The Future of the Advertising Industry with the Application of Augmented Reality

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Abstract

Purpose: This study aims to examine and analyze the future of the advertising industry through the application of Augmented Reality (AR). It seeks to identify the opportunities and challenges that lie ahead for advertising in the era of AR and to propose solutions for effective utilization of this technology. The ultimate goal is to assist stakeholders in the advertising industry in developing innovative and more interactive strategies to enhance user experience and increase audience engagement.

Method: A systematic review method was employed in this study, allowing researchers to review, analyze, and categorize prior studies related to the applications of AR in advertising. Scientific articles and research with quantitative, qualitative, and mixed-method approaches in the field of advertising and AR were examined as primary sources.

Findings: The conducted review indicates that AR technology is reshaping the advertising industry. Findings suggest that AR can provide audiences with personalized interactions and more engaging content, steering future advertising towards more interactive and immersive experiences. Additionally, challenges such as implementation costs, privacy concerns, and the need for adequate technical infrastructure have been identified, which must be addressed for optimal AR utilization.

Conclusion: The results of this study suggest that AR can play a pivotal role in transforming the advertising industry. By correctly leveraging this technology, businesses and advertising agencies will be able to deliver innovative and interactive advertising experiences, leading to greater customer attraction and increased engagement with brands.

Key Words: Augmented Reality(AR), Advertising, Marketing, Systematic Literature Review

Introduction

With the emergence of new technologies, digital marketing strategies have evolved over the years into more interactive and immersive approaches (Felix et al., 2020). Augmented Reality (AR) is one such technology that has gained increasing popularity among marketers for enhancing brand engagement.

This technology enables usinesses tocreate interactive, engaging, and personalized experiences for their customers, fostering brand loyalty and boosting sales (Chen et al., 2021).

AR marketing refer to the application of ARin marketing to enhance consumer experiences, increase satisfaction, shape their behavior, and boost company revenues (Huang & Liao, 2015; Javornik, 2016; Poushneh & Vasquez-Parraga, 2017; Zhao Du, 2022). The widespread use of AR seems poised to have a significant impact on the future of the advertising industry. AR marketing has the potential to revolutionize the advertising industry by offering innovative new ways to interact with customers and promote products (Zhao Du, 2022). By merging the virtual worlds and creating engaging and interactive experiences, AR holds immense potential to transform advertising methods. This technology enables advertisers to influence their audiences in novel ways by delivering creative and personalized experiences (Zhao Du, 2022) .

Therefore, this technology will hold an important position in the emerging future of the advertising industry. The primary question is: given the capabilities and impacts of this technology on the future of advertising, how can it be effectively and purposefully utilized to achieve a favorable and prominent position in the advertising industry of tomorrow? In other words, what are the key objectives of applying AR technology in the future of advertising, and what strategies and tactics can be employed to realize these objectives?

Answering these questions requires a thorough examination of the strategies and implementation methods for AR in advertising. Identifying successful strategies, developing appropriate tactics, and aligning them with the needs of the audience and target market can provide advertisers with a clear pathway to fully leverage this emerging technology and achieve superior credibility and competitive advantage in the future advertising landscape.

This study explores these strategies and tactics, aiming to demonstrate how AR can shape the future of advertising and what strategies and tactics can lead to a favorable and desirable position in this industry.

By offering insights into strategies and tactics applicable to the future advertising industry, this study prepares stakeholders to effectively participate and act in the future advertising landscape.

Theoretical Framework
Augmented Reality Technology

Carmigniani and colleagues define Augmented Reality (AR) as a real-time direct or

indirect view of a physical, real-world environment that is enhanced or augmented by computer-generated and virtual information (JulieCarmigniani, 2010). To distinguish between Virtual Reality (VR) and AR, Paul Milgram and Fumio Kishino (1994) proposed a continuum known as the "Virtual Reality Continuum," illustrated as follows:
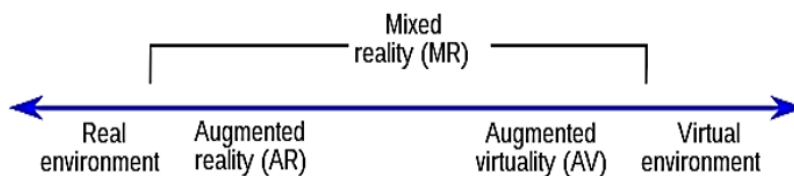

Figure 1: Spectrum of mixed reality Paul Milegram and Fumi and Kishino (1994)

The goal of Augmented Reality (AR) is to simplify users' lives by integrating virtual information not only into their immediate surroundings but also into any indirect view of the realworld environment, such as live video streams. AR enhances users' perception of and interaction with the real world.

Unlike Virtual Reality (VR) or virtual environments as introduced by Milgramthat immerse users completely in an artificial world without access to the real world, AR strengthens the sense of reality by overlaying virtual objects and markers onto the real world in real time (Azuma, 2002).

It is important to note that AR is not limited to a specific type of display technology, such as head-mounted displays, nor is it restricted to the visual sense. AR has the potential to be applied to all senses, including smell, touch, and hearing. Additionally, AR can be utilized to enhance or replace users' lost senses through sensory substitution. For example, it can enhance vision for blind or visually impaired users by providing auditory cues, or improve hearing for deaf users through visual markers

Advertising and Marketing Through Augmented Reality

Augmented Reality (AR) marketing refers to the application of AR in marketing to enhance consumer experiences, increase their satisfaction, influence their behavior, and boost company revenues (Huang & Liao, 2015; Javornik, 2016; Poushneh & Vasquez-Parraga, 2017).
New media, leveraging AR, play a crucial role in achieving desired outcomes for advertising and marketing by making advertisements more interactive. Specifically, AR integrates digital information or objects into consumers' perceptions of physical

objects and environments. This provides consumers with rich information about products or services, enabling them to experience these offerings more conveniently. Moreover, AR not only improves online experiences and interaction but also creates exceptional and extraordinary experiences (Zhao Du, 2022).

Methodology

In this study, instead of using meta-study methods such as meta-analysis, qualitative meta-synthesis, or mixed method meta-synthesis, theenvironmental scanningtechnique was employed (Popper, 2008).

Environmental scanning involves using various tools and techniques, such as monitoring documents, resources, media, and social networks, to gain insights into public views and trends.
One effective method for environmental scanning is the strategy of systematic literature review. This approach involves examining and analyzing existing literature to identify perspectives and approaches relevant to the topic under investigation.

Given the novelty of the subject and the diverse viewpoints on the potential changes brought about by AR applications, this study adopts a systematic review method. The research by Denyer and Tranfield (2009) serves as the foundation for this methodology. The research process involves the following step:

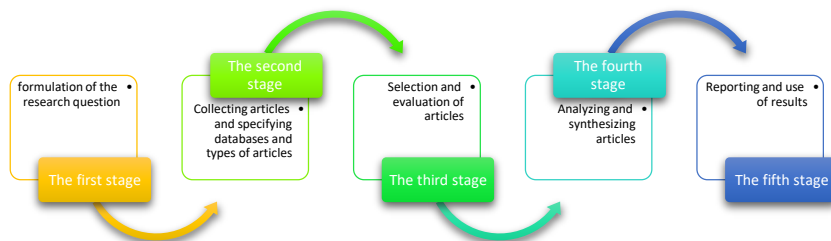

Figure 2. Systematic review method (Deniar and Turnfield, 2009)

After determining the main research question, we conducted a comprehensive search to identify relevant studies on the application of Augmented Reality (AR) in various databases. We reviewed all documents published between 2010 and 2024 that included at least one of the following terms in their title, abstract, or keywords

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Table 1: Search strategy and selected keywords

Key Words	Data base
("augmented reality" OR "augmentedreality" OR "Augmented reality") AND ("advertisement" OR "advertising" OR "marketing" OR "promotion" OR "digital marketing") "augmented reality advertising" OR "augmented reality marketing" OR "augmented reality promotion" OR "augmented reality advertise" "Artificial intelligence" AND ("augmented reality advertising" OR "augmented reality marketing" OR "augmented reality promotion" OR "augmented reality advertise") "Artificial intelligence" AND "augmented reality advertising" OR "augmented reality marketing" OR "augmented reality promotion" OR "augmented reality advertise"	**Scopus**

In the next phase, the 1,035 studies obtained in the previous step were filtered through a four-step process:
- ✓ Number of studies retrieved from databases after removing duplicates: 1,035
- ✓ Number of studies remaining after reviewing article titles: 417
- ✓ Number of studies remaining after re-reviewing titles and briefly examining abstracts: 240
- ✓ Number of studies remaining after reading abstracts: 209
- ✓ Number of studies remaining after reviewing full-text articles: 165
- ✓ Number of journal articles: 95
- ✓ Number of conference papers: 63
- ✓ Number of review articles: 7

Research Findings

Initially, the question "What are the objectives of applying Augmented Reality in the advertising industry?" was addressed through a systematic review of sources and thematic analysis (at three levels: themes, sub-themes, and concepts). The objectives of using Augmented Reality (AR) technology in the advertising industry were identified.

The table below presents the primary and secondary objectives of AR applications in the advertising industry, as well as the desired changes in customer behavior, based on themes, sub-themes, and concepts:

Table 3: Objectives of using augmented reality in the advertising industry

The main goals	Sub-goals	Desired changes in customer behavior	source
	Increase consumer participation	To evolve customer behaviors and buying patterns	A8,A9,A79
	Impact on brand engagement	Supporting customers through the decision making process	٧٩A, ٩A, ٨A
	Increase user engagement	As a tool to attract and .engage the audience	A19

The main goals	Sub-goals	Desired changes in customer behavior	source
Improve customer interaction	Increase consumer engagement	r products and Display you. services in retail stores	A10,A30,A82
	It positively affects customer engagement	Providing new value to customers, increasing service innovation, increasing customer satisfaction, strengthening the value proposition	٨٢A,٣٠A,١٠A
	easing Incr interaction with the consumer brand	Enhancing the shopping experience Providing accurate product knowledge Shaping consumer expectations Influencing purchase outcomes Ensuring realistic virtual experiences -Managing costs for high quality images	٨٢A,٣٠A,١٠A
	Contact us for shopping experience	To evolve customer behaviors and buying patterns	A21,A94
Improve customer experience	Provide a unique experience	commerce -Adaptation of e D technology ٣D to ٢from advanced technology to	A47
	Provide a customized experience	As a tool to attract and. engage the audience	A57
	Create a seamless omnichannel experience	Enhance customer experience with Delivered user -AR-AR experience	٥٧A
	Increasing consumer riencesevasion expe	Display your products and. services in retail stores	٥٧A
	Improving the shopping experience of consumers	,Ensuring compatibility reducing complexity, facilitating testability, increasing observability, forming a positive attitude towards AR	A5,A16,A19,A36,A68
Improve customer experience	Personalized experiences	time interaction with -Real ,the physical environment providing innovative content, increasing information search and facilitating product trials	٦٨A,٣٦A,١٩A,١٦A,٥A
	To provide an engaging experience	raction with time inte-Real ,the physical environment providing innovative content, increasing information search and facilitating product trials	٦٨A,٣٦A,١٩A,١٦A,٥A

The main goals	Sub-goals	Desired changes in customer behavior	source
Increase brand awareness	To create immersive brand experiences	To evolve customer g behaviors and buyin patterns	A65,A94
	Create a brand presentation	Creating engaging ,experiences increasing consumer engagement, inducing transformations in interesting ways	A65,A94
	A new way to interact with the brand	time interaction with -Real ,the physical environment providing innovative content, increasing information search and facilitating product trials	A65,A94
Increase sales and conversions	,Sales optimization maximizing sales potential	Enhancing product ,imagination visual interactive modeling, nt and scale fit assessme simulation of interior design effects	A38,A33,A42,A75,A74
personalization	Customize user settings	Tailoring content and product suggestions based on user data	A 9, A 24
Facilitate purchase decisions	Reducing purchase uncertainty	ual product trials Provide virt confidence-to increase self	A21 , A89
Social sharing	Encourage participation in social media	Create shareable AR experiences to increase brand visibility	A4,A8,A65

To answer the second question, "What are the strategies/tactics for applying Augmented Reality in the advertising industry?", the strategies and tactics for using Augmented Reality (AR) in advertising were extracted through a systematic review of sources and thematic analysis (at three levels: themes, sub-themes, and concepts). The table below presents the appropriate strategies and tactics for AR applications in the advertising industry, as well as the expected outcomes, based on the identified themes, sub-themes, and concepts:

Table 3: Strategies and tactics of using augmented reality in the advertising industry

Strategy	tactic	Expected results	source
Deep customer engagement strategy	Interactive storytelling	based narratives -Creating augmented reality where users can interactively explore products .or services	A4,A30,A76
	Personalized content	Using data to create AR experiences tailored to .users' preferences and location	A5,A19,A33,A61
	Live AR demos	Providing live product demonstrations through AR allows customers to virtually try the .product before purchasing	A40,A35,A33, A57
Experiential marketing strategy	AR events	based campaigns using AR that -Design event draw users to physical locations for interactive .experiences	A79

Strategy	tactic	Expected results	source
	Gamified AR campaigns	Transforming advertising campaigns into arn points or interactive games where users e rewards by interacting with augmented reality content.	A12
Brand awareness strategy	AR filters and lenses on social media	Creating custom AR filters for social media platforms allows users to engage with the brand and share the experience.	A10,A32,A54, A49
	Viral AR content	Designing AR experiences that users share helps increase brand awareness.	A8,A32,A33 A28,A77
Smart packaging strategy	AR packaging	Use QR codes or special markers on packaging that display interactive content when scanne.d	A38,A29,A71
	Unboxing AR experiences	Creating experiences where unboxing a product generates augmented reality content, such as a user guide or exclusive discounts.	A16
	Exclusive packaging campaigns	Offer active augmented reality campaigns mited packaging, access to exclusive through li content or rewards.	A16
Physical environment interaction strategy	AR touch points in stores	Using AR in stores to provide additional product information.	A41,A34
	Public AR interaction points	ons where users can use Setting up special locati their phone to view augmented reality content related to the brand.	A24,A27
Exclusive content strategy	Limited time AR offers	Providing exclusive promotional content through AR that is only available for a limited time.	A12
	usive access to Excl events	scenes -the-Offer VIP experiences, behind content, or early access to new products through AR.	A12
Location- based marketing strategy	based AR -Location advertising	Providing augmented reality ads based on the n, displaying relevant user's geographic locatio content.	A24,A27
	Guidance of users in physical spaces	Using AR to direct customers to specific products or areas in department stores or public events.	A24,A27

Discussion and Conclusion

Augmented Reality (AR) technology, as a significant innovation in the advertising industry, is rapidly becoming one of the most powerful tools for brands and advertising agencies. Therefore, it is predicted that in the future, AR will hold a very important position in the advertising industry. AR has had a considerable impact on advertising interactions, enhancing the customer experience, and fostering deeper connections with audiences. The use of AR allows advertisers not only to engage their audiences but also to deliver advertising messages in a more attractive and creative manner.

The results of this study indicate that the future of the advertising industry is strongly intertwined with emerging technologies like AR. Increased brand awareness, reduced marketing costs, and the creation of personalized experiences are among the key advantages of this technology. However, challenges such as high implementation costs and privacy concerns also exist and need to be managed carefully. With the development of appropriate infrastructure and the formulation of effective strategies, AR can be utilized as a vital tool in the future advertising industry.

AR is a powerful tool for creating deeper interactions with customers, improving user experiences, and enhancing marketing strategies. By using AR, brands will be

able to strategically and effectively incorporate it into their advertising campaigns and achieve better results from their interactions with customers. These findings help brands and companies identify strengths and opportunities, enabling them to design effective strategies for utilizing AR and preparing for new challenges.

The findings of this research provide a comprehensive collection of goals and strategies related to AR in the advertising industry, which can be used as a framework for applying this technology in the future of the advertising industry. For each of these goals and strategies, practical recommendations can be made for the use of AR in the future advertising landscape. The goals, strategies, and practical recommendations can be summarized in the table below:

Table 4: Operational suggestions for the use of augmented reality in the field of emerging tolls (source: authors)

The main goal in advertising	Strategy to reach the goal	A practical suggestion for the use of augmented reality in the future
Improve customer interaction	Deep customer engagement strategy	Using mobile augmented reality to create real-time and continuous interaction between the customer and the provider of goods and services
Improve customer experience	Experiential marketing strategy	Tangible and experienceable goods and services using augmented reality
Increase brand awareness	Brand awareness strategy	Using augmented reality to objectively and concretely introduce the characteristics of goods and services, and to teach the use of goods and services
Increase sales and conversions	Smart packaging strategy	Application of augmented reality to choose the best packaging
personalization	Interaction strategy with the physical environment	Creating a connection with the physical environment through augmented reality and gaining personal experiences before buying goods and using services
Facilitate purchase decisions	Exclusive content strategy	Providing the necessary information and awareness of goods and services for each customer using augmented reality
Social sharing	Location-based marketing strategy and its sharing	Using augmented reality to access remote places and experience goods and services before purchasing , or providing goods and services that suit the customer's environment.

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