

# How Digital Technologies Reshape and Transform Marketing: The Participation of Augmented Reality in Brand Loyalty Building

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**Abstract:** *Since the 21st century, the environment in which enterprises operate has witnessed the rapid development of digital technologies [1], such as AI, IoT, etc, and these disruptive technologies have gradually participated in business operational activities as well as value creation approaches. Among these state-of-the-art technologies, Augmented Reality (AR) has gradually become a popular tool with powerful interactivity features to alter physical surroundings with superimposed virtual elements [2]. Simultaneously, with the popularity of digital marketing and the rising strategic value of brand loyalty in the digital era, the impact of augmented reality on both is also gaining increasing attention. This paper analyses the application prospect of AR technology in brand building based on the brand loyalty model and digital marketing framework, and thus explores how to leverage the capabilities of AR to optimise brand loyalty building. On the one hand, the interactive features of AR allow novel products to reach targeted potential customers in a more direct way via ubiquitous mobile devices and thus efficiently drive brand awareness in the early stages of marketing. On the other hand, AR could aid marketers in developing long-term customers by optimizing ongoing engagement after the initial purchase. Moreover, the ethic of AR in marketing, especially data security and privacy protection is also covered in this paper. Overall, although the benign interaction between AR and digital marketing discussed in this article is only a microcosm of digital transformation within organizations, the application opportunities and challenges discovered not only provide directions for smooth adoption of AR technology in practice, but offer novel insights into the research on adjustment of organizational activities under digital transformation.*

**Keywords:** *Augmented Reality; Brand loyalty; Brand Awareness; Digital Marketing Model*

## 1. Introduction

With the rapid development of IT in the past decades, various disruptive technologies have been created constantly and thus mark the advent of the Second Machine Age [3] and Industry 4.0 [4], which are characteristic of digital convergence between business activities. Among these emerging technologies, Augmented Reality (AR), together with Virtual Reality (VR), falls under the category of extended reality (XR), whose features provide the users with an enriched experience through real-and-virtual environments generated by computer graphics [5].

Unlike VR which relies heavily on specific HMD glasses to provide a virtual immersive experience for users, AR functionality can be realized with AR Apps on ubiquitous mobile devices, through which digital elements are incorporated as a novel layer of interaction with the physical world to provide more freedom for the user. Therefore, AR not only allows users to have equally easy access to gaining an enriched live view through common mobile Apps, but also provides more innovative possibilities where designers could combine AR with other technologies, such as camera and image process, to offer more value to users. For example, IKEA, a famous furniture company, designed an AR App on mobiles to enable customers to place more than 2,000 AR-generated 3D furniture models with 98% accuracy in their houses to check whether they are suitable and properly match existing furniture before making the final decisions [6]. As such, experiential marketing based on AR not only saves customers' time of repetitive comparison and shopping around to make complete transactions with faster speed [7], but also helps enhance the level of brand awareness and perceived products' value to make customers easily build their image of specific brands after first purchase [8].

As an enhanced version of the physical world, AR efficiently helps shorten the distance between consumers and emergent products and strengthen the cognition of products and brands, thus AR Apps advertising has become a feasible application field of AR in digital marketing currently. In terms of interactivity and accessibility of AR, marketers, and promoters have attempted to incorporate AR into traditional advertising based on mobile Apps platforms to realise an enrichment of printed and digital information with interactive content [9] within an increasingly competitive message environment in the digital age [8]. With strong interactivity features, AR advertising outperforms traditional advertising in terms of the enhanced depth of information processing [9] and the mediated environment [10] brought about by interactivity.

Compared to traditional marketing along with information asymmetry, the key issue facing digital marketing is not to make information reach more potential buyers but how to transform considerable one-time buyers into long-lasting loyal customers, which is dependent on brand loyalty building [11]. As mentioned above, the interactivity of experiential marketing based on AR App advertising enables customers to gain valuable experiences through optimised customer engagement with a specific brand. Therefore, identifying the critical factors affecting brand loyalty and rationalizing AR accordingly is critical for organizations to gain sustainable competitive advantages. The achievement of this necessitates a systematical review of the literature on brand loyalty and its role within the digital marketing framework.

## 2. Literature Review

The importance of brand loyalty has been recognized in the marketing literature for several decades [12]. Aaker [13] established a wide-accepted theoretical framework of brand equity, taking brand loyalty, brand awareness, brand association, perceived quality, and proprietary brand assets as five sub-dimensions of brand equity. Following this conceptual framework, brand loyalty was defined as the attachment that a customer has to a brand [13] and could be indicated by the number of repeated purchases [14] or commitment to re-buy the brand as a primary choice compare to other brands offering similar products [15]. Moreover, Nikabadi et al [16] conducted a quantitative analysis to test the relationships between these dimensions of brand equity proposed by Aaker [13], and found brand awareness positively impacts brand association, and the brand association has a significantly positive influence on brand loyalty.



Figure 1: Aaker's Brand Equity Model

Based on the conceptual framework of brand equity, Oliver [17] has presented a conceptual framework of brand loyalty that consists of a full spectrum covering multi-dimensions from attitudinal loyalty, and behavioral intent to behavioral loyalty. Based on the novel division of brand loyalty

proposed by Oliver [17], Gommans et al. [18] elaborated on the indicators of these sub-dimensions in the context of network marketing in the digital age. According to Gommans et al. [18], brand loyalty in the digital age has parallels to the traditional 'store loyalty' [19], and it is mainly manifested by behavioral repeat purchases. Moreover, attitudinal loyalty which is related to privacy, credibility, and security should come into greater focus, and novel forms of indicators along with a digital context, such as repeat site visits without purchases and website stickiness, should be considered too [18]. Based on these claims, they defined five underlying drivers for brand loyalty, which are shown below:

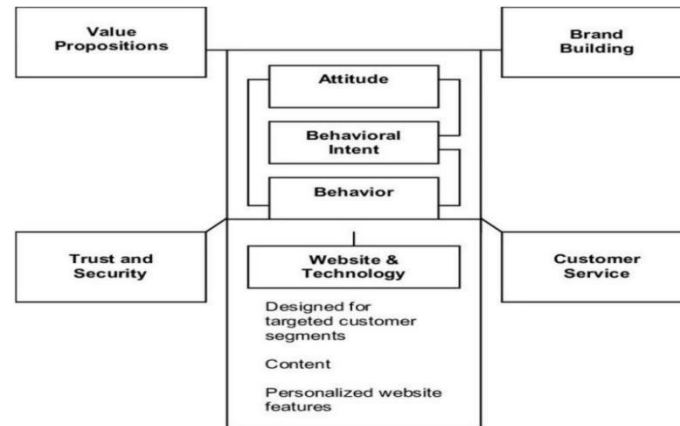


Figure 2: Gommans et al. [18] e-Loyalty Framework

Overall, the conceptual framework of brand loyalty proposed by Gommans et al [18] is constructed from the perspective of E-commerce, and although this theory does not apply to all digital marketing scenarios, it identifies key elements for building brand loyalty in an e-commerce-like environment that features global reach, high information density as well as customer engagement. Within the instructive RACE model [20], although brand loyalty building is one of the core activities at the Engage step, the forming of loyalty is inseparable from the value-based brand awareness in the Reach stage and successful customer engagement and experience in the Action and Engage stages. Therefore, combined with the literature review and the features of AR discussed above, brand trust, customer satisfaction based on perceived product quality, and customer engagement are selected as three main starting points of strategic value for leveraging AR to enhance brand loyalty.

### 3. Approaches to ensuring AR a reliable builder of brand loyalty

#### 3.1 Enhance perceived product value and brand awareness through AR App Advertising

Although AR could affect advertising effectiveness with interactive content compared to traditional ads, as a novel technology, the attitude towards AR advertising largely affects the cognition of an advertising message and its persuasiveness [8]. According to Lutz [21], the usefulness, novelty, and credibility of the advertisements are the main determinants of attitude-towards-the-ad, and thus the realisation of these three dimensions necessitates vividly interactive AR advertising that provides a high level of perceived quality simultaneously for customers. As Oliver [15] defined, the perceived quality of a specific product is the superiority of the product integrating consumer expectations and perceptions. Therefore, AR advertising should pay attention to striking a balance between utilitarian value and hedonic value expressed in advertising contents [22][23], which plays a vital role within the B2C business context [24]. On the one hand, marketers should present all key information about the products in the advertisement to allow consumers to have a comprehensive evaluation of the product's functions and features to obtain utilitarian value. On the other hand, advertisers could incorporate certain creative and thrilling branding elements into advertisements, such as brand logos and business cards, and present them in a lively and interesting manner through the interactive features of AR. For example, McQueen Gin allows its customers to watch the bottle come to life with a vibrant full-length animation showing the depth and flavour behind the drink after they scan the logo on the bottle [25]. Overall, the interactivity contained in AR advertising could help brands connect with customers effectively through ubiquitous mobile devices, and to some degree compensates for the utility loss of offline shopping caused by COVID-19 with AR-enabled experiences.

### **3.2 Align with text analysis to boost enduring customer engagement**

Through interactive AR advertising could enhance brand awareness and customer satisfaction at first purchase, the forming of brand loyalty requires long-term effective customer engagement after initial consumption [26]. When the purchased products meet the expectations of customers via the perceived quality in advertising, they tend to be satisfied with both product and brand, as well as post eWOM about their purchase experiences, including their individual preferences and usage conditions [27]. However, Thakur [28] found that the satisfaction–loyalty relationship is non-linear, which means beyond a certain level of satisfaction, there is a decrease in returns on investment [29][30][31] and increased satisfaction fails to promote increased repurchase intentions and positive eWOM [32][33]. Therefore, rather than improving advertising quality to drive customer satisfaction, marketers should emphasise designing appropriate engagement activities in the different contexts of long-term customer engagement to offer personalised interaction. One feasible solution is to align AR with other technologies with analytical capabilities, especially AI and text analysis tools. Marketers should adopt text or sentimental analysis tools to capture the customised preferences, online browsing, and review patterns to provide customers with incentives for ongoing purchases and posting on social media. Moreover, marketers could proactively reward users who visit information about products and post-purchase experiences frequently, which acts as a complementary incentive to AR interaction.

### **3.3 Abide by Confidentiality and Privacy Protection**

Last but not least, user privacy and protection of user data should be given top priority. In recent years, a lack of privacy is a concern in AR Apps, which seriously hinder the continuous use of AR App by users and cause damage to users' reputation. For example, AR advertising could be used to hijack personal accounts through surveillance and data theft output by overlaying AR contents [34]. Therefore, when marketers decide to introduce AR technology to facilitate customer interaction, they need to strengthen their awareness of privacy and user data protection simultaneously, as well as follow relevant legal regulations to give full play to the advantages of technology above the bottom line of the legitimacy.

## **4. Discussions and Limitation**

The solutions discussed above offer a vision for digital marketers to properly leverage AR to strengthen brand loyalty while AR is still in its infancy. However, besides the protection of privacy and user data, the other two measures are not one-size-fits-all models for all industries of marketing.

Firstly, the weight distributions of utilitarian value and hedonic value in advertising are different in the marketing of different industries, and effective customer activities vary by product and service. Therefore, marketers should take the market positioning of their products into account and choose the appropriate weight distribution of two levels of value together with engagement activities to cater to the preferences of targeted customers. Moreover, brand loyalty is a dynamic concept and its conceptual framework will be continuously updated with the advancement of the digital age, It means that there may be more special non-linear relationships like satisfaction-loyalty within the conceptual framework. Therefore, both marketers and scholars should keep an open view on the factors discussed above that influence brand loyalty, particularly embracing the novel factors emerging with the evolution of digital marketing.

While AR's benefits have not been widely identified in various areas due to its immaturity, it is anticipated that AR will become a full-fledged digital tool that is capable of being applied in more digital marketing campaigns. Overall, proper implementation of AR is dependent on both theoretical and technical support, thus the research on AR should keep pace with the times and bring forth freshness too.

## **5. Conclusions**

To sum up, this paper proposes several approaches to leveraging the capabilities of AR technology in brand loyalty within the digital marketing framework as well as insights generated from marketing practice. However, due to the immaturity of AR technology and limited application, the application of AR technology discussed in this paper is limited to advertising and APP-based engagement activities. With the development of technology and the expansion of application scope, it can be expected that

new application prospects and corresponding opportunities and challenges will be discovered, which will provide an impetus for further research. Moreover, the theoretical framework of digital marketing is evolving along with the diversification of marketing practices involving the participation of emerging technologies, thus further study centered around the dynamic environment where companies operate and create value is required to ensure the operational processes of companies are on the track.

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