

Journal of Management Information Systems (JMIS)

Call for Submission to the Special Issue

Fostering the Design and Governance of the Metaverse

Guest Editors: Prof. [Paul Benjamin Lowry](#), Virginia Tech; Prof. [Waifong Boh](#), Nanyang Technological University; Prof. [Stacie Petter](#), Wake Forest University; Prof. [Jan Marco Leimeister](#), University of St. Gallen and University of Kassel

JMIS, a top-tier scholarly journal, invites the best papers addressing the components of the potential emergence of the Metaverse as a complement to and a potential replacement for the current Web.

The Metaverse is envisioned as a collection of technologies and initiatives intended to create a next-generation Internet (Web3) that is highly immersive, persistent, in 3D, and based on the latest developments in extended reality (XR)—an umbrella term for virtual reality (VR), mixed reality (MR), and augmented reality (AR)—as supplemented by artificial intelligence (AI), cloud computing, quantum computing, and other supporting technologies. Given the compelling and disruptive potential for the Metaverse to generate the Web3, several of the world’s leading technology companies are investing tens of billions of dollars on related software and hardware to foster this market, including Meta (famously renamed from “Facebook” as an all-in bet on the Metaverse), Microsoft, Snapchat, Amazon, NVIDIA, Epic Games, Apple, among others.

This is an opportune time for researchers to examine what can be learned from the past failed efforts of AR/VR platforms such as Second Life and over-hyped failed AR technologies like Google Glass, and to examine the many more successes that are occurring, perhaps more quietly, with XR (i.e., VR, MR, AR) in education, manufacturing, gaming, branding, healthcare, retailing, logistics, aerospace and defense, architecture, advertising, and athletics. It is these successes and disruptive business models that are likely to form what will be known as the Metaverse. However, this is no minor feat, just as the Internet as we know it took decades to develop. To create a truly persistent 3D, virtual, and immersive Metaverse, there will need to be further advances in supporting hardware (goggles, headsets, sensors), and an exponential increase in computing power, storage, and memory. If the Metaverse is to succeed it must be based on making things better for people than the status quo, and thus must foster innovative business models that are profitable, and yet foster interoperability, efficiency, remote work, reliability, fairness, accountability, open governance, inclusivity, safety, community, and to do so in a manner that is sustainable environmentally, socially and ethically.

This is the time for scientists to work with policy makers, companies, and not-for-profit organizations to break the current social media models and envision a Metaverse that can best serve collective global needs.

Accordingly, we are pleased to announce a Special Issue (SI) on this subject at *JMIS*. Importantly, information systems (IS) researchers have long contributed to the foundational research that can serve as building blocks for the Metaverse, including but not limited to XR (i.e., VR, AR, MR), avatars, agents, gamification, and gaming [1-4, 7-19, 21-28, 30-32]. Meanwhile, IS researchers are presently leading key research on the Metaverse itself [5, 6, 20, 29]. Our strong preference is for contributions of original and rigorous theory-guided behavioral or empirical data around information systems artifacts that inform design, practice, research, and the products and foundations of theory of meaningful aspects of the Metaverse. We seek any methodological approaches that are legitimate and rigorous, and that can shed light on important phenomena related to the Metaverse. However, we are not seeking review papers or those that focus on discussions of further research alone.

The following are example of research areas, questions, topics, and controversies in the Metaverse emergence on which we are soliciting papers:

Stages leading to the Metaverse: Right now, the Metaverse is hypothetical, and no one owns or controls it and many of the pieces already exist in terms of XR, AI, and hardware interfaces. The Metaverse is also not dichotomous (i.e., it exists, or it does not) but instead, it is likely to unfold in stages over time, just as the Internet as we know it unfolded over time. We thus look for further understanding of the process and intermediate stages that are likely to bring about the collective vision of the Metaverse. The integration of quantum computing into the Internet, as the computing power required for the massive VR is estimated to be 10,000 times greater than what the present supercomputers can deliver. There is also a possibility of various “metaverses” integrating with each other, such as through gaming platforms. We thus ask, how do we get the Metaverse to scale such that it is viable with compelling network effects, and what are the stages?

Applications of the Metaverse (i.e., *meta-apps*): What are the serious applications of the Metaverse that can drive innovation through novel business models that add value, and what are the implications in terms of job redefinition, organizational impact, industry transformation, inclusion, and sustainability? Is there a “killer” app for the Metaverse? How can we learn from failure such that the Metaverse can result in a dramatic improvement on earlier attempts at immersive combinations of AR and VR, such as Second Life? Related topics include: Collaboration and teamwork; gamification; higher education and corporate training; *meta-commerce* (Metaverse ecommerce and advertising); *meta-conferencing* (rethinking teleconferences); *meta-crowdsourcing* (expanding crowdsourcing to the Metaverse); *meta-fitness* (immersive fitness apps); *meta-healthcare* (medical applications of the Metaverse); *meta-socialization* (re-envisioning social networks and social media); *meta-hospitality* (Metaverse applications of travel, hospitality, and tourism); virtual objects trading; and *meta-platforms* (platform-based business models based on the Metaverse).

Governance of the Metaverse (i.e., *meta-governance*): How will a properly governed Metaverse work in terms of issues around identity, ownership, accountability, responsibility, and interoperability standards? Is it possible to govern the Metaverse in a sustainable manner (*meta-sustainability*)? Who decides what the standards are and what is allowed and not allowed? Key related topics include the following: Agents, avatar autonomy, avatars and personal identity, virtual identity, blockchain standards, content co-creation and ownership, copyright and trademarks, cryptocurrency standards, development of free open standards, governance of digital twins, intellectual property, interoperability, non-fungible tokens (NFTs), and virtual environment development standardization.

Challenges to security and privacy on the Metaverse (i.e., *meta-cybersecurity*): The Metaverse will surely foster commonly known issues around privacy, security, trust, distrust, and cybercrime, but what are the related potential contemporary issues it is likely to generate and how can these be studied and thwarted? What are the implications for government and organizational cyberthreat intelligence (CTI) programs? Related topics include the following: Accountability, authentication, censorship, computer abuse, cybercrime, counter-intelligence, cyber frauds, CTI programs, deception, deep fakes, fake news, *meta-consent* (informed consent on the Metaverse), security and privacy implications of *meta-apps*; and new forms of identity theft, malware and social engineering attacks, organized crime, privacy policies and consent, privacy issues from wearable device biometric, haptic, and sensor technologies, and security and privacy of digital twins.

Dark unintended consequences of the Metaverse (i.e., *meta-deviance*): Aside from security and privacy issues, the Metaverse will provide an expansive platform on which existing and new forms of dark and deviant behavior may thrive. How can we prevent the issues that pervade present Web and social media

platforms from exponentially infecting the Metaverse? What are the negative ramifications of and unintended consequences of the Metaverse and how can these be measured, studied, and thwarted? Related topics include: Addiction, anxiety, bigotry and hate, cyber predators, cyberbullying, cyberharassment, depression, deviance, escapism, exploitation and unfairness, fostering sedentary lifestyles, illegal pornography, lack of diversity, loneliness, meta-divide (digital divide worsened by the Metaverse), technostress, and virtual sexual abuse.

Designing immersive, interactive, and persistent 3D Metaverse applications (i.e., *meta-interactivity*):

The Metaverse will challenge and expand what we know about interactivity, immersion, and human-computer interaction (HCI), in light of the aims to make the Metaverse a 3D persistent environment that integrates digital twins, headsets, haptic technologies, Internet of Things (IoT) devices, computer vision, and sensors—as supported by high-end edge computing and the latest AI/ML techniques. Accordingly, many of the known constructs, measures, theories, and techniques in the HCI space need to be rethought, expanded, or replaced, especially to address the wide range of systems use and goals—from hedonic uses, to mixed uses, and utilitarian uses. Related key topics include: Adoption, technology affordances, *meta-affordances* (design affordances specific to the Metaverse and supporting haptic and biometric technologies), appropriate challenge, achieving extended reality (XR) (through VR, AR, MR), avatars, cognitive absorption, cognitive load, computer vision, connected IoT devices, connected vehicles, continuance, discontinuance, embodiment, empathy, engagement, feedback cues, flow, gamified design, immersion, leveraging digital twins, mental workload, navigability, sensory overload, tactile perceptions, telepresence, usability, visual cues, and wholistic scene understanding.

Dates:

- First round submissions due date: **June 30, 2023**
- First round decisions provided by: **September 15, 2023**
- Second round submissions due date: **January 15, 2024**
- Second round decisions provided by: **March 15, 2024**
- Third round submissions due date: **May 15, 2024**
- Final decisions on papers provided by: **July 30, 2024**
- Special issue publication TBD in late 2024 or early 2025

Please **do not** contact the editors directly, but instead send abstracts, queries, and submissions to JMISmetaverse2023@gmail.com

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