

## Chapter 6

# Museum Experience and Digital Consumption: The Role of Mobile Augmented Reality in Tunisia's Cultural Heritage

**Khouloud Mouihbi**  
*IHEC of Carthage, Tunisia*

**Nedra Bahri-Ammari**  
*IHEC of Carthage, Tunisia*

**Daouda Coulibaly**  
*ISTEC Paris, France*

### **ABSTRACT**

*This study explores the role of mobile augmented reality (MAR) technology in enhancing user experience (UX) in the context of cultural heritage. Data were collected via individual semi-structured interviews, according to a theoretical model of UX. The findings show that MAR can enhance UX in cultural heritage museums when the product's features and characteristics match users' needs. A contemporary challenge in the cultural heritage industry is to find creative ways to attract new visitors and enhance their museum experience. Therefore, this study was conducted to improve museum curators' understanding about the UX of MAR apps to satisfy their visitors' expectations.*

DOI: 10.4018/978-1-7998-6904-7.ch006

## **INTRODUCTION**

In the sub-sector of cultural heritage tourism, innovative methods and new technological tools are continuously being sought to engage and enhance visitors' experience (Tscheu and Buhalis, 2016). Cultural heritage museums are among the most visited destinations in the world owing to their cultural and historical richness. These technologies, as well as the museums themselves, also play a very important role in the development of smart cities. Nevertheless, many museums provide limited access to information in certain exhibits owing to a lack of space, preservation and restoration of artefacts, which could cause the quality of visitor experience to decline even more. However, interactive technology (Pauget and Dammak, 2019) can be used to overcome these limits and provide users with the opportunity to fully appreciate cultural heritage museums, thereby breaking the boundaries of space and language.

Augmented reality (AR) is one of the most revolutionary technologies of recent years. AR has the ability to reshape the layout of museum displays and to impact users' behaviour (Arnaboldi et al., 2021) by enhancing real-world objects and spaces with digital information that is overlaid in the real world (Milgram and Kishino, 1994).

Contemporary museum visitors are no longer passive; they have certain expectations and want to actively participate in their museum experience. Therefore, they are now demanding information and entertainment through innovation and creativity (Hoyer et al., 2020), in addition to multisensory stimulation (Li et al., 2019; Pine and Gilmore, 1999). AR can be used as a tool to enhance museum experience and change how museums are seen, especially for young visitors, by displaying virtual content without disturbing the real environment. Its navigation functions have made AR technology very attractive to the tourism industry, especially in the sub-sector of cultural tourism (Van Krevelen and Poelman, 2010). Some authors found that AR has great potential and it can be considered a powerful means for museums to engage their visitors by showcasing information in a captivating and creative way (Neuburger and Roman, 2017). Therefore, AR has been selected by tourism practitioners as a mechanism through which enjoyable and interactive experiences can be created, as in the case of the Manchester Art Gallery (Leue et al., 2015), Dublin AR (Han et al., 2013), and Greevor Tin Mine museum in Cornwall UK (Jung et al., 2016). The implementation of AR in museums has also enabled the improvement of historical knowledge.

In this way, technology like mobile augmented reality (MAR) can be used as a tool to enhance user experience (UX) in the context of cultural heritage museums. However, understanding its role in transforming cultural tourism experiences is important for it to be successfully deployed. The aim of this chapter is to explore and to get a better understanding of the different aspects of UX in MAR, as this could have an impact on enhancing the experience of a cultural heritage museum visitor.

23 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/museum-experience-and-digital-consumption/299088](http://www.igi-global.com/chapter/museum-experience-and-digital-consumption/299088)

## Related Content

---

### Distributed Computing in Wireless Sensor Networks

H. Huang (2007). *Encyclopedia of Mobile Computing and Commerce* (pp. 202-206).  
[www.irma-international.org/chapter/distributed-computing-wireless-sensor-networks/17077](http://www.irma-international.org/chapter/distributed-computing-wireless-sensor-networks/17077)

### A Taxonomy of Database Operations on Mobile Devices

Say Ying Lim, David Taniarand Bala Srinivasan (2009). *Mobile Computing: Concepts, Methodologies, Tools, and Applications* (pp. 350-371).  
[www.irma-international.org/chapter/taxonomy-database-operations-mobile-devices/26513](http://www.irma-international.org/chapter/taxonomy-database-operations-mobile-devices/26513)

### Enterprise Network Packet Filtering for Mobile Cryptographic Identities

Janne Lindqvist, Essi Vehmersalo, Miika Komuand Jukka Manner (2010).  
*International Journal of Handheld Computing Research* (pp. 79-94).  
[www.irma-international.org/article/enterprise-network-packet-filtering-mobile/39054](http://www.irma-international.org/article/enterprise-network-packet-filtering-mobile/39054)

### Session and Network Support for Autonomous Context-Aware Multiparty Communications in Heterogeneous Mobile Systems

Josephina Antoniou, Christophoros Christophorou, Augusto Neto, Susana Sargento, Filipe Pinto, Nuno Carapeto, Telma Mota, Jose Simoesand Andreas Pitsillides (2010). *International Journal of Handheld Computing Research* (pp. 1-24).  
[www.irma-international.org/article/session-network-support-autonomous-context/48501](http://www.irma-international.org/article/session-network-support-autonomous-context/48501)

### UbiWave: A Novel Energy-Efficient End-to-End Solution for Mobile 3D Graphics

Fan Wu, Emmanuel Agu, Clifford Lindsayand Chung-han Chen (2010). *Handheld Computing for Mobile Commerce: Applications, Concepts and Technologies* (pp. 124-179).  
[www.irma-international.org/chapter/ubiwave-novel-energy-efficient-end/41631](http://www.irma-international.org/chapter/ubiwave-novel-energy-efficient-end/41631)