

Chapter 7

Reinventing Museums in 21st Century: Implementing Augmented Reality and Virtual Reality Technologies Alongside Social Media's Logics

Antonios Kargas

 <https://orcid.org/0000-0001-6157-1761>

National and Kapodistrian University of Athens, Greece

Nikoletta Karitsioti

Department of Political Sciences and International Relations, University of Peloponnese, Greece

Georgios Loumos

COMIC, Greece

ABSTRACT

The forthcoming Industry 4.0 is expected to change not only manufacturing and industrial services, but will rearrange how services are offered in a variety of sectors, including museum's services. Museums will inevitably be led to more digital (VR & AR) and promoting (Social Media) paths. A forthcoming "digital convergence" between VR & AR technologies and social media's promoting logic could enlarge museums' potentialities in attracting more visitors, younger visitors, while new patterns for connecting learning effects and amusement should be established. This chapter contributes to the following:

- *Presenting existing theoretical and empirical research on Virtual Reality and Augmented Reality technological implementation in Museums.*
- *Presenting current tensions on social media's usage from cultural organizations.*
- *Exploring how VR & AR applications can incorporate various elements coming from social media operational logic.*

DOI: 10.4018/978-1-7998-1796-3.ch007

INTRODUCTION

Since mid-90s, museums face an ongoing need to implement new technologies and to answer visitors changing needs. The first steps to the digital world came World Wide Web and the development of Web Pages, which open a window to global public, arising questions about the relationship between “increased accessibility” (via internet) and “attractiveness” (from digital) to the real museum place. Even from these first digital steps, where content and context were delivered via web pages, many researchers and professionals started to visualize what Marlaux (Malraux, 1996) introduced in 1947 as “imaginary museum”

(. . .) a logically related collection of digital objects composed in a variety of media, and, because of its capacity to provide connectedness and various points of access, it lends itself to transcending traditional methods of communicating and interacting with the visitors being flexible toward their needs and interests; it has no real place or space, its objects and the related information can be disseminated all over the world. (Schweibenz, 1998).

A bit later, social media became part of everyday life and most of the museums worldwide created their own accounts in order to stay “connected” with visitors, world’s audience and social stakeholders. Social media was an alternative, faster, low cost and direct (user friendly) way (Sylaiou, Liarokapis, Kotsakis, & Patias, 2009) to share content, to announce events and to extend “potential” visitors’ pool. This kind of communication was radically facilitated by mobile devices (phones and tablets), enabling a series of dynamic and interactive applications (Hin, Subramaniam, & Aggarwal, 2003). Smartphones are nowadays reshaping the environment, permitting new applications in emerging eras (Kim et al., 2014), such as Virtual Reality (VR) and Augmented Reality (AR) platforms and applications.

These two technologies have already gained interest from both methodologically and empirically research. For example, Sparacino et al. (Sparacino, Davenport, & Pentland, 2000) and Grinter et al. (Grinter et al., 2002) studied interactive technologies in museums, while Brown et al. (Brown, Maccoll, Chalmers, & Galani, 2003) and Bowers et al. (Bowers et al., 2007) explored interactive exhibits using ubiquitous displays with augmented reality. More recent studies concentrated on comparisons of VR, AR and Web3D in virtual museums / exhibitions (Sylaiou et al., 2009), in implementing AR on archaeological site (Angelopoulou et al., 2012; Gutierrez, Molinero, Soto-Martín, & Medina, 2015), in evaluating VR and AR experience in cultural places (Higgett, Chen, & Tatham, 2016; Izzo, 2017).

Current research on VR & AR mainly targets aspects related with their operational strengths and weakness (Loumos, Kargas, & Varoutas, 2018), while social media literature has its own goals related mainly with distribution and promotion. Authors will use their experience from creating a VR & AR application for cultural organizations (named VAREAL and being prepared for market release in late 2019) to explore the technological and business opportunities / limitations of incorporating social media elements in VR & AR apps (such as emoticons, comments, like-dislike, chatting, social networking etc.). Authors aim to reveal that the ongoing technological development made feasible to re-examine digital technologies’ usages and potentialities, by incorporating tools and techniques from different digital fields, such as social media.

A strong motive to this direction has been given from a growing tension between museums to reinvent themselves following a more alternative perception. “Instagramization” is a tension describing the creation of immersive exhibits or even museums themselves in order to provoke visitors to get part of the exhibition, to create their own “photograph” art and to use Instagram (and other social media) to

20 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/reinventing-museums-in-21st-century/241598

Related Content

Learning Reflection and Creativity in Online Game Communities

Tunç D. Medeni, Mark Elwell, Steven A. Cook and Euler G.M. de Souza (2008). *Encyclopedia of Networked and Virtual Organizations* (pp. 808-817).

www.irma-international.org/chapter/learning-reflection-creativity-online-game/17693

Social Presence in Online Dissertation Classes

Libi Shen and Irene Linlin Chen (2014). *Educational, Psychological, and Behavioral Considerations in Niche Online Communities* (pp. 175-191).

www.irma-international.org/chapter/social-presence-in-online-dissertation-classes/99301

Evolution of Trust and Formation of Preference Clusters in Distributed Networked Structure

Purnendu Karmakar and Rajarshi Roy (2013). *Studies in Virtual Communities, Blogs, and Modern Social Networking: Measurements, Analysis, and Investigations* (pp. 62-96).

www.irma-international.org/chapter/evolution-trust-formation-preference-clusters/77994

Industry Experts and Business Consultants' Takes on India's Readiness for Metaverse: A Review of the Retail Industry

Gautam Shandilya, Praveen Srivastava and Abhisek Jana (2024). *Creator's Economy in Metaverse Platforms: Empowering Stakeholders Through Omnichannel Approach* (pp. 132-147).

www.irma-international.org/chapter/industry-experts-and-business-consultants-takes-on-indias-readiness-for-metaverse/340315

Motion Cueing Algorithms: A Review: Algorithms, Evaluation and Tuning

Sergio Casas, Ricardo Olanda and Nilanjan Dey (2017). *International Journal of Virtual and Augmented Reality* (pp. 90-106).

www.irma-international.org/article/motion-cueing-algorithms-a-review/169937