

## EDITORIAL PREFACE

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Welcome to the latest issue of the *International Journal of Mobile Human Computer Interaction* (IJMHCI). As is customary, this issue of the journal contains an interesting mix of articles – covering topics ranging from a study of smartphone user behavior determinants, to investigation into the user side of secure VoIP for mobile use, to the participatory development of mobile learning applications for field-based learning, and finally arriving at a case study-based comparative analysis of revolutionary and evolutionary design processes for mobile location-based interaction.

The first article, entitled “An Empirical Study of Smartphone User Behavior: The Effect of Innovation Characteristics, Brand Equity and Social Influence” is by Chin-Lung Hsu and Judy Chuan-Chuan Lin. In this, the authors apply innovation diffusion theory (IDT) to investigate and identify three determinants or predictors of adoption behavior for users of smartphones, namely innovation characteristics, brand equity, and social influences. Based on a survey of smartphone users, the authors argue that these three determinants account for 60% of adoption behavior, and outline a series of related implications and suggestions for practitioners.

In “Usable and Secure P2P VoIP for Mobile Use”, Joakim Koskela, Kristiina Karvonen, and Theofanis Kilinkaridis argue that the use of voice over IP (VoIP) is relatively insecure, leaving the user open to security threats and

usability issues that can lead to loss of privacy, and that future peer-to-peer (P2P) communication systems further increase the challenges as untrusted peers need to be relied upon to access services. The authors have developed a P2P VoIP system for mobile platforms to improve security and privacy and, if used correctly, minimize the risks involved. The authors acknowledge that, because of the fundamental differences in how their service is provided, threats are not immediately comprehensible to users, and so there is an intrinsic challenge associated with informing users of such threats. They report, here, on their investigation into how, when and what to communicate to users in order to improve their understanding of the new technology and new threats.

Trevor Collins, in his article entitled “Enhancing Outdoor Learning Through Participatory Design and Development: A Case Study of Embedding Mobile Learning at a Field Study Centre”, explores how participatory design can support outdoor learning centres (for whom the goal is to engage and enthuse students via practical inquiry) in effectively introducing sustainable technology as part of their teaching practice. The article focuses on a case study, representing a collaboration between the research team and an environmental education charity, to highlight the challenges associated with design and use of mobile technology within a residential outdoor learning centre to support

field work. The author argues that participatory research with educators contributes positively to the diffusion of mobile learning and is essential for establishing sustainable IT-enhanced learning. He suggests that the field of mobile HCI needs to carefully consider the development of effective partnerships to allow meaningful participatory research.

In the final paper – “Revolutionary and Evolutionary Technology Design Processes in Location-Based Interactions” by Elizabeth FitzGerald and Anne Adams – we read about a comparative analysis of a revolutionary design process and an evolutionary design process as applied in two location-based mobile interaction

case studies. Emerging from the analysis of the case studies is a set of fifteen heuristics which present key characteristics and differences between the two design processes, providing a reference point for defining rationale for procedural adoption for the design and development of technical systems created by the research community. The authors pay particular attention to the role of research team members in managing expectations (including those of stakeholders), and reflect on the implications of their findings for planning future research projects.

Finally, I hope that you enjoy reading the varied and interesting research included in this latest issue of the IJMHCI!