collection, analysis, ethical and representational research practices, immersive netnography is adapted to digital media phenomena (customer and employee) that include immersive technology experiences. Developed through logical argumentation after analyzing key differences between social media and immersive technology, immersive netnography is procedurally customized for experience research in immersive technology environments.

**Research limitations/implications** – Three of the most significant practical limitations to producing high-quality netnography are rapidly changing contexts, scarce time resources and narrow researcher skillsets.

**Practical implications** – Industries and organizations may benefit from a new, holistically focused, ethically robust and culturally attuned market research method for understanding service experience in immersive technology contexts.

**Originality/value** – There have been no prior studies that develop netnography for the service research opportunities presented by immersive technologies. By applying the rigorous methodological guidance provided in this paper, future service researchers may find value in using specifically adapted qualitative research methods to study immersive technology experiences.

**Keywords** Augmented reality, Customer experience, Immersive technologies, Metaverse, Netnography, Service experience, Virtual reality, Virtual worlds

**Paper type** Conceptual paper



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## Introduction

Service researchers have been characterized as innovative, inclusive, practical, interdisciplinary and, above all, focused on the human perspective (Gustafsson and Kristensson, 2020). Whether involving a deep comprehension of individuals, people, consumers, patients, citizens, users or whatever term is used to describe the human beings who gain benefit from their interaction with organizations, the “underlying logic” of service research “is that a human understanding is needed in order to help humans to receive what can broadly be defined as a better experience” (p. 609). In pursuing this understanding, a view of experience as subjective and context-specific cuts through key perspectives of service research, including service-dominant logic (Vargo and Lusch, 2008) and service logic (Grönroos, 2008; Grönroos and Voima, 2013).

Many of the experiences that service researchers want to understand are mediated by technology, such as online purchases, virtual medical consultations or even artificial intelligence (AI)-assisted surgery (Gonçalves *et al.*, 2020; Ostrom *et al.*, 2015). As technology continually alters the forms and the very nature of service, service research is required to understand experiences that are not only networked and co-created (Chandler and Vargo, 2011; Jaakkola *et al.*, 2015) but also digitally designed and simulated (Edvardsson *et al.*, 2005). With current advancements in interfaces, these service encounters can move far beyond familiar online retailing contexts to explore services where people can collectively communicate, find and share information while also utilizing avatars, digital goods and tokens and cryptocurrencies in environments where self-expression, identity and social interaction with other human and non-human actors are key goals (Gadalla *et al.*, 2013).

Contemporary service researchers are thus tasked with an intriguing challenge – how to study a variety of merging, novel and complex technologically mediated service experiences in ways that preserve, attend to and even “elevate,” as best as we can, their holistic and human characteristics (Fisk *et al.*, 2020). This challenge can be met by answering a research question:

*RQ1.* How might netnography be adapted to research service experiences in virtual and augmented environments, which include and overlap with the notion of a Metaverse?

This question is relevant because netnography is now an accepted set of data collection, analysis, ethical and representational research procedures that use online traces gleaned from social media to generate deep human understanding (Kozinets, 2015, p. 79). However, it has the potential to be accepted and used as much more than this – a method that adapts to studies of virtual worlds and other forms of synthetic worlds and digital experiences. Taking a wide-ranging tour through the uses of netnography in research in tourism, retail and other service-related fields, Heinonen and Medberg (2018) noted that the advancement of new digital technologies and interfaces such as “wearables, smart services, and mobile apps” may “extend the boundaries of netnography and service research” (pp. 666–668). Numerous precedents in which netnography is already being adapted – without cogent explication or explicit guidelines for that adaptation, however – can begin to teach us what does and does not work well in these novel contexts.

How might netnography be adapted to research service experiences in virtual and augmented environments, which include and overlap with the notion of a Metaverse? The purpose of this article is to attempt to extend the current scope, definition and procedures of netnography to develop something novel: an immersive netnography specifically designed to assist service researchers in applying the method to service experience research of immersive technologies. The article is organized as follows. First, it provides an overview of the specific conceptual and methodological elements of immersive technologies, highlighting their novel experiences, with a focus on service research in this domain. Second, it provides a general outline of the evolution and conduct of netnography, which focuses on how the method’s emphasis on human experience has been adapted to new digital environments. The third section discusses the specific modifications to netnography’s scope, definition and practice that will heighten its usefulness and rigor for service experience research in immersive

technology contexts. A new type of immersive netnography called “immersive netnography” is discussed in the article’s last four sections, which include methodological implications, managerial implications, method limitations and future research directions.

### Extending service experience research into extended reality

Virtual reality (VR) and augmented reality (AR) are immersive technologies that simulate visual, auditory, haptic and motion realness to various extents. Mixed reality (MR) combines virtual and real-world content into the same user experience. VR and AR have already found many applications in the gaming industry. For example, *Pokémon Go*, which is an AR game launched in 2016, generated a total revenue of over 4bn USD by 2021 (Sensortower, 2020). In 2019, the US VR gaming market was worth \$7.7bn (MordorIntelligence, 2020). Beyond gaming, important applications of VR and AR technology and content have already been developed in the fields of healthcare, education, workforce development and manufacturing (Shen *et al.*, 2020).

Although the definitions are still somewhat fluid (Shen *et al.*, 2020, p. 3), the use of these digital technologies either fully immerses (in the case of VR) or superimposes (in the case of AR) users in a digital environment that maps onto, supplements, enhances or replaces the physical reality of their bodies and their surroundings. Other aspects of the immersive technology experience include bodily simulation, bodily presence and even social partners. The Metaverse is currently a compilation of imagination and futuristic engineering in which virtual worlds link seamlessly with telepresence and social media technologies to a persistent social space, a complex worlds-containing-world proffering users with an extended digital self with virtual experience (Belk, 2013). Extended reality (XR) is an umbrella term for AR, VR and MR. Table 1 provides key and extended definitions to enhance understanding of the varieties of current experiences that accompany today’s variety of digital experiences – all of which may be amenable, as future sections of the article will develop, to study using netnography.

#### *Service in immersive technology environments*

From Table 1, we now have seven new and more specific types of experience to investigate in service-related contexts such as tourism, e-commerce, education and health care. Those seven experiences are immersive, augmented, virtual, mixed, extended, world-joining and metaversal. Each is distinguished and defined but would also benefit from further precision in specification, conceptual operationalization, empirical measurement and discriminant testing. As Bolton *et al.* (2018) note in their wide-ranging exploration of customer experience challenges in digital, physical and social realms, people are already “encountering automated social presence when they are served by a robot in a restaurant or hospital, consult intelligent virtual assistants, interact with others in a simulated or virtual environment, receive medical care through telepresence and so forth” (p. 786). We need numerous rigorous methods to study not only the quantitative content of these phenomena but also the phenomenological and cultural facets of their various experiential qualities and social contexts.

Currently exemplifying the established technological utopianism of the current technology/ideology, as perfected by Apple’s branding (Kozinets, 2008) and charismatically channeled by Elon Musk (Kozinets, 2019), the next generation of technology is called the Metaverse (The Verge, 2021). The guiding vision is for a Metaverse that will be like “another reality, another world, that’s as rich as the real world” states the “vice president of simulation technology” at the computer chip maker Nvidia (2021). Most definitions of the coming Metaverse envision it based on a full-scale, persistent, interactive simulation experience that would definitely exist as a virtual world and could also use or combine AR, VR, blockchain, non-fungible tokens, social media and other technologies to create spaces for rich user interaction.

Within these interactions, and, in fact, intrinsic to them, will be service experiences where individuals interact with organizations and each other in ways that co-create value. As

Concept	Definition	Citation source	Experiential concept	Experiential definition
Immersive technology (IT)	Technologies that simulate visual, auditory, haptic and motion realities along a Reality-Virtuality continuum	Suh and Prophet (2018), Milgram and Kishino (1994)	Immersive experience	Digital and interface experiences that stimulate the physical body's senses
Augmented reality (AR)	Real-time display of computer-generated content over a real-world scene	Azuma (1997)	Augmented experience	Information and data provision services that augment through creating digital information layers on physical realities
Virtual reality (VR)	Computer-simulated, interactive and immersive virtual environments that isolate the user from the surrounding physical environment, using various types of immersion methods, such as a headset	Sherman and Craig (2002), Suh and Prophet (2018)	Virtual experience	Avatar-based socially interactive and digital experiences using immersion and extension technologies
Mixed reality (MR)	The dynamic coexistence of virtual and real content in the same space	Milgram and Kishino (1994)	Mixed experience	The lived experience of sensing the coexistence of virtual and physical contents or realities in the same space
Extended reality (XR)	An umbrella term for AR, VR and MR	Vasarainen <i>et al.</i> (2021)	Extended experience	The general and subjective lived experience of using AR, VR and MR or the Metaverse
Virtual world (VW)	Synthetic, persistent, immersive and networked multi-user environments, allowing users represented as avatars to interact with other users and in-world content in (nearly) real-time	Shen <i>et al.</i> (2020)	World-joining experience	A cultural investigation of the phenomenological sense of "living" in a virtual world, often deeply, as in a culture, and in a specific sub/culture, in all its complexity, familiarity and novelty
Metaverse	The next generation of the Internet and Web, where immersive, interconnected, shared and persistent 3D virtual spaces coexist	Nvidia (2021), The Verge (2021)	Metaversal experience	The sense of being-in-the-Metaverse, whatever that will hold; currently, it is a techno-utopian dreamscape, a corporate Rorschach

**Source(s):** Adapted and extended from Shen *et al.* (2020)

**Table 1.**  
Key definitions and adaptations to experience

Bourlakis *et al.* (2009) point out, realization of the Metaverse will lead to "the development of a multi-spaced business environment far more complex than what we are used to. The nature and characteristics of this new business environment, incorporating intertwined physical, electronic, and virtual spaces" will have very significant "economic, social, and policy implications" (p. 137).

*Salient characteristics of immersive technology to service researchers*

Table 1 already provides some sense of the additional experiential complexity of these digital worlds, with their metaversal, world-joining, extended, mixed, virtual, augmented and immersive experiences. Researchers can cross these seven partially overlapping complexities with three of the most salient service research experiences we know about: customer experiences, brand experiences and employee experiences.

*Customer experiences* are multidimensional constructs that focus on “a person’s cognitive, emotional, behavioral, sensorial, and social responses” to service or product offerings during the entire purchase and consumption process (Lemon and Verhoef, 2016, p. 71). *Brand experiences* are “subjective, internal consumer responses (sensations, feelings, and cognitions) as well as behavioral responses that are evoked by brand-related experiential attributes when consumers interact with brands [including, of course, service brands], shop for them, and consume them” (Brakus et al., 2009, p. 53). *Employee experiences* are compensated human work experiences conditioned by the role of service-provider for others (Fisk et al., 2020, p. 617). Customer, brand and employee experiences are all related in that they are sub-categories of human experiences (Fisk et al., 2020). Yet each person is located in a different place, has different identities and has different roles, and so they have different structures of culture and meaning.

An important question for service researchers to continue considering in these evolving contexts is how customer, brand and employee experiences interrelate with the various kinds of augmented, mixed, virtual, world-joining and other experiences. These contexts can be conceptualized as a type of state, as Li et al. (2001) did when they considered the emotional and psychological states consumers undergo while interacting with products in a 3-D environment (14). Given that immersive experiences such as those in virtual worlds or the proposed Metaverse are multidimensional, layered and complex, they will likely include “a combination of sensing, feeling, thinking (analytically as well as imaginatively), acting (i.e. interacting with the environment through bodily actions), and, in a social context, relating to others through the brand” (Schmitt et al., 2015, p. 170). However, there will be a crucial difference. The person experiencing them will undergo several layers of reality dissociation, as they would in a dream or when using psychoactive substances. The reality of what constitutes the “environment,” one’s own “body,” and the (tele)presence of “others” of the experiences related in Table 1’s two most rightward columns will be a computerized simulation that could be highly imaginative and interactive (even collectively emergent) in nature.

This thinking dramatically broadens Schmitt et al. (2015) by adding the conceptualizing of immersive, mixed and extended realities as separate ontological experiences, types of social and phenomenological being and acting. Ontological equivalence means that a digital experience is not any less relevant or “real” to someone experiencing it and in some sense may be hyperreal or realer-than-real. People wearing VR goggles react bodily to things such as simulated motion or sex (Park, 2018). In virtual environments, temporal aspects may shimmer, space may contract to a point, past playmates may be frankensteined at will; daydreaming, play, ideation and imagination may drift into central focus (Bogicevic et al., 2019; Boellstorff et al., 2012; Kozinets, 2019; Kozinets and Kedzior, 2009). Like brand, customer and employee experiences, virtual experiences are sensory, affective, intellectual, bodily and social – and can mediate important service relationships.

*Need for better methods to study immersion technology contexts*

An early overview of studies of virtual presence found that there were “major gaps” in knowledge because key relationships were “often only measured using questionnaires” (Schuemie et al., 2001, p. 199). As Dey et al.’s (2018, p. 20) extensive overview of the literature on AR points out, “the most popular data collection method involved filling out questionnaires,

which led to subjective ratings being the most widely used dependent measure.” Yet subjective survey ratings are not the most useful phenomenological sources for understanding the richness of human experience. Formal- and laboratory-based contexts dominated the research on immersive technologies across all fields, but the authors called for more field-based studies, which might add external validity and generalizability to actual service usage contexts. They conclude by suggesting a strong need for “ethnographic observational studies that report on how people naturally use AR applications” (Dey *et al.*, 2018). To begin introducing immersive netnography, the next section of this article explains the method of netnography, its conceptual foundation, basic steps and how it has changed over time.

### **Netnography and its trajectory**

#### *Giving business and service a rigorous new qualitative option*

Netnography should be at the vanguard of service experience studies of new immersive technology contexts. Netnography has a long history of adaptation to changing technological environments and its findings are useful both for theory development that is “discovery-oriented” (Wells, 1993), for innovation-based consumer insight discovery work for manufacturers and service providers (Bartl and Casper, 2021) and for theory testing. Researchers often use netnography to hypothesize relationships and test their significance, sometimes using qualitative conceptual inquiry and theory development to inform quantitative theory testing. For a recent and exemplary mixed-method study using netnography, see Babić Rosario *et al.* (2021).

Media technology has been mutating with networked communication technology for the past 25 years and netnography evolved as it did. Although they began with studies of online forums (newgroups) in the 1990s to better adapt to research on blogs and larger social media platforms such as Twitter (Kozinets, 2015), netnography procedures were regularly examined, explained and altered by researchers. Definitions of netnography have also changed with the times.

An early definition of netnography as a study of “the cultures and communities that emerge from on-line, computer-mediated, or Internet-based communications” (Kozinets, 1998, p. 366) emphasizes fieldwork, online cultures and communities and cultural anthropology – popular themes among ethnographers trying to understand the new socialities at the time. A 2010, much simpler definition as “participant-observational research based on online fieldwork” (Kozinets, 2010, p. 60) stays close to the defining procedure of ethnography and also emphasizes online fieldwork. Yet one of the most recent definitions of netnography overturns these earlier conceptions. Seeing netnography as “a set of general instructions relating to a specific way to conduct qualitative social media research using a combination of different research practices grouped into three distinct categories of data collection, data analysis, and data interpretation and their six overlapping stages or ‘movements’” (Kozinets, 2020, p. 7) emphasizes data and the method’s procedural elements and considers the earlier links to ethnography and anthropology inessential. Netnography and its definition have been constantly evolving (Kozinets, 2015, 2020; Kozinets and Gambetti, 2021), yet all netnographies possess common elements.

#### *Distinct and common elements of netnography studies*

Netnography has become a method not just for investigating social media content, but for inquiring into and discoursing about the significance of social media experience – for customers, employees, audiences, fans, brands and managers. As they explore networked environments, their content and related social behaviors, netnographers prioritize a human-level interpretation that recognizes the fundamentals of the rituals of social meaning within the layers of technological experience.

Netnography's ultimate axiology is phenomenological and empathic: to create awareness of and connection with human experiences in networked and digitally mediated environments. Thus, netnography complements the phenomenological, social, interactive and networked orientation of most modern service experience co-creation research, such as service-dominant logic and consumer culture theory-based service research (Helkkula, 2011; Jaakola *et al.*, 2015). Fisk *et al.*'s (2020) human experience service research point of view fits extremely well with netnography's viewpoint; they share the same holistic and humanist perspective.

Distinctive academic fields such as nursing (Eriksson and Salzmann-Erikson, 2017), public relations (Doan and Toledano, 2018) and tourism (Gholamhosseinzadeh *et al.*, 2021) have all adapted netnography to their field's specific viewpoints and research traditions. Furthermore, for-profit service corporations like American Express and Zurich Insurance; manufacturers like Ford and L'Oréal; and non-profit advocacy groups like the Campaign for Tobacco-Free Kids (Kozinets and Gambetti, 2021) have all embraced netnography and many more besides. Bartl and Casper (2021) provide a detailed overview of their innovation firm's application of netnography to the global, and especially German, business market.

*Five fundamental elements.* Despite their differences, however, netnographies all share five fundamental elements. First, they use related techniques for data gathering, analysis and representation. Second, they emphasize and analyze the qualitative character of context and content. Third, they employ the researcher's phenomenological presence in the sociotechnical experience. Fourth, they are dedicated to rigorous and frequently updated ethical procedures. And, finally, their ultimate purpose is to foster an understanding that encompasses cultural characteristics such as meanings, identities, hierarchies and rituals. Fortunately for the purposes of this article, none of these fundamental elements says that netnography should be limited to the study of social media experiences. It can be adapted to other sociotechnical experiences, such as immersive or extended service encounters.

#### *Research questions and foci within netnography*

The process of conducting netnography begins with a research question. "Service researchers seem to frequently start out from problems and challenges that organizations experience" (Gustafsson and Kristensson, 2020, p. 609) and this practical and question-driven orientation fits netnography like a key in a lock. Netnography is situated within a pragmatist research paradigm that connects the research design to a core research question. In line with this philosophy, netnography provides distinct procedural movements that move the researcher from an initial stage of appropriate research question development to the other three stages of data collection, analysis and finally research communication.

Research questions in netnography are drawn from a focus on cultural and empirical phenomena. Netnographies can usefully be employed to study two distinct types of service phenomena. One is service phenomena that exist throughout the social realm, but are discussed in electronically mediated contexts such as social media. For example, one recent netnography study examined how consumers are responsabilized for disease management (Azzari *et al.*, 2021). By exploring the narratives of people using online forums to discuss their experiences with Type 2 diabetes, the authors gained a general understanding of the concerns, hopes, fears and other beliefs of this group of service actors. The other type of service phenomenon that netnography illuminates is technologically mediated service contexts, meanings and behaviors themselves. For example, Ardley *et al.* (2020) conducted a netnography of eight LEGO Facebook groups in order to examine the extent of value co-creation activity existing in online brand communities.

#### *Methodological stages in netnography*

A systematic, consistent and well-documented set of methodological stages is the most essential principle of netnography today. Focusing the research inquiry, collecting data,

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analyzing and interpreting the data, and sharing the research are netnography's four fundamental stages and there are six "movements" within them. Each movement is characterized by precisely described research procedures that move the researcher through the conduct of the netnography. For example, there are various guidelines and specific options for choosing an appropriate research topic, translating research questions into search terms, and saving, interpreting and coding data.

In the first stage, which contains the procedural movement of initiation, the research is focused. Initiation is the inauguration of the research project, and thus the formulation of an initial research question or topical focus. During the formulation process, researchers will also create a basic research design that will guide them on the type(s) of data required to answer the question and where they can obtain it. Furthermore, research ethics are considered, such as whether institutional approvals or informed consent procedures and forms are required. Because netnography (like ethnography) reflectively elevates the value of treating "the researcher as instrument" (Sherry and Kozinets, 2001), a critical step is to consider the positionality of the researcher. Netnography incorporates the social situation of the researcher(s) – including their gender, race, age, sexual orientation, interests, background and other identity characteristics that may be relevant to the evaluation and interpretation of data and the filling in of potential perceptual blind spots that may affect the conduct and interpretation of the study.

The data collection step, which is the second stage of a netnography project, clearly distinguishes netnography both from traditional in-person ethnography as well as from big data methods that might use similar data sources. The three movements that constitute data gathering are called immersion, interaction and investigation. Data gathering in netnography tends to be the most time-consuming element, with many published netnographies featuring one year or more of regular, devoted, researcher engagement with social media platforms or other data sites.

Immersion references the netnographer's self-reflective and introspective collection of research observations and experiences. An immersion notebook, which is a specific type of field journal that captures electronically mediated research experiences, is utilized to record these experiences. The interaction movement incorporates depth interviews, saved online interaction between the researcher and other social actors or other interpersonal data collection methods such as digital diaries or mobile ethnography, into the research investigation. Investigation refers to the disciplined collection of already existing data – also called online traces – which, in most netnography to date, has come from the archives of social media platforms, blogs and forums. These online traces can assume many formats.

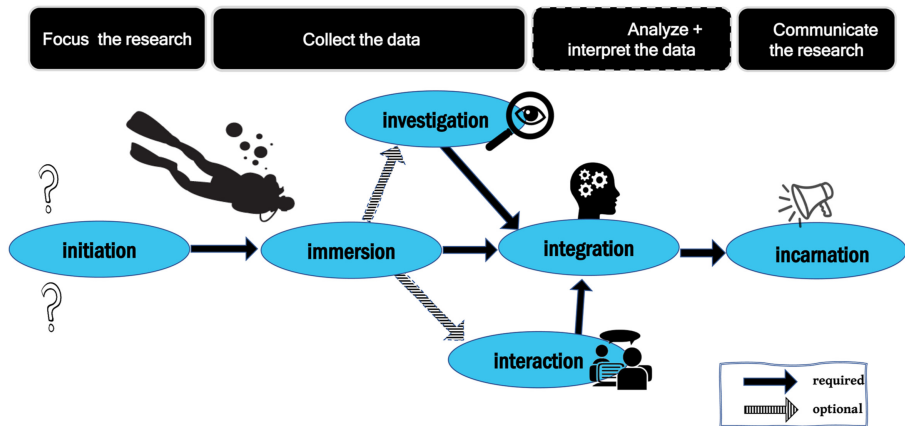
When people post images, video, or text online, or when they comment, share, or do anything else that is accessible online to anonymous or networked others, what they leave behind are *online traces*. Online traces can be textual, graphic, photographic, audiovisual, musical, commercially sponsored, genuinely grassroots, political, fannish, and many other things. (Kozinets, 2020, p. 16, *emphasis in original*)

The integration movement (which is the only movement in netnography's third stage) incorporates the coding and pattern matching of qualitative data analysis with the interpretive metaphor seeking and cultural translation procedures of hermeneutic, narrative and thematic analysis. The final movement, incarnation, is the only movement in netnography's fourth stage and encapsulates the preparation and presentation of the research output in a form appropriate to its intended audience, be it academic, industrial, governmental or public. The entire process is depicted graphically in [Figure 1](#).

#### *Ethical research guidelines for netnography*

One of netnography's methodological contributions is its careful attention to the specification and ongoing updating of detailed and precise ethical research practices (Kozinets, 2020). Netnographic procedures are based on the recognition that there is an ambiguous distinction





**Figure 1.**  
The four stages and six  
movements of  
netnography

**Source(s):** Adapted from Kozinets (2020)

between private and public data in electronically mediated spaces. This ambiguity requires careful navigation and continuous attention during and after the research process. Although researchers should avoid simple assertions and guidelines and acknowledge that ethical rules are context-dependent, they also must be aware of local and international legislation that affects their research. These include not only the United States' Code of Federal Regulations, Title 45, and the European Union's General Data Protection Regulation (GDPR), but also fair use and fair dealing laws (Kozinets, 2015).

Researchers should engage with appropriate institutional bodies in order to ensure that local and international research regulations and ethical rules are understood and carefully built into the research process. However, these ethical regulations rarely require obtaining permission from a platform such as Instagram or from individual users who have uploaded data on the site – requirements that are impractical and would make this type of research almost impossible to conduct. The data collected by researchers from public platforms is not public property and may be governed by platforms using their terms of service or use. When there are closed or moderated groups or when interaction like an interview or research website is used, researchers need to gain informed consent.

Lastly, the representation of research participants should be ethically responsible, which usually entails making people's posts anonymous or pseudonymous and may include changing quotes so that they cannot be backwards traced in search engines to expose the original post and message sender. These stipulations are especially important to follow if the material is sensitive or if the population in the study is considered vulnerable. Many of these regulations are complex and shifting, and the interested researcher is strongly advised to consult more detailed texts such as Kozinets (2020) and the Association of Internet Researchers (AoIR) online ethical research resources before embarking on their own study.

### *Broadening netnography for immersive technology research*

Netnography has evolved over its history, gradually broadening its purview and specifying its procedural elements. However, for the purposes of this article, it will be necessary to broaden the scope of netnography further by de-emphasizing netnography's traditional reliance on social media contexts and data. This broadening is not only long overdue but also a part of netnography's ongoing evolution and development, as explained in Kozinets and Gambetti (2021). The reason this definitional alteration is long overdue is that

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netnography has already been applied to study immersive technology experiences for over a decade.

In one of the first of these netnographic studies of immersion technology user experience, [Kozinets and Kedzior \(2009\)](#) longitudinally investigated embodiment, sense of reality and sense of social presence in the digital realms of Second Life's virtual worlds (Second Life is now a prototype metaverse). Their foray into Second Life stretched the prior application of netnography to the breaking point, resulting in a new version called "auto-netnography." Aligning with introspection and sociological auto-ethnography, auto-netnography advocates in-depth observation and notation by the "researcher-as-instrument" ([Sherry and Kozinets, 2001](#)) or "researcher-as-avatar" ([Kozinets, 2015](#)) to reflect on their own virtual experiences and then engage those insights into the research process.

Using auto-netnography, Kozinets and Kedzior conceptualized the impact of the creation of a new sense of world or reality, as well as the recreated body and a re-established sense of telepresence accompanying user experience in the virtual world. As a book chapter, the exploration was limited in its methodological development, and little has been done since to reconceptualize the scope, definition and core procedures of netnography for rigorous adaptation to immersive technology experiences. This article's next section explains some of the important differences between social media research and the immersive technology research experience, then adaptively reformulates netnography's scope, definition and procedures.

### **Immersive netnography**

Although netnography has been used in a wide variety of academic and industry contexts, it has primarily been developed and applied to the collection of social media data. This article uses [Gretzel's \(2017, p. 1\)](#) definition of social media as applications, websites and other online technologies that enable users "without technical expertise to easily produce and publish content." Note that Gretzel's definition does not necessarily include virtual worlds or the use of immersive technologies. As well, the prior and most recent definitions of netnography do not include these technologies. However, as noted above, netnography has already been used by researchers to study virtual worlds and virtual experiences. Thus, a broadening definition is required that moves netnography beyond its current focus on social media data and contexts to a wider context that includes immersive technology-based experiences or may blend them with social media, as in most conceptions of the Metaverse. The new definition should keep netnography's main characteristics but facilitate the study of a wider range of digital phenomena.

#### *Formulating immersive netnography's scope and definition*

The following is a suggested reformulation of netnography's definition that expands its scope to encompass experiences with immersive technology.

Immersive netnography is a specific set of data collection, analysis, ethical, and representational research practices that apply to a wide range of digital media phenomena, including immersive technology experiences such as virtual reality, augmented reality, and the Metaverse.

Beyond this expanded scope and reformulated definition, there is also a need to conceptualize differences in the research experience between the traditional context of netnography, social media platforms and their data and the immersive technology experience that characterizes AR, VR and MR – and will certainly define the Metaverse experiences.

#### *Understanding the key distinctions between social media and immersive netnography*

The general experience of conducting a netnography using social media data and using immersive technology is substantially different enough to warrant attention to

methodological adaptation. On the one hand, the netnography researcher experiences access to social media through their own profile, which can be consulted by others. That access is mediated by the presence of a screen, creating a type of third-person perspective allowing for an indirect or optional type of participation, interaction and personal contact. On the other hand, immersive, virtual, world-joining and metaversal experiences meet researchers using an avatar as a type of sensing research body that moves through a simulated physical and social space, thus providing a type of first-person perspective on the phenomenon.

In social media netnography, the researcher's access is largely invisible to others operating in the same social space, unless the researcher decides to emerge from behind the screen and post or otherwise participate in the medium. However, by their very nature, immersive technologies render the netnographer visible to others, so that there is a consistent sense of social presence or "telepresence" (Klein, 2003; Steuer, 1992), in the ongoing research dynamic.

In terms of the lastingness of the research experience, social media captures data while the researcher is away, providing a convenient archive for them to collect when they return. Immersive technologies, on the other hand, tend to offer a persistent reality that requires the direct involvement of the researcher, or they may miss important events that occur in their absence in the simulated world. Similarly, social media offers up a plethora of asynchronous data like tweets, posts and replies while the unfolding play of events in immersive technologies operate on synchronous time scales. Regarding the interface that the researcher uses to conduct their study, most netnographies of social media can be conducted on any device with a screen and speakers such as a laptop or desktop computer, mobile phone or tablet. Immersive netnography, on the other hand, may require auxiliary devices such as headsets, wrap-around 3D sound headphones, motion feedback gloves or other haptic equipment.

Data are significantly different between the social media environment and the worlds offered by immersive technology. Social media data (captured online traces) tends to consist of text, images and perhaps audiovisual or audio recordings, with relatively lower variety and relatively less data richness than the information offered by immersive technologies. Immersive technologies have higher data variety, potentially including information from websites and social media platforms and may extend to include 3D representations of virtual worlds and much higher relative data richness. The experience of capturing the data is also different between the two modalities. Whereas a netnographer using social media tends to capture that data by saving it or taking screenshots, an immersive netnographer will need to adapt by capturing different formats of rich data, perhaps by involving the useful methods of screencast videography (Kawaf, 2019) adapted to record the screen output of interface devices such as VR goggles. Table 2 shows the differences between traditional types of netnography research done on social media and the proposed immersive netnography.

#### *Adapting and altering netnography's procedural movements for service experience research*

With the methodological redefinition, expansion of scope and differentiation of the research experience in place, it now becomes possible to systematically adapt the existing six netnography movements to service experience research in immersive technology contexts. This section will synthesize and expand on information in prior sections to explain the required changes.

#### *Initiation*

Adapting the netnography movement of initiation to the study of service experience in an immersive technology context will require refocusing the research question or central topic appropriately. Whereas social media netnography often investigates topics that cut across many different online sites or platforms, it is much more likely that an immersive netnography will focus on a particular site, such as a virtual world or section of the

Category	Social media	Immersive technologies
How the researcher experiences access	Experienced through profile and mediated by screen (third-person perspective)	Experienced through avatar (first-person perspective)
How the researcher's access is experienced by others	Invisible	Visible (social presence/telepresence)
Ontological stability	Captured reality (accessible)	Persistent reality (need to be there)
Temporal engagement	Mostly asynchronous experience	Synchronous experience
Human-system interface	Screen, microphone, speakers/headphones	Headset, 3D headphones, motion feedback devices
Data type	Text, image, audiovisual, audio and other formats	3D representation which may include virtual worlds with many types of information and sensory input
Data variety	Lower	Higher
Data richness	Lower	Higher
Data recording	Captured and screenshot	Requiring different formats for rich data (video capture, e.g. Camtasia)

**Table 2.**  
Key differences between netnographic research on social media and immersive technologies

Metaverse. Like the initiation movement in social media-based netnography, the initiation stage will also consider ethical research ramifications and will benefit from a careful contemplation of the positionality of the researcher. Ethical norms in immersive environments are more ambiguous than those pertaining to social media, at least until new research practices and expectations are clearly distinguished. Social media netnography often adapts procedures to a particular platform or topic, which is usually done in advance. The research design of an immersive netnography is more likely to be emergent and based on ongoing opportunities that unfold over the course of the researcher's engagement with the technology, virtual world, virtual locations or experiences within them.

### *Investigation*

Social media netnography works with archived data or online traces from social media locations and emphasizes a search engine-driven (and algorithmically influenced) quest for culturally revelatory pieces of data (Kozinets, 2020). However, the investigation stage of an immersive netnography will involve archival data collection pertaining to the research question. Whereas this archival data collection is usually the centerpiece movement within most social media netnography, it moves to the sidelines as more of a preparatory stage in the immersive technology context. In social media netnography, researchers must familiarize themselves with the particularities of specific platforms and sites, for instance, the visual and hashtag elements of Instagram or the audiovisual and filtered formats of TikTok. In an immersive netnography, researchers will use the investigation movement to explore hardware, software and bandwidth requirements, invest in appropriate devices and equipment, become educated about the immersive technology or site's norms, guiding principles, history and other useful background information and familiarize themselves with the virtual, mixed or other types of digitally mediated immersive experience. It appears likely that this process will be more complicated and time-consuming than the one used for social media netnography.

### *Immersion*

The immersion stage moves to the limelight in the immersive technology context. As with Kozinets and Kedzior's (2009) netnography in the Second Life virtual world and Boellsorff's (2008)

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influential ethnographic work in that same context, engagement is mediated through an avatar whose telepresence is both omnipresent and highly relevant to the research experience. In immersive netnography, the particular elements of the environment of a setting (such as a virtual world) are likely to be much more varied and directly experienced than the elements would be in social media netnography. This richness and complexity will likely be taken to extremes in the Metaverse.

Compared to social media netnography, immersive netnography will almost certainly require a more intensive and committed schedule of research engagement. With netnography of virtual worlds and metaverses, the researcher will need to be present for a particular time period, which may vary by project, but likely will be at least several months, so as not to miss too many of the events that may be synchronously unfolding in their inevitable absences. The immersive technology experience itself is likely to be much more varied due to rich media. It is also likely to be much more social. It may involve the need for some sort of application that can record what is seen and heard by the researcher during the conduct of the netnography, such as varieties of [Kawaf's \(2019\)](#) screencast videography. As in social media netnography, the researcher is required to also use their immersion journal to introspect, reflect on, intellectually process and record their subjective experiences of digitally mediated encounters and experiences.

#### *Interaction*

Netnography's interaction movement in immersive technology contexts diverges into two distinct formats: interactions occurring while the researcher is engaged in the virtual setting and those occurring outside of it. There will likely be many social interactions in the course of conducting the immersion movement of netnography, and these will often need to be captured not only through the researcher's immersion journal notes but also through some other kind of data capture, such as a recording or videography. There is also the possibility to record interactions with non-human actors, interface functions and other environmental factors that can be relevant and important to the understanding of virtual service experiences. Researchers may even seek out such experiences and alter different aspects of their interaction in order to observe the outcomes of deliberately induced experiential variance.

#### *Integration*

The particular data analysis and interpretation modalities of the integration movement are similar between social media netnography and immersion netnography. There are two important challenges to the latter, however. First, there will be the importance of handling large amounts of recorded "real-time" first-person experiential data. Many social media netnographers save time by collecting text and having it coded or searched automatically or by using automated data analysis tools such as word clouds or sentiment analysis applications ([Kozinets, 2015](#)). This may not be possible – initially, at least, given current technology constraints – in immersive netnography. [Kawaf \(2019\)](#) calls the process "messy" and suggests the usefulness of the critical incident analysis technique. The second challenge will be the requirement to fully account for the phenomenological aspects of the research through the process of analysis and interpretation. To remain true to the traditions of netnography, it will be necessary to emphasize the cultural characteristics of service experiences in these contexts by focusing on the language, meaning, rituals, identities and other relevant aspects of the various immersive and digital experiences.

#### *Incarnation*

The final movement of an immersive netnography is likely to share some of the same complications as those identified in the integration movement. Forming a coherent and

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meaningful representation of the recorded experiential data will likely require video and sound editing skills in order to do justice to the phenomenological first-person stance and the rich data collected through immersive netnography. These requirements may drive researchers to seek out professional help with video editing and tagging or else to develop additional skillsets beyond those traditionally accorded to most service researchers. The development of appropriate standards for the presentation of immersive netnography is likely to be a process that is in flux at first. This could lead to interesting experimentation and creative exploration.

### *Ethical considerations*

Another complex and important area that is likely to be in flux initially and perhaps for some time is the ethical considerations that accompany conducting netnography in these immersive technology spaces. [Boellstorff et al. \(2012\)](#) provide useful guidance which may serve as a starting point for mapping out some key domains of concern. Among the suggestions they provide are: (1) disclosing the identity and intention of the researcher; (2) avoiding deception; (3) avoiding sex and intimacy with those beings one encounters in the course of the research; (4) preparing research participants for the researcher's eventual departure from the site; and (5) forging an accurate and empathic portrayal of the social actors you encounter in virtual worlds (pp. 129–149). In numerous ways that include these ethical matters, the immersive technology context begins to atavistically resemble the ethical concerns of a more traditional ethnographic engagement with a physical and face-to-face cultural context. Yet, the context is still dramatically different and novel, featuring anonymity, bots, algorithms and many other aspects not found in face-to-face ethnographic work. Legal and ethical standards for conducting ethnographic research in these contexts will undoubtedly evolve and be clarified as these technologies and their associated terrains evolve. [Table 3](#) presents a summary version of social media netnography's movements along with the adaptations of these movements to service experience research conducted in an immersive technology context.

### **Methodological implications**

As [Heinonen and Medberg \(2018, p. 669\)](#) note, “netnography is a flexible method that can be adapted for market [and service] research in most virtual arenas.” This article adapts netnography for the needs of service experience researchers interested in phenomenological investigations of immersive technology experiences. Qualitative and phenomenological approaches to service experience research – which, as [Helkkula \(2011\)](#) and [Fisk et al. \(2020\)](#) remind us, can include customer, employee and holistic human experience – are often relevant and necessary.

### *Developing methodological options for phenomenological service research*

In service-dominant logic (SDL) approaches to service experience co-creation, value is conceptualized as phenomenological in nature ([Vargo and Lusch, 2008](#)). As Vargo states in [Jaakkola et al. \(2015, p. 188\)](#), “value is always uniquely and phenomenologically determined by the beneficiary.” As a result of this, “the narrative of S-D logic has become one of resource-integrating, reciprocal-service-providing actors co-creating value through holistic, meaning laden experiences in nested and overlapping service ecosystems, governed and evaluated through institutional arrangements,” which is a rich theoretical narrative whose further elaboration and development are ongoing ([Jaakkola et al., 2015](#)). If we seek to explore service experiences using immersive netnography, there is much to consider both in service dominant logic itself and in Vargo's statements about it.

**Table 3.**  
Adapting netnography to service experience research (SXR) in an immersive technology context

Procedural movement in netnography	Definition of movement in social media-based netnography [adapted from <a href="#">Koznets (2020)</a> ]	Adaptation of movement for SXR-related immersive technology netnography
Initiation	<ul style="list-style-type: none"> <li>• Research question and design stage (required)</li> <li>• Begin project by developing an appropriate RQ1 and/or topic</li> <li>• Preparatory research design</li> <li>• Positionality of researcher considered</li> <li>• Consideration of ethical research requirements</li> <li>• Data collection stage (optional)</li> <li>• Searching, examining, and reading archived data ("online traces") from social media site locations</li> <li>• Saving culturally illuminating pieces of data</li> </ul>	<ul style="list-style-type: none"> <li>• Research question and design stage (required)</li> <li>• RQ1 likely site-specific (e.g. specific virtual world)</li> <li>• More emergent research design</li> <li>• Ethical research requirements</li> <li>• Data collection stage (required)</li> <li>• Locating, examining, performing background research on immersive technology options</li> <li>• Must include appropriate hardware, software and bandwidth</li> <li>• May require investment in devices and equipment</li> </ul>
Immersion	<ul style="list-style-type: none"> <li>• Data collection stage (required)</li> <li>• Researcher regularly reflects on their social media experiences by recording research process in immersion journal notes</li> <li>• Data copied or screen-captured in immersion journal</li> </ul>	<ul style="list-style-type: none"> <li>• Data collection stage (required)</li> <li>• Crux of IT netnography project</li> <li>• Extensive engagement in a particular immersive technology context</li> <li>• Mediated through a avatar</li> <li>• Telepresence</li> <li>• More intensive and time-bound engagement required</li> <li>• Synchronous commitments</li> <li>• Environmental factors more varied and directly experienced</li> <li>• More social</li> <li>• May involve screen capture and screencast videography</li> <li>• Regularly capturing reflections in immersion journal is still important</li> </ul>

(continued)

Procedural movement in netnography	Definition of movement in social media-based netnography [adapted from Kozmets (2020)]	Adaptation of movement for SXR-related immersive technology netnography
Interaction	<ul style="list-style-type: none"> <li>• Data collection stage (optional)</li> <li>• Interview or other direct research engagement with online participants</li> <li>• For example, social media posting and reply with participant and researcher, between webpage</li> </ul>	<ul style="list-style-type: none"> <li>• Data collection stage (required)</li> <li>• Splits into two forms: in situ and out of immersive technology context</li> <li>• Interactions conducted <i>in situ</i></li> <li>• May involve human and non-human actors</li> <li>• Additional off-site interviews or other data collection possible</li> <li>• May involve seeking and deliberately engaging in varied service experiences during IT experience</li> </ul>
Integration	<ul style="list-style-type: none"> <li>• Analysis stage (required)</li> <li>• Analysis and interpretation of collected data set with interpretation</li> <li>• Analytic coding and pattern searching combined with interpretation</li> <li>• Develop cultural understanding as a meaningful answer to research question</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis stage (required)</li> <li>• Requires reviewing, coding, and interpreting large amounts of recorded "real-time" data</li> <li>• Similar procedures to social media ethnography</li> <li>• Emphasis on cultural characteristics of service experiences</li> </ul>
Incarnation	<ul style="list-style-type: none"> <li>• Presentation stage (required)</li> <li>• Presenting or communicating research results and implications in an appropriate form for the research audience</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation stage (required)</li> <li>• Representational challenges from rich/multisensory media formats</li> <li>• May involve more video</li> <li>• More vivid data presentation formats may be required</li> <li>• New skillsets or professional assistance may be required</li> <li>• Research audience standards currently underdetermined</li> </ul>
Ethical considerations	<ul style="list-style-type: none"> <li>• All stages of research</li> <li>• Public vs private distinctions</li> <li>• Informed consent</li> <li>• Appropriate representation</li> </ul>	<ul style="list-style-type: none"> <li>• Disclosure of researcher</li> <li>• Avoiding deception</li> <li>• Gaining appropriate consent and permissions</li> <li>• Legal and ethical status of research in virtual worlds and Metaverse uncertain and evolving</li> </ul>

Table 3.



The process of immersive netnography introduced and developed in this article extends the ability of service researchers to study virtual, mixed, augmented and other types of digital service experiences in natural contexts, complementing the experimental laboratory studies (Javornik, 2016) and scenario-based survey research (Huang *et al.*, 2019a) that currently constitute the bulk of immersive technology research. Moreover, if employed carefully, immersive netnography may provide insights that are holistic and cultural but also encourage interpretation into system-level understandings of ecosystems and institutional arrangements – just as SDL requires (Vargo and Lusch, 2008).

The six procedural movements of immersive netnography are directive but also adaptable. Netnography's movements have recently been adjusted to newer social media platforms such as TikTok, Snapchat, Clubhouse and Discord. This same procedural flexibility is essential to research immersive technologies because the panoply of configurations of service experience that these new technologies will provide is still being developed and will emerge for some time. We can be relatively certain that telepresence will be a central feature of many of them. But they will also likely involve other modalities that include algorithms, social media, new functionality and nonhuman actors, such as animated chatbots. The fundamental elements of social media may even be subsumed in the Metaverse, making netnography's basis in social media studies an essential fit. Having a rigorous method that evolves with these circumstances and a body of literature where these adaptations are analyzed and mapped may be a useful arrow in the methodological quiver of future service researchers.

#### *Furthering empirical investigations of experienced ontology*

The notion of extended reality technologies suggests that these devices subjectively extend reality – an idea that is ontologically complex, conceptually rich and empirically challenging. Extended and immersive experience incorporates digital devices providing additional sensory information, such as visual elements, sounds, objects, tactile feedback, avatars, graphics and tags into pre-existing environments (Batat, 2020), and future developments are planned to add additional types of haptic and olfactory feedback. When novel service contexts such as these arise, a focus on “discovery-oriented” research draws attention to the value of qualitative methods that can identify and specify their unique and novel qualities (Wells, 1993). The body, the environment, sexuality, markets and commercial behavior are all important concepts that have been rethought through netnography in virtual worlds (Kozinets and Kedzior, 2009; Boellstorff *et al.*, 2012). Relevant to these notions are Batat's (2019) marketing-based conceptions of “phygital customer experience” in on and offline servicescapes that combine physical places and bodies with digital spaces and avatars. Immersive netnography that extends this work will provide an important lens on service experiences in an increasingly technological world.

#### *Qualitative inquiry into immersive telepresences*

In service provision and reception, a key VR experience is the sense of “telepresence” (Klein, 2003). Co-workers, friends and family were present by being telepresent for many people during the COVID pandemic; with billions now using Facetime, Zoom, Teams, Hangout, Bluejeans and many other applications, telepresence has become ubiquitous. Telepresence has been defined as a natural sense of the environment in a technological environment (Steuer, 1992). However, following a definition like this may blind researchers to the considerable slippage between what is currently considered natural and what is treated as real.

Immersive netnography is a way to study telepresence from a phenomenological service experience viewpoint. With the average American spending 93% of their lives indoors

(Klepeis *et al.*, 2001), and much of that time spent looking at digital screens, what is “natural” for people is not farms, trees, animals and the great outdoors, but rather digital information, telecommunication, mass popular culture and the sets of simulated worlds within them. Prior netnography in virtual worlds such as the work conducted by Boestorff (2008) and Kozinets and Kedzior (2009) reveals a multiplicity of ways of being present: different avatars or virtual re-embodiments; new capacities for the digital body, perhaps new senses; different “lands” or themed sections of broader “regions” within wider “worlds”; different modalities of sociality and sexuality. There may be telepresences –multiple ways to be present – rather than a single, simple telepresence. After months of following the structured methodological advice in this article and using it to observe and record service experiences within virtual worlds and metaverses, netnographers may be able to produce many new insights about telepresences and the way they interact with service provision and consumption in these virtual lands, regions and worlds.

### *Managerial implications*

There are now a substantial number of industries and organizations that are partially or directly invested in immersive technologies such as AR, VR and the emerging Metaverse. These industries and organizations can benefit from the application of a new, rigorous and phenomenological method for understanding service experience. Immersive netnography could be employed by technology companies such as Apple, Nvidia and Meta who are envisioning and designing future applications that may benefit from the feedback and insights of customers studied carefully by trained social scientists. Companies that design and market video games, virtual theme parks, entertainment, pornography or other immersive technologies and experiences may also be able to benefit from immersive netnography’s structured four-stage, six-movement approach, which was introduced and developed in this article.

Numerous other products and services are experimenting with immersive technologies such as AR to extend and develop their product offerings. For example, Bogle Winery uses AR on its “Phantom” red wine label, extending the bottle so that it seems to come alive, linking it to ghost tales and also leading to the company’s website where horror stories that brand the product in interesting ways can be found. As immersive technology extends physical products into digital storytelling, it draws consumers to websites where they can read, learn and come into contact with other consumers who can deepen their understanding and passion for the brand.

Further, some of the enthusiastic branding promises of “transmedia storytelling” begin to seem possible in such an environment (Granitz and Forman, 2015; Scolari, 2009). From artwork to comic books, running shoes to handbags and home furnishings, AR and VR applications are increasingly being applied and combined with other technologies such as QR codes and RFID systems to link the simulated world of the digital with the physical brand and its related product experiences. As these experiences are offered and developed, testing and improvements are necessary. Immersive netnography could play a useful role in assisting managers who seek a holistic, ethically robust and culturally embedded understanding of the reception of their immersive technology offerings.

Other types of organizations may benefit from this type of understanding, too. Consider how the Jogye Order of Korean Buddhism responded to the COVID pandemic by engaging followers via technology. They added virtual learning options to directly address adherents’ COVID-related challenges, and they offered virtual meditation classes worldwide for those in quarantine or lockdown (Park and Kim, 2021). What will happen when Buddhist temples offer complete virtual worlds in which to meditate and learn, where global acolytes could explore the world and life of the Buddha, join massively multi-meditator virtual meditation circles and consult with digital Bodhisattvas to refine their technique? Immersive

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netnography offers a way to understand the reception of these types of novel offerings and might also serve as an ethically, empathically and scientifically grounded voice of human experience in their development, use and maintenance. Indeed, with AI applications increasingly taking on more analytic and thinking tasks, all organizations may be moving toward a “feeling economy” in which the empathetic and emotional dimensions of work and service experiences, elements that are analyzed well by netnography, gain new relevance (Huang *et al.*, 2019b).

### Method limitations

As with any method, strength in one area calls for compensatory tradeoffs in another. As a phenomenological and qualitative research method, netnography is sometimes held to be limited by small samples and the subjective perspective, or bias, of the researcher. Critiques of the auto-ethnographic (Hayano, 1979) or auto-netnographic (Kozinets and Kedzior, 2009) orientation of immersive netnography (emphasized by the immersion movement) might be similar to some of the historical criticisms levied on introspective techniques (Wallendorf and Brucks, 1993).

Netnography leverages the researcher-as-instrument’s deep engagement in a phenomenon in order to provide a trained phenomenological viewpoint. This stance is common in prior research. McKenna’s (2020) study of social movement phenomena in a virtual world setting, for example, relied almost exclusively on online sources of data collected within a virtual world (Activision-Blizzard’s World of Warcraft). Similarly, Boellstorff’s (2008) influential work on identity in Second Life relied upon observation and longitudinal data collection within that virtual world itself, along with detailed immersion and researcher participation in that world. In the latter work, the positionality of the author as a gay male investigating sexual identity in the virtual world context was not a bias or subjective limitation but, considered as a type of sampling and analyzed with refinement, was a key source of research insight.

Sampling in immersive netnography must align with the research focus. A contextual understanding of service experiences in a virtual world could sample or observe various experiences and service incidents. The interaction movement allows for the addition of interviews or data from research webpages, which could incorporate the additional insight of dozens or even hundreds of additional phenomenological perspectives. In a virtual world project, naturalistic interviews might be conducted with dozens, or more likely, hundreds of people over the course of an immersive netnography. Netnography research projects are also commonly conducted in teams. When carefully chosen, those teams can offer valuable multiple perspectives that combine individual insights into collective ones. Skillfully interpreted, findings carefully sampled from critical incidents, particular participants and other specific contexts using immersive netnography may offer understanding that can be transferred to other sites of knowledge.

### *Dynamic contexts, time scarcity and underdeveloped skillsets*

Three of the most significant practical limitations to producing high-quality netnography are rapidly changing contexts, scarce time resources and narrow researcher skillsets. The contexts of immersive netnography are still developing and uncertain. This makes the development of universal methodological standards difficult, if not impossible. That is why this article provides general movements with flexible adaptive properties. Netnographies are also time- and skill-intensive. Quality netnography requires extended engagement and prolonged immersion in order to fully realize the cultural understanding that emerges as a result of the structured research experience. For researchers seeking to publish or perish, it is

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true that having a laboratory full of graduate assistants running experiments on other students may be a more efficient way to generate data for publication than spending a year on a team with other researchers all personally immersed and engaged in the study of a virtual world. Quality training in netnography is also currently not widely distributed, and the lack of detailed mentorship and training may be the single most important factor currently limiting immersive netnography's potential growth and application.

### Future research directions

Netnography “can offer service researchers unprecedented opportunities to access naturalistic data about customers and ... is an important method for future service research” (Heinonen and Medberg, 2018, p. 657). This article's reconceptualization of netnography into immersive netnography opens up substantial new vistas – substantive, practical and methodological – for future service experience research.

#### *The changing quality of (service) experience*

Immersive netnography raises a variety of far-reaching conceptual questions. Annette Markham, a pioneer in Internet research, asserted that research studies on new technologies play a vital role in defining what currently counts as experience, whose stories are told and how they are told (Markham, 2016). Immersive technologies may redefine what counts as a service experience. What is a “service” within an immersive context such as a virtual world? Need it be commercial? Is the entirety of the experience itself a service, or only a part of it? What is the relevant service experience design role of software designers, computer programmers, chipmakers, hardware manufacturers, as well as network providers? How do their offerings interact to provide customers and others with meaningful experiences?

#### *Advancing digital and cultural topics in service research with immersive netnography*

Moreover, this technological research is inherently cultural in focus. What are the new folk highways and buyways of The Metaverse? By applying phenomenological and cultural sensibilities – and paying close attention to meaning, values, language, expression, identity, art and ritual – researchers using immersion netnography will helpfully advance the study of immersive technologies in ways that complement quantitative modes. These topics, and others relating to a sense of reality, telepresence, self-expression, artistry, aesthetics and storytelling, will broaden the understanding of immersive technologies.

These technologies engage not only culture but also the cultural and individual imagination. Jaakkola *et al.* (2015) explain that the phenomenological interpretation of any type of service experience is not limited to a certain time or event but “can also be mediated by imagination or memory” (p. 186). How do people remember their service experiences in online spaces? Do they dream of them? Do they daydream about them? What is their emotional reality? Future research may determine to what extent wider aspects of people's human experience are accelerated or qualitatively transformed by immersive technology and the transporting experiences it produces.

As the esteemed ludic theorist Huizinga (1955) reminds us, play intimately involves playing with a sense of reality through the creation of a self-contained and separate world and the suspension of disbelief. Whether within mystical comic books, whimsical videogame quests or virtual fantasy realms such as World of Warcraft, much of contemporary entertainment culture makes the strange and the uncanny more real and immersive. Immersive technology takes this escape to the next level, providing an escape *from* ordinary reality and an escape *to* something fresh, vivid, multisensory, networked and powerful. Future service research might return to some of the hedonistic and imagination related topics

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of early experience research (Holbrook and Hirschman, 1982) in studies examining popular culture, fantasy and entertainment in the contents of immersive technology experiences.

*Decoding mythical entanglements in immersive technology service experiences*

Powerfully projective, many immersive technology service experiences are entangled with the human imagination, collective memory and even the mystical and unexplained. Just as black magicians invoke demons, so too can computer programmers create strange and seemingly sentient new forces – a point emphasized by science fiction luminary William Gibson in his 1986 novel *Mona Lisa Overdrive*. As the semiotic anthropologist Marcel Danesi (2009) points out, contemporary popular culture (to which virtual worlds both belong and contribute) is filled with occultism, mythic symbolism and the belief in mysterious hidden forces.

Increasingly, there are more and more sophisticated nonhuman actors in these environments. Future research in this area can deploy immersive netnography to understand the rich complexity of social events in virtual and metaversal worlds and also perhaps contemplate the interaction of telepresence and anthropomorphism in these immersive realms. Phenomenologically, we can apply SDL frames to the analysis of value cocreation and institutional power. We can also study the lived experience of the different socialities involved in these novel human and nonhuman interactions. When service is largely wrested away (at least on the surface) from human to digital hands, what happens? According to Davis (1998), immersive technology and virtual reality resonate with ancient myths and cautionary tales. He deciphers their warnings.

From the perspective of the mythological imagination, there's nothing particularly new about this ontological funhouse. Celtic fairy lore bulges with enchanted landscapes, while the protagonists of Hindu yarns often find themselves wandering through infinite nests of Borgesian dreamworlds . . . Today the mere existence of computer simulations, and especially VR, gives this powerful mythopoeitics a *technological* basis. That is, regardless of how convincing or realistic VR technology actually is, the presence of such stimulating machines releases the metaphysical ambiguities of the simulacrum into the temporary contemporary world, a world whose materialism, both philosophical and consumerist, makes it ill equipped to handle the archaic and tricky power of the phantasm. (pp. 248–249; emphasis in original)

*Exploring ontological breaches and technological redefinitions of reality*

Future studies could investigate further the ontological trickster power of these innovative services. When service actors are re-embodied as avatars, do they gain new sensory possibilities? Do they feel a rush of power and desire? Will people redefine their notions of what counts as an experience in these new immersive technology realms, and perhaps beyond them into the physical realities which might increasingly seem pale and lacklustre in comparison? Will these experiences reshape our understanding of what it means to be human? Can we learn something from studies of transhuman and post-human belief systems and the groups who share and communicate them?

Immersive technologies like AR, VR and the Metaverse, as well as cultural elements like aesthetics, ethics, power and identity, interact with each other in ways that are both fascinating and terrifying, as shown in the stylish techno-horror of *The Matrix* motion picture quartet. What are the current key and emerging issues that various immersive technologies such as the emerging Metaverse present to organizations, institutions and the public? With the rigorous methodological tools provided in this article, future service research netnographers now have a technique that can help them examine the implications of these developments.

*Exploring simulations as political service experiences*

It is a political public relations axiom that perception is reality, but what happens to people's sense of reality when perceptions are simulated? VR is "a computer-generated simulation of a

situation that incorporates the user, who perceives it via one or more of the senses (currently mostly vision, hearing, and touch), and interacts with it in a manner that appears to be real” (LaValle, 2017; Sherman and Craig, 2002; Wedel *et al.*, 2020, p. 443). As neuroscientists like John Lilly (1976) remind us, human beings already live in simulations of situations created by their belief systems, which create their definitions and experiences of reality. As people build “replications, models, simulations of ourselves, extensions of ourselves” and connect them into “a network of interrelated and interconnected lines of communication in a huge hive of human activities” (Lilly, 1976, p. 6), they are not only externalizing their inner simulations but networking and nesting them in ways that have further ramification on their beliefs and actions.

Virtual worlds are belief systems concretized. The organized service experiences provided through and within them also contain ideologies. With social media and information access communication and interconnection, they also contain (techno-)communities and (techno) culture. Each is nested one within the other, strata of simulation on simulation, like the layers of Russian dolls. What happens when beliefs such as racism or anti-racism, consumption or anti-consumption, left and right, fundamentalist and non-believer mix with various kinds of virtual structures and programmed ideologies in these “realities”?

#### *Future service research questions about immersive technology experiences*

Some questions that future service experience research might ponder include the following. Whose beliefs are being materialized and commercialized in the service experiences of virtual reality worlds? What conversations are being encouraged and discouraged, and why and how are they monetized? If metaverses give rise to *metafluencers* – as influencers in the metaverse are currently being called – which framings of “reality” will they propound, and which will they ridicule? What will be the influence on human society of the many virtual subcultures being marketed as commercial, social and entertainment experiences? Will they be isolating or illuminating, activist or extremist? Will virtual service experiences draw us away from physical service experiences and, if so, to what end? These considerations about the experience of telepresence, reality, culture and simulations are not merely conceptual. In immersive technology environments, they are also experiential. There are many political, cultural and ontological implications of holistic and grounded examinations of immersive technology experiences that may have profound implications for social scientists of many stripes, including service experience researchers.

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**Corresponding author**

Robert V. Kozinets can be contacted at: [rkozinets@usc.edu](mailto:rkozinets@usc.edu)