Talking to the ‘other side’: shared mixed reality museum experiences for local and remote museum companions

Areti Galani, Matthew Chalmers
University of Glasgow, United Kingdom

Abstract

Two years ago, the Equator IRC’s City project set out to design and implement a shared mixed reality system that would support co-visiting of museum exhibitions for both on-site and on-line visitors. The design procedure involved initial studies of visitors as well as user trials with the prototype system, and focused on non-educational groups of visitors, e.g. groups of friends. We briefly present the prototype system that uses wireless communication technologies to combine handheld devices, virtual environments and hypermedia, and which permits three visitors, one local and two remote, to visit and experience a single exhibition at the same time. We then discuss its use, focusing on the ways that the system shaped the visiting experience.

Many museums, in collaboration with universities and industrial researchers, have been exploring the use of novel technologies to enhance the visitor experience. Whether mobile or fixed, wired or wireless, autonomous or networked, such systems tend to focus on the delivery of additional information to augment visitors’ knowledge of the collections/galleries. In that respect, they function as rich information repositories and resources for a variety of audiences both on- and off-site. Furthermore, virtual reality techniques have been used on museum websites to improve visitors’ navigation and awareness of the gallery space. To our knowledge, our research is unusual in that it treats social interaction as the paramount aspect of the museum experience, and brings on-site and on-line visitors together by not only supporting information access but also supporting social awareness and interaction.

Drawing from our system trials that took place in the Mackintosh Interpretation Centre, in The Lighthouse, Glasgow, UK, we discuss how a shared mixed reality system that initially facilitates information access and collaborative navigation of exhibition spaces for both local and remote users changes to become a resource for collaborative exploration and interpretation of artefacts, implicit and explicit exchange of recommendations between local and remote users, and creative conversation. We reflect on elements—for example, visitors’ expertise and pre-existing communication patterns among the members of the group—that may support a system’s change from being the focus of attention, unfamiliar and present-at-hand, to being a familiar and ready-to-hand element within the museum experience. We relate this to the use of the available interaction resources, for example real-time voice communication, and how they shape visitors’ experience of the exhibition and of each other.

This research moves away from the traditional design focus on a single user’s experience—often criticised for inhibiting visitors’ social interaction and mutual awareness within the galleries—to a multi-user, multi-place experience that treats the physical and digital aspects of a museum as equally important elements of the museum experience. In that respect, it treats social context in museum visits and the current demand for technological and informational richness as complementary and mutually reinforcing. The paper concludes with our future plans for research on visitors’ active involvement in the generation of content and on expansion of the museum experience to before and after the visit.