Chapter 3
Managerial Challenges in VR and AR in Asia

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ABSTRACT

Virtual reality and augmented reality technologies have been widely adopted in tourism and hospitality, retail, communication, social media, and other fields. They have become effective tools to deliver consumer experiences and also are cost-effective. Though the adoption of these technologies has received support from customers, there are over-arching issues which have to be addressed for these technologies to diffuse into everyday lives. This chapter discusses how virtual and augmented realities are applied in various industries and the resulting immediate challenges which are needed to be addressed by the managers for a successful adoption.

INTRODUCTION

A Virtual Reality (VR) is an artificially made up world that may or may not reflect the real world (Milgram et al., 1994). The actual environment and the VR are at the opposite ends of the Reality-Virtuality continuum where other types of combinations of virtuality and reality exist. The ability to present users with virtual reality at a full scale is an advantage of a VR system. The interaction with the VR system is possible via gestures (3D position trackers measure body motion and act accordingly) and speech as well as through normal interaction via mouse, keyboard and game devices. Virtual environments immerse users by providing sensory stimulation, using wearable devices (Galeazzi and di Milo 2011). Augmented Reality (AR)
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relates purely virtual environments to purely real environments. In AR, the observer sees the real world along with virtual objects overlaid on the real world, usually by wearing see-through displays (Bimber & Raskar, 2005). AR has seen a growth in technological applications in the last decade, particularly since smartphones have GPS (Global Positioning System) embedded in each device and have become ubiquitous as a means of searching for information.

VR technologies have become advanced and cost effective (Ali and Al-Mhiqani, 2017) and are adopted in retail, tourism, hospitality, education, etc. VR is characterised by telepresence with attributes of vividness, i.e., 3D quality of images couple with sense of movement in the environment, and interactivity, i.e., extent to which users can modify the form and content of an environment (Cummings & Bailenson, 2016). According to Steuer (1992), vividness and interactivity are complimentary in creating a sense of presence in virtual environment where, as Cheng et al. (2014) claim that vividness is three times more influential than interactivity in evoking virtual sense of presence. However, according to Loureiro et al. (2018), past experience with VR technologies acts as moderator of consumers’ virtual experiences as the novelty in using VR wears out with the number of times VR is experienced.

The business applications of VR have been growing exponentially, viz., avatars in marketing are of various types with individuals trading virtual items in flagship stores, being exposed to virtual advertising (billboards and multimedia) and event sponsorship. Besides, companies have been using virtual worlds to observe the attitudes and motivations of their residents and implementing product testing and co-creation of virtual and real products. Hence, the main objective of this chapter is to present the VR applications across industries and the resulting managerial challenges.

**VR APPLICATIONS IN COMMUNICATION AND SOCIAL MEDIA**

In the context of VR communications, consumers enjoy a more visual and functional control (Jiang & Benbasat, 2004), which allows better inspection of products, with positive effects on diagnosticity, i.e., consumers’ ability to diagnose the product attributes prior to purchase, and on the flow experience as a result of visual and functional interactivity and vividness (Jiang & Benbasat, 2004). Concerning product diagnosticity, Li et al. (2002) attribute the positive effects of VR to the illusion of presence which creates new virtual product cues. Starting with the pre-purchase stage, VR technology can contribute to promoting brand/brands related to all consumers’ experience with the brand/brand before purchase, for instance: searching for information about alternative products/brands through advertising and all forms of marketing communication, acknowledging the reputation and credibility of the brand and
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