Introduction to Minitrack: Metaverse, Mixed Reality, and Remote Interactions: Socio-Behavioral Services

Jani Holopainen
University of Eastern Finland Joensuu, Finland
jani.holopainen@uef.fi

Petri Parvinen
University of Helsinki
Helsinki, Finland
petri.parvinen@helsinki.fi

Triparna De Vreede
University of South Florida
Tampa, USA
tdevreede@esf.edu

Essi Pöyry
University of Helsinki
Helsinki, Finland
essi.poyry@helsinki.fi

This minitrack presents an avenue for information systems research and management research streams to generate new knowledge as well as equip practitioners with new insights into identifying new value-creation opportunities linked to what can be broadly understood as Metaverse Platforms (MP). The concept of Mixed Reality (MR) refers to the integration of various types and levels of virtual and real environments (Flavián et al., 2019; Milgram & Kishino, 1994), and it can consist of augmented reality (AR) or virtual reality (VR) technologies and applications, or the combination thereof. Due to the maturing of VR, AR and MR technologies, and the increased need for remote and virtual access to services in our society, the variety of use cases and benefits these technologies provide is still on to rise. MR technologies and systems have also been increasingly merged with other contemporary media technologies (e.g. MPs), which contributes to the way these technologies are consumed and the services they support.

The 2020-2022 pandemic emphasized the demand for these immersive technologies for user and customer interactions both remotely as well as, increasingly, in person (Pöyry et al., 2024). However, most of these applications and services lack generalizable models and strategies on how they are used in the interactions of firms, their customers and service beneficiaries. The existing literature introduces various affordances these technologies offer but the research lacks assessments of meaningful business outcomes such as service scalability and sales, and behavioral outcomes like user satisfaction, loyalty, and purchase behavior. Integrating research on technology affordances with meaningful business and behavioral outcomes is necessary to build both theoretical understanding and practical implications.

Organized already for the sixth time in HICSS, the minitrack received six submissions out of which three papers were accepted. The minitrack encouraged submissions from both cutting edge technology and practical applications. This year, the accepted papers concentrated increasingly on virtual service situations – retail, museums and classrooms. We recognize that the field is moving from introducing novelty and creating hype to more thoroughly understanding the underlying elements and affordances these technologies provide and the caveats in our present knowledge.

The paper titled "*Virtual Promises, Tangible Failures: Understanding Augmented Reality Service Failures in Online Retail*" evaluates the impact of augmented reality (AR) on consumer expectations and responses to service failures in online retail. AR enables virtual product trials, significantly raising consumer expectations. However, when AR falls short, it triggers the 'AR Confidence Paradox,' where the mismatch between expected and actual service outcomes shifts typical attribution patterns seen in online retail from internal (self-blame) to external (retailer blame).

The paper titled "*A Systematic Review of Integrating Mixed Reality and Artificial Intelligence in Museums: Enhancing Visitor Experiences and Innovating Exhibit Design*" documents the increased development and adoption of immersive technologies and artificial intelligence (AI) and mixed reality (MR) in museums to transform visitor experience and perceptions. The paper systematically reviews the implications of MR and AI in museums, identifying key topics as well as design guidelines. Preliminary results indicate that immersive and customized experiences are major themes in AIMR applications in museums. Emerging MR themes include social interaction and enhanced artifact displays, while AI developments focus mainly on intelligent virtual assistants and artifact detection.

The paper titled "*Sit Back and Think: Improving Metacognitive Reflection in Physical and Virtual Reality Classrooms*" posits that students face ever increasing expectations on information absorption.

URI: https://hdl.handle.net/10125/109023
978-0-9981331-8-8

The study highlights the paradox between the rapid information absorption often in conjunction with achieving a 'flow state', and the underutilization of metacognition. Using self-determination theory and flow to hypothesize conditions where immersive virtual reality (IVR) differs from traditional learning environments, the paper conducts a within-subjects experiment (N=35) with physical and IVR learning tools conditions.

References

[1] Flavián, C., Ibáñez-Sánchez, S., & Orús, C. "The impact of virtual, augmented and mixed reality technologies on the customer experience", Journal of Business Research, 2019, 100, pp. 547–560.

[2] Milgram, P., Takemura, H., Utsumi, A., & Kishino. F. "Augmented reality: A class of displays on the reality-virtuality continuum", Proceedings of Telemanipulator and Telepresence Technologies, 1994, pp. 2351–2334.

[3] Pöyry, E., Holopainen, J., Parvinen, P., Mattila, O., & Tuunanen, T. (2024). Design Principles for Virtual Reality Applications Used in Collaborative Service Encounters. Journal of Service Research, 1-17.