The Effectiveness of Augmented Reality Technology in the Airport Advertising

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KEYWORDS:

ABSTRACT:

Augmented reality technology can easily be used as a helpful tool for conveying valuable information to the recipients in the airport in an interactive way. Airports are a collection of interesting objects attached to exciting narratives. With the help of augmented reality, these narratives can include enriching visuals and stories that help us get deeper into the meaning of the advertising message. Augmented reality technology aims to combine a static object with different audio/visuals, building an emotional connection with recipients, which encourages them to make purchases and strongly influences airport advertising content. The research problem is seeking to answer how can apply augmented reality technology in the advertising field to be a more attractive effect in the airport. The research follows the descriptive approach to present the research problem, followed by the analytical approach to present the most important models that the search seeks in the airport advertisements in which augmented reality was used in the last ten years. The researcher assumes that applying augmented reality technology to advertising inside the airport may achieve a more attractive effect, as a result, the recipients respond to the advertising message.

1. Introduction

The airport is a unique stage made up of unique features, and it offers a wonderful combination of emotions and people; everyone is on a journey and the airport is a part of their story. In this modern world, recipients are spending more time at the airport each time they travel. While waiting at the airport, they often shop and read airport advertising. With the increase in the number of recipients, Airline and Airport advertising has become a means of acquiring enormous prospects[1]. As the number of Airports is increasing in Egypt, there is a need to understand the behaviour of airport recipients so that advertisers can develop their advertisements accordingly and show that airport advertising can complement outdoor campaigns.

For decades, airport advertising has been one of the most reliable and effective forms of out of home advertising. Augmented reality advertising is one of the keys of marketing that has multiple forms. Putting augmented reality advertising in the airports will play an attractive communication through the different media of information typically persuasive. Augmented reality technology has attracted attention in advertising with the ability to interact with virtual and real objects to increase attention and motivation. Learning environments with these possibilities become more effective and strong as they become interactive, effective, enjoyable, and allow discovering. This technology is used in different advertising fields and different stages, and it is especially effective in airport advertising[2].

The research is seeking to answer how can apply augmented reality technology in the advertising field to be a more attractive effect in the airport. The Importance of this research is about saving advertising production costs and increasing its efficiency as augmented reality is considered inexpensive advertising media compared to other media.

The aims of this study are applying the utmost dazzling through augmented reality technology in the advertising message. Studying the ability to generate new ways of the recipient perception, discussing user duality of interpretation as a key feature of augmented reality technology. Building an emotional connection with recipients by applying augmented technology in airport advertising, which encourages them to make purchases and creates a strong influence on advertising, and Studying the effectiveness of augmented reality technology in Airport advertising messages.

2. Hypothesis

The researcher assumes that applying augmented reality technology to advertising inside the airport may achieve a more attractive effect, as a result, the recipients keep engaging with the brand.

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[1] Gurcharan singh - january 2021-p.697 - The airport advertising's importance in the present perspective- published research - international journal of management– volume 12, issue.

[2] Aliye Erdem- May 2017– p.480 - Educational importance of augmented reality application- st. kliment ohridski university.

3. Airport as an effective advertising environment

Airport advertising is a static and digital display placed in and around domestic and international airports that deliver a message on behalf of an advertiser.

Airport advertising encompasses all out-of-home advertising placed in airports to reach recipients. Airport advertising reaches many recipients and has been proven effective at delivering branded messages. According to research, most recipients are aware of airports' ads[1] and view brands that advertise there as prestigious

3.1 Ease of recipients' response to the advertisement, in which most recipients traveling are in an excited mindset, making them more receptive to messaging.

3.2 Recipients in an airport have nowhere else to go or look. They need to keep an eye on their surroundings to ensure they make their flight, so they have to see the advertising messaging carefully and focused.

3.3 Recipients who travel on airplanes are wealthier than the general population, which leads to a greater demand for purchase.

4. Augmented reality technology as an Advertising means at the airports

Augmented reality (AR) is a technology that can facilitate dialogue and interaction between the physical and digital worlds, potentially creating value for both recipients and advertisements[2].

Augmented reality (AR) technology can be a powerful tool for advertising at airports. AR allows advertisers to create interactive, immersive experiences for recipients that can engage and captivate them while they wait for their flights.

AR can be used for advertising at airports is through digital displays. Advertisers can create AR content triggered when recipients point their smartphone cameras at the display. This can include 3D models, animations, and other digital elements that appear to interact with the real world[3].

Another way that AR can be used for advertising at airports is through mobile apps. Advertisers can create AR experiences within their apps triggered by location data or QR codes. This can allow travelers to engage with ads more personally and interactively, such as by scanning a code to see a virtual tour of a destination or product.

AR can also be used to create virtual product displays or storefronts that appear in the physical space of the airport. This can allow advertisers to highlight their products as more tangible and immersive than traditional advertising.

The use of AR in airport advertising has the potential to create engaging and memorable experiences for recipients while also providing advertisers with new and innovative ways to reach their target recipients.

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[1] Palvi Jearth, Gurcharan Singh, Shikhil Munjal-2021-P. 700- the airport advertising's importance in the present perspective- International Journal of Management (IJM)-Volume 12, Issue 1.

[2] Mohd Helmi Bin Abd.Rahim, Behrang Parhizkar - Apr. 2016 - P.134- Effective of augmented reality (ar) in marketing communication; a case study on brand interactive advertising - International Journal of Management and Applied Science- Volume-2, Issue-4.

[3] İbrahim İLHAN- 2016- p.582 - Mobil Pazarlama: Turizmde Artırılmış Gerçeklik Kullanımı- Gaziantep University Journal of Social Sciences- Pubished research.

5. The importance of augmented reality advertising at Airports

The airport is considered one of the best places that can be exploited as an effective advertising environment, as explained in the following:

5.1 Innovation

What AR is offering is not just a one-off ad campaign. This is a cutting-edge approach by a destination-marketing group, the first of its kind, to use augmented reality to change recipients' perceptions. Whenever the industry catches on, nobody else will have been first, and whoever chose AR advertising will be looked at as an innovator.

5.2 Inexpensive

AR is considered inexpensive advertising media compared with print advertising in magazines, which tends to be significantly more expensive than online or digital ads.

5.3 Emotional Connection

AR takes marketing strategies to an immediate and sensory level with recipients, allowing greater interactivity in the selling and buying process. AR can create an emotional connection between what the recipient is searching for and what the product can offer. In short, it gives the product a personal feel when recipients can picture it in their own world[1].
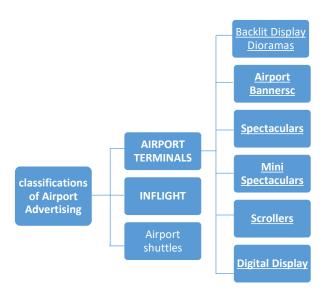
5.4 Urging

AR urges recipients to visit the announced tourist attraction by announcing augmented reality in an innovative and attractive way.

6. Classifications of Airport Advertising

Airport advertising encompasses all types of out of home advertising placed in airports to reach recipients. It includes everything from digital displays on a terminal wall to static ads inside an airport and shuttle bus to spectaculars on a concourse. Augmented reality advertising in and around the airport can be done through different medium like[2]:

5.1 Airport Terminals advertising
5.1.1 Backlit Display Dioramas
5.1.2 Airport Banners
5.1.3 Spectaculars
5.1.4 Mini Spectaculars
5.1.5 Scrollers
5.1.6 Digital Display
5.2 Inflight advertising
5.3 Airport shuttles advertising

SmartArt (1) Classifications of Airport Advertising[3]

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[1] https://www.3rockar.com/augmented-reality-changing-future-advertising/- 27/9/2021

[2] https://dashtwo.com/airport-advertising-in-2021/- 3/15/2023.

[3] Design by Researcher.

7. Considerations for creating the idea of augmented reality advertising at airports

7.1 Advertising should be socially acceptable which means it should be subtle, distinctive, and modest.

7.2 Providing natural interaction. This means that the recipients should be able to interact with the system naturally.

7.3 Fashionably acceptable so that the recipients do not feel strange when they use the system.

7.4 Choose an advertisement location for a successful augmented reality experience inside the airport, preferably in the main lobby, so that it can attract the recipient's attention and interact with it.

7.5 Provides the enhanced advertising experience with high-accuracy sound systems that help the recipient to engage in the enhanced experience.

7.6 Providing special offers to the recipient of the enhanced advertisement, such as taking pictures of himself and sending them to him via the Internet.

7.7 Provide a highly dazzling 3D enhanced advertising experience with an effective dynamic dimension[1].

8 Considerations in designing augmented reality advertising inside airports

8.1 Taking into consideration the area of the airport and the location of the advertisement inside the airport, whether it is in the main lobby or on the windows of displaying shops.

8.2 The locations of the sensors for capturing the recipient's movement and providing them with advertisements in the current environment should be clarified.

The computer will be able to transmit the recipient's movement to the computer processor unit, and those devices are used with the suitable size to the signs that refer to it as well as the color and consideration its position related to the advertisement.

8.3 Distributing the elements of attracting advertisements in the form of a strategically efficient way in the corridors of the airport.

8.4 Take into consideration, the time allowed during the ad trial.

8.5 Allow more than one recipient to interact simultaneously with the augmented reality advertisement experience by providing the advertisement location with an appropriate number of sensors compatible with the place of the advertisement and the nature of the idea of the advertisement itself[2].

8.6 Considering the three dimensions to appear as in reality to achieve the element of strangeness and dazzling, this submits to design the three-dimensional elements accurately on the graphics software, to increase the reality of the display and its ability to attract the recipients.

8.7 It is necessary to study the ways of interaction between the recipient and the advertising inside the airport and the advertisement location and the other recipient movements, and the ease of exposure to the advertising.

9. Effective ways of advertising messages inside the airport

9.1 Advertising requires interaction that motivates the recipient in high performance, intending to provide a successful and individual augmented reality experience[3], which requires an advertising designer to

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[1] İbrahim İLHAN- p.585- op. cit.

[2] Garnet cluny Henry Jensen- 2013- p.8-The effective use of augmented reality in advertising communications- Master thesis- University of Pertoria.

[3] Jaffer, Suraya & Timbrell, Greg- 2014- p.6- Digital strategy in airports- 25th Australasian Conference on Information

provide 3D elements of an impressive and creative, As in fig.(1).

Fig (1) Coca-Cola Augmented Reality for the protection of polar bears and their natural habitat. Reference:https://rubygarage.org/blog/augmented -reality-in-advertising- 5/31/2021.

9.2   provide an interactive material that is easy to perform on top of the recipients so as to motivate them to perform that experience[1], As in fig.(2).

Fig (2) Augmented Reality App let the recipients to try the products virtually on their body Reference:https://rubygarage.org/blog/augmented -reality-in-advertising- 5/31/2021.

9.3   providing a pleasurable presentation while passing the recipient through this advertisement such as taking a special

promotion, or availability to take photos of himself and send those images on his email or on his own social media[2], As in fig.(3).

Fig (3) LEGO AR app In-Store allow the recipient to take photos to attract recipients to physical stores and promote the brand. Reference: https://rubygarage.org/blog/augmented-reality-in-retail - 9/6/2021

9.4 provide recording video of the recipient during interacting with the 3d elements in the advertisement, or facilitating the recipient to try several forms of a product without exhausting the actual replacement of measuring or testing those products and other benefits that accrue to the recipient from conducting this experiment[3], As fig (4).
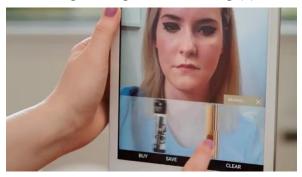

Fig (4) Augmented Reality App for L'Oréal, a renowned manufacturer of personal care products. Reference: https://www.youtube.com/watch?v=uhdOzpblrm0&t=1 s- 9/6/2021

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[1] Timothy Jung , M. Claudia tom Dieck- 2018- p. 13- Augmented Reality and Virtual Reality Empowering Human, Place and Business- Springer International Publishing.

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[3] İbrahim İLHAN- p.583- op. cit.

9.5 Employing enhanced interactive advertising in an appropriate environment within the airport, which is characterized by a spacious and attractive place and appropriate lighting for the enhanced experience[1], As fig (5).

Fig (5) Smart mirror AR-enabled stress-free try-ons to conventional brick-and-mortar outlets. Reference: https://www.pinterest.com/pin/318418636158548122/ - 9/6/2021.

9.6 In the case of displaying the experience on a large digital screen inside the airport, the quality of the digital screen, its location, ways to leave it, and the security of the display to be used for the best use of the recipient, can be used[2], As fig (6).

Fig (6) Augmented Reality Zoo – 2015 campaign Reference:https://www.youtube.com/watch?v=Xmpe1 uYTDgI – 12/5/2022

9.7 The necessity of creating an environment for displaying the interactive advertisement inside the airport with augmented reality technology in a striking way for recipients to motivate them to participate, one of the first examples of integration of an AR system into a print medium is represented by the " Alice's Adventures in Wonderland book"[3],As fig (7).

Fig (7) Alice's Adventures in Wonderland - Book with Augmented Reality. Reference: https://www.youtube.com/watch?v=EAVtHjzQnqY&t=1s - 9/6/2021.

10. Augmented reality drives hedonic value through playfulness

Playfulness is a key benefit of utilizing AR at the point of purchase. Engaging in innovative technology, such as augmented reality, enhances recipient enjoyment and a sense of fun[4], as the perceived play comprises intrinsic enjoyment and escapism. The former refers to the entertainment derived from augmented reality, and the latter refers to a state of psychological immersion that allows recipients to temporarily get away from it all.

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[1] Patrick Bourdot , Victoria Interrante- 2020- p.179- Virtual Reality and Augmented Reality- 17th EuroVR International Conference- Springer International Publishing
[2] Rocco Raso, Sebastian cucerca1- 2017- p.3- Automated augmented reality content- Published research- Springer International Publishing.
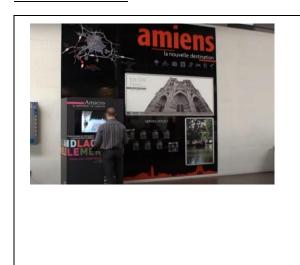[3] Lucio Tommaso De Paolis- 2016- p.370 –Augmented Reality,Virtual Reality,and Computer Graphics- Third International Conference- Springer International Publishing- Part I.
[4] Yalda Pashai-Fakhri -2019- p.5-Gamifying airport experience using augmented reality –Partial fulfillment of the requirements for the degree of Master of Digital Media in the Program of Digital Media- Canada.

With the appeal of playfulness and its ability to immerse. With augmented reality technology, recipients can rather have an experience, because it is engaging, and it is easy to be caught up. It is known that innovation drives excitement for recipients, which leads to those participants displaying high levels of enthusiasm using augmented reality. However, the novelty effect of augmented reality might wear off – meaning that there was a balance between augmented reality's elements of perceived play (hedonic) and perceived usefulness (utilitarian). In general, recipients are willing to try the tool and go in with an open mind, given its novelty. However, the novelty meant that there was likely a short-term gain in terms of recipient experience rather than the more long-term intrinsic value of the technology[1].

11. Analytical Study

11-1 Augmented Reality Campaign For The "Ville d'Amiens"

Advertising data	
Theme	Augmented reality campaign for the "Ville d'Amiens."
Place	Beauvais airport
Announcement date	2011
Country	Paris
Advertiser	Ville d'Amiens
Advertising message	Take the plate on your left and place it facing the webcam.
Target recipient	Passenger in Airport
The means	Interactive Screen display
Reference	https://www.youtube.com/watch?v=sjcC0u77UHw

Creative idea
This campaign depends on using the board with the recipient's left side hand and holding it in front of the webcam and moving it up, down, right, and left to experience a unique 3D discovery. AR
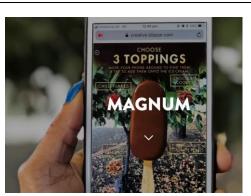
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[1]Beatrice Romano - June 2020 - p.20- Augmented Reality and the Customer Journey: An Exploratory Study - Australasian Marketing Journal (AMJ).

	simply brings tourist attractions to life. It takes a static object and combines it with different content, extra information, and three-dimensional elements, creating a very different kind of experience
Results	In 2011 topped that with 81.4 million foreign tourists defying economic uncertainty, staying on average 10 days longer and spending an estimated 33.4 billion euros, 8.4 per cent more than the years before[1].

11-2 Augmented Reality Campaign For Magnum Ice Cream

Advertising data	
Theme	Drive awareness and footfall for Magnum's retail store and drive purchase intent for the 'Make My Magnum' experience.
Place	Singapore
Announcement date	2018
Country	Singapore
Advertiser	Magnum ice cream
Advertising message	Make My Magnum
Target recipient	Recipients who have 4G devices.
The means	4G devices.
Reference	https://www.blippar.com/work/magnum#page-sections
Creative idea	

Using AR solution a fun and shareable mobile campaign for Magnum ice cream. Tapping on Magnum's mobile banner ads launched the AR experience without the need for an app download. Once in the experience, recipients saw Magnum's different custom toppings floating around them, which could then be selected to personalise their ideal ice cream. Recipients could redeem their creations from nearby stores shown on Google Maps at a discount.

Results	Based on statistical studies it was found that the engagement rate increase by 48.5% and the industry rate increase by 34 times

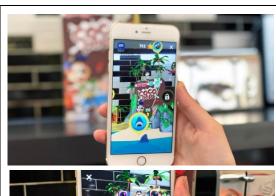## 11-3 Augmented Reality Campaign For McDonald's

Advertising data	
Theme	Drive frequency and repeat purchases to McDonald's restaurants over Christmas.
Place	McDonald's restaurants in the UK
Announcement date	2016
Country	UK
Advertiser	McDonald's
Advertising message	Scan the liners to unlock games
Target recipient	Recipients who have 4G devices.
The means	4G devices.
Reference	https://www.blippar.com/work/mcdonalds#page-sections

Creative idea	
	McDonald's tray liners turned into interactive advent calendars, with new content unlocked every day during the festive period. Recipients could scan the liners to unlock games, selfie filters, and animations, and enter to instantly win Amazon vouchers.

Results	Over 12,000 Recipients scanned on 3 or more different days.

11-4 Augmented Reality Campaign For Kellogg's coco

Advertising data	
Theme	Help children get back to school ready by learning through play.
Place	Kellogg's coco at EMEA
Announcement date	2018
Country	Europe and the Middle East.
Advertiser	Kellogg's coco
Advertising message	An interactive offer a great interactive deal
Target recipient	Recipients who have 4G devices.

The means	4G devices.
Reference	https://www.youtube.com/watch?v=fWHPYeeRoBg-

Creative Idea

Kellogg's transforms breakfast time into an immersive and educational experience for kids. The cereal box transforms into an interactive jungle island, filled with different mini-games to be unlocked. The games test a range of skills, including hand-eye coordination, math, and science, through interactive AR challenges involving parrots, sharks, and more. The campaign was launched on 16 million cereal boxes across four Kellogg's brands in Europe and the Middle East.

Results	Over 7 minutes of engagement, The demand for the Augmented reality advertisement was nine times higher than that of the television advertisement.

Summary:

Augmented reality (AR) technology has the potential to be an effective tool for airport advertising, as it allows advertisers to create immersive and interactive experiences for recipients. By overlaying digital content on the physical environment, AR can engage recipients in a new way, increasing the likelihood that they will pay attention to and remember the advertisement.

Augmented reality (AR) technology has been increasingly used in various industries to enhance user experiences and engagement. AR technology has the potential to create innovative and immersive marketing campaigns in airport advertising that can capture the attention of recipients.

One of the main advantages of AR technology in airport advertising is its ability to provide personalized and interactive content to recipients. For example, using a smartphone or tablet, recipients can scan a QR code or a specific image in an advertisement and see additional information, videos, or even 3D models of products. This can help advertisers create a more engaging and memorable experience for recipients, increasing their brand awareness and sales.

AR technology can also be used to provide wayfinding assistance for recipients in airports. For example, an AR app can overlay directions onto a recipient's view of the airport, guiding them to their gate or other points of interest. This can help to reduce traveler stress and enhance the overall airport experience.

Overall, the effectiveness of AR technology in airport advertising will depend on how well it is executed and how recipients receive it. While there are opportunities for innovative and engaging campaigns using AR technology. In addition, advertisers must carefully consider the potential challenges and limitations of the technology in airport advertising.

Results:

1. Augmented reality technology is a perceptual paradigm whose creativity lies in generating new ways of perceiving the recipient represented by his duality of destination.

2. Augmented reality technology is not limited to one aesthetic, but its aesthetics are branched to include recipient focus, mediation, and mixing the virtual world with the real, interactive.

3. Technology offers new possibilities for participants, environments, performance, and levels of interaction between them.

4. Augmented reality technology allows the recipient to express himself through the work and enables new forms of representation.

5. Increased engagement, as Augmented reality technology can create engaging and interactive experiences that capture recipients' attention. This can lead to increased brand awareness and engagement with the advertisement.

6. Augmented reality technology improved the targeting of specific demographics or individuals, allowing advertisers to deliver personalized content to passengers based on their location, preferences, or other factors.

7. Better tracking and analysis, as using augmented reality technology can provide advertisers with data on how recipients interact with the advertisement, allowing them to track engagement levels, conversion rates, and other metrics.

8. Increased revenue through engaging recipients with interactive and memorable experiences can potentially increase sales and revenue for advertisers.

9. Focus on studying different technologies and technological practices in the faculties of art and design, to develop and generate new creative forms of augmented reality.

10. Using augmented reality to visualize and combine environments with virtual elements.

11. Introducing new possibilities for greater immersion and credibility for augmented reality advertising, creating interactions through technology.

12. Reconsidering the ethical considerations of this type of interactive advertising.

13. Applying augmented reality technology to advertising inside the airport may achieve a more attractive effect, as a result, the recipients keep engaging with the brand.

14. Applying augmented reality technology helps engage recipients and win their loyalty by offering incentives that can get you more newsletter sign-ups. Amassing points to gain rewards incentivize recipients to stay with the brand, discouraging them from taking their business elsewhere.

15. Increasing brand awareness through gamification can encourage people to share the brand with others, as word-of-mouth advertising is priceless.

16. Augmented reality technology satisfies the recipient's feeling of accomplishment through getting rewards. They are sharing the fun with friends and family. They are posting about their high scores on social media.

17. Improve data quality. As the recipient's data is vital to building an effective advertising message, so augmented reality offers to the advertisers to get the recipient's data with their consent while offering them something like discounts in exchange for an email sign-up containing personal information, or asking recipients to complete a survey in exchange for the chance to win a prize.

18. Using augmented reality technology makes the advertisement a kind of gamification advertising. Recipients will not avoid the ad or block it, but they can share it through word of mouth, social media, and newsletters. In other wise recipients often avoids traditional advertising and block them.

19. Augmented reality advertising creates positive associations towards the advertisement as fun and gamification can improve the recipient's feel about the brand. Happy recipients become loyal ones. They tell their friends and family about your products. They advocate for the brand on social media and review sites.

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