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Augmented reality: Designing immersive experiences that maximize consumer engagement

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Abstract   Innovative marketers can now leverage augmented reality to craft immersive brand experiences, create more interactive advertising, and enable consumers to experience products and spaces in novel ways. Augmented reality (AR) is the practice of displaying digital information over people's real-time view of objects, people, or spaces in the physical world. While AR can play a valuable role in integrated marketing programs, little is known about the practice and how to execute effective AR programs in the marketplace. We address this gap by presenting a framework that describes the active and passive ingredients of augmented reality. We then describe the basic design decisions that marketers need to make when planning an augmented reality campaign. In addition, we explain how understanding and addressing the dynamics between various active and passive AR ingredients can help marketers to optimize their AR campaigns and enhance various types of consumer engagement: user-brand engagement, user-user engagement, and user-bystander engagement. Through our framework and analysis, we develop eight actionable recommendations—described with the acronym ENTANGLE—marketing managers can use to design immersive AR experiences that maximize consumer engagement.
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1. Augmented reality: An emerging tool for marketers

How can marketers use emerging technologies to break through the clutter and create value for

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consumers? Imagine IKEA could help consumers visualize how a new sofa might look next to their existing furniture, or a TV station could spice up consumers' mundane commutes by transporting them into a world of *The Walking Dead* zombies (Figure 1). Marketers can create these unique and valuable experiences by effectively leveraging augmented reality.

Augmented reality (AR) is the practice of augmenting a real-time direct or indirect view of the

Figure 1.   Augmented reality campaign for *The Walking Dead* TV show in Vienna, Austria*

Two tram commuters flee a digital zombie that they, initially, believe to be real (AR campaign in the bogus window paradigm).

*Source: Image provided courtesy of move121 Werbeagentur GmbH

physical world with virtual information (Carmigniani & Furht, 2011). The layer/world metaphor aptly captures the basic idea of augmented reality: marketers layer digital information (e.g., text, pictures, videos) over objects and spaces in the physical world (e.g., product packaging, advertisements, street scenes), and consumers experience these hybridized realities via digital screens (e.g., smart phones, video installations) or projections (e.g., holograms).

Many of the world's largest businesses—including Coca-Cola, McDonald's, and General Electric—have embraced augmented reality in their marketing programs. They have used AR to create interactive advertising and packaging, enhance retail experiences, and develop engrossing games. These types of AR initiatives already allow marketers to craft immersive brand narratives and enable consumers to experience products and spaces in novel ways. Moreover, future advancements in smart glasses and transparent screen technologies (Dibble, 2014) will integrate the human gaze with digital information ever more seamlessly, propelling AR into an estimated $120 billion business by 2020 (Gaudiosi, 2015). In the words of an analyst at the 2015 Consumer Electronics Show, AR has the potential to "disrupt anything with a screen" (Bradshaw, 2015).

Growing media coverage about augmented reality reflects its emerging ubiquity. AR has been discussed in trade publications (e.g., Handley, 2013), business magazines (e.g., "Reality, Improved," 2009), and national newspapers (e.g., Berlin, 2009) but has received little attention from business academics. If AR is mentioned in managerial-oriented journals, it is typically referenced only peripherally as part of a changing business environment or as something to be studied in the future (e.g., Dholakia & Reyes, 2013; Rohm, Gao, Sultan, &

Pagani, 2012; Zhao & Balagué, 2015). However, managers who wish to integrate augmented reality into their marketing programs need frameworks to inform their decision making. They need to understand the building blocks, design principles, and dynamics of augmented reality beyond its technical qualities and non-commercial applications (e.g., Broll et al., 2008; Hugues, Fuchs, & Nannipieri, 2011). What should marketers consider when designing AR experiences? How and when should they co-produce these experiences with consumers? How can they craft compelling AR experiences that tell brand narratives, create value, and engage consumers?

Informed by an analysis of over 50 augmented reality marketing initiatives from a broad array of AR paradigms (Table 1), we have developed a framework that describes: (1) the ingredients of augmented reality; (2) basic design decisions for developing compelling AR experiences; and (3) how marketers can optimize the dynamics of AR initiatives to increase consumer engagement. First, we introduce the building blocks of AR experiences, which can be identified as active ingredients and passive ingredients of the physical world. Second, we discuss the basic design decisions marketers have to make when developing AR initiatives. Marketers can design more successful AR experiences by defining the target audience and communications objectives, determining how the AR layer will be activated for users, regulating what content will be added to the AR layer and by whom, and planning for how the AR layer will integrate with specific social and physical contexts. Third, we describe how marketers can optimize their AR initiatives by making adjustments—often small and inexpensive—to their AR content and overall experience. As a part of this discussion, we elaborate on how marketers can facilitate three different types of consumer engagement by enabling users to interact with the digital content, other users, and people who are not currently participating in the AR experience. This framework allows us to develop eight actionable recommendations marketers can use to design immersive AR experiences that maximize consumer engagement.[1]

2. The ingredients of augmented reality

Every augmented reality experience is established and influenced by digital *AR content* (represented

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[1] For a summary of terms used, see the Appendix.