

The role of Computer-Generated Imagery (CGI)) technology as a tool for tourism promotion

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Abstract

The world is experiencing rapid advancements in visual display technologies, with Computer-Generated Imagery (CGI) at the forefront. CGI offers immense potential to visually reshape reality in a creative and captivating way. It's a leading digital-age technology in media and entertainment, and its use has extended to the tourism sector to enhance the tourist experience and boost the attractiveness of tourist sites. This research focuses on studying the role of CGI in supporting and revitalizing tourism by analyzing how it's used in tourism promotion. The research findings reveal that employing CGI presents a strong opportunity to modernize tourism marketing tools, provided there is appropriate technological infrastructure, public-private sector cooperation, and the development of skilled technical personnel capable of producing high-quality digital content. The research offers several recommendations, most notably the need to invest in visual content, intensify the production of virtual tours for tourist locations, and train specialized personnel in CGI technology to serve the tourism sector.

Research Problem: The research problem lies in the limited use of CGI in Arab tourism campaigns compared to developed countries, despite its effectiveness in attracting tourists and promoting tourist sites in innovative ways. The research problem is encapsulated by the following question: How effective is the use of CGI technology in revitalizing tourism?

Research Objectives: To clarify the concept of CGI technology and the evolution of its use in the tourism sector. To analyze the impact of CGI in highlighting tourist attractions. To evaluate current examples of CGI use in tourism.

Research Significance: To shed light on the importance of Computer-Generated Imagery (CGI) as a tool for tourism revitalization. To contribute to enriching studies related to advertising technology and tourism.

Research Hypotheses: The use of CGI technology leads to increased tourism awareness. CGI techniques can contribute to attracting new categories of tourists.

Research Methodology: The research adopts a descriptive analytical approach by analyzing a set of digital advertisements that used CGI, examining their visual elements and the messages they convey

Keywords

CGI technology, Tourism promotion, Tourism advertising

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Introduction:

The advertising world has undergone a radical transformation over the past two decades, driven by rapid advancements in information and communication technology. This evolution has led to the emergence of innovative advertisements as a cornerstone of contemporary marketing. Despite possessing immense archaeological and historical wealth, tourism promotion methods in some aspects remain traditional. In an era of escalating global competition in the tourism sector, coupled with continuous shifts in consumer behavior and

increased reliance on digital platforms, there is an urgent need to explore more appealing and effective means of tourism promotion.

Among the most prominent of these means is Computer-Generated Imagery (CGI), which has revolutionized the production of visual content, not only in cinema and gaming but also significantly in advertising. CGI is employed to create three-dimensional images and visual scenes that either simulate reality or transcend its boundaries, thereby attracting tourists through creative approaches that overcome the traditional limitations of photography

and production. This technology also offers unlimited possibilities for embodying abstract ideas and constructing virtual worlds that capture audience attention and create a memorable and impactful visual experience.

While the use of CGI in advertisements has become more prevalent in recent years, there remains a pressing need for deeper study to ascertain the full extent of this technology's impact on tourism revitalization, audience response, and its role in increasing engagement.

Concept of CGI Technology

Computer-generated advertisements, also known as CGI OOH, Faux OOH, or CGOOH, utilize computer software to create visual images that appear realistic or entirely imagined content that is impossible or impractical to achieve using traditional photographic methods.

This innovative medium helps brands push the boundaries of creativity to showcase their products in imaginative scenarios, ranging from highly realistic product displays to boundless fictional brand worlds.

The acronym CGI refers to Computer-Generated Imagery, a technology that denotes:

- "The art of creating still or moving visual content using computer software. This technology is used to create scenes and special effects in films and television programs within virtual reality environments and video games, in addition to its use in various other fields, including two-dimensional graphics. Although the term typically refers to three-dimensional graphics, it also encompasses two-dimensional graphics and image processing." (Aichouche Abdou, 2024).
- "Images produced by computers, a technique that generates or modifies images in advertising, enabling creators to produce stunning scenes, whether realistic or fantastical, that might be difficult to capture with a camera." (Manu, 2024).

Based on the preceding definitions, CGI advertisements are categorized into two types. The first type, "Images Created-Computer" are built using computers, meaning the images are generated by computer software and there were no original images initially; the resulting image is that which the computer rendered. These images can be highly realistic. The second type, "Computer Graphics" refers to images that are transformed, often derived from original images. Computer programs can

convert photographs or other images into something with the same distinct appearance as a computer-generated image. An image can be transformed into a 3D computer-generated image, and the resulting image can then be manipulated by changing the physical attributes of a person, including skin color or size (Abdel-Aty, Shaimaa, & Abdel Aziz, Enas, 2021).

The prowess of Computer-Generated Images in creating visually captivating content differentiates it from traditional advertising methods. Advertisers leverage CGI to innovate visuals that not only align with brand aesthetics but also transcend creative boundaries. Whether showcasing intricate product details or evoking fantastical realms, CGI enhances the visual appeal of advertising campaigns, leaving a lasting impression on consumers.

However, computer-generated images are typically used in both live-action films and animation, often replacing traditional methods. The term CGI encompasses everything from using algorithms to generate complex images or visual patterns to computer programs that generate 2D and 3D animations and special effects (Neeraj Bhatt Shalini Gupta, 2018).

History of CGI Technology:

The integration of digital technology into the animation industry began in the 1960s. By that time, computer science had advanced to the extent that related techniques began to be used for creating animation. The development of multimedia technology also contributed to the evolution of digital graphics. With the aid of this technology, designers were able to use digital techniques to simulate real physical movement and create engaging animated images. CGI, an abbreviation for Computer-Generated Images, is a computer graphics technology widely used in animation. In 1995, the first CGI animated film, Toy Story, was produced, marking a new phase in the development of animated films.

By the late 1990s and early 2000s, CGI technology continued to keep pace with developments and improvements. The quality of graphics, precision, and special effects allowed for the creation and simulation of reality in a more controllable manner. This technology also enabled the creation of any character, place, or movement in a realistic or imaginative way. A large number of films began to computer-generated images to create controllable, realistic scenes and characters (Zhentao Sun, 2023).

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Characteristics of CGI Advertisements

- 1- Unlimited Creative Freedom: CGI advertisements enable out-of-the-box thinking, allowing for the creation of unusual and distinctive visuals. Any idea, no matter how outlandish, can be represented, thereby igniting potential tourists' curiosity and attracting them in unprecedented ways.
- 2- Increased Awareness and Engagement:
 Advertisements leveraging CGI are not merely attractive; they also sustain tourists' interest and engagement. They convey visual messages innovatively, captivating the recipient's attention and aiding in the recall of tourist destinations.
- 3- Cost-Effective Advertising **Solutions:** Adopting CGI in marketing plans can be more cost-effective than traditional advertising. Conventional advertising methods, such as organizing photoshoots constructing or physical sets, are expensive and involve various costs, from hiring specialists to site management. By digitally creating visual elements using CGI, the high expenses associated with physical production can be avoided, allowing budgets to be reallocated to other important areas.
- 4- Efficiency and Flexibility in Production: When utilizing CGI. there are environmental issues related to weather or inability to access hazardous environments. Changes can be easily made if the creative director decides at the last minute to alter an element, such as the background. advantages of working with CGI also allow for multiple individuals with specific expertise to work on scenes simultaneously, accelerating the production process. Furthermore, elements can be easily replaced without needing to reshoot the entire video, and adjustments can be made remotely from any time zone, as the entire environment exists within the digital world of the computer program.
- 5- Seamless Transition Across Platforms: The appeal of using CGI in advertising lies in its unparalleled adaptability. CGI models designed for television commercials can be easily adapted for digital billboards and social media advertisements, ensuring widespread dissemination across all platforms and making the transition between various media seamless and cost-effective (Aichouche Abdou, 2024).

Concept of Tourism Advertising

Tourism advertising is a specialized form of advertising aimed at promoting tourist destinations and attractions through various media channels to attract tourists and motivate them to visit specific locations. It is an effective tool used by countries and tourism organizations to market natural, cultural, and historical sites, as well as available services and facilities for tourists.

Tourism advertising can be defined as:

- "A comprehensive and integrated activity encompassing all efforts made to attract the attention of foreign and local tourists through media to visit tourist areas. These efforts begin directly from the preparation of tourism programs to contracting with tourists until the completion of these programs. promotional mix consists of several forms, each aiming to contribute to achieving the general objective of advertising to achieve the exchange process, and these forms include advertising, personal selling, sales promotion, and direct marketing." (Hussein, Yasmin, 2022).
- A directed communication process aiming to influence the target audience and persuade them to travel to a specific tourist destination by highlighting its unique advantages and presenting them in an attractive manner using various media such as images, videos, logos, and digital experiences.

Factors Influencing the Perception of CGI Advertising

The perception of advertising in the online environment is a complex process influenced by several key factors that affect tourists' perceptions and attitudes towards advertisements, including:

Credibility:

Advertising credibility reflects a tourist's overall assessment of the advertisement's trustworthiness and believability. Essentially, this credibility expresses the extent of a tourist's confidence in the information presented, and this confidence is significantly influenced by the tourist's current trust in the advertiser. Tourists evaluate advertising credibility based on two primary factors: the advertiser's credibility and the veracity of the claims made in the advertisement.

The credibility of the advertising message is one of the main factors affecting advertising effectiveness. Consumers are more easily persuaded by messages they perceive as credible and trustworthy, as various factors influence perceived credibility, including the expertise and credibility of the message source, its alignment with tourist values, and the objectivity of the message. In the digital age, the message source itself can significantly impact credibility.

Tourists' perception of the credibility of CGI advertisements portrayed in realistic scenes positively influences their attitudes toward these advertisements more than traditional digital advertisements (Kristýna Adámková, Jan Hadrava, 2024).

Creativity:

Creativity is an essential factor in attracting tourist attention and influencing their decisions. Creative advertising is characterized by its attention-grabbing nature and memorability, distinguishing it from traditional advertisements. It also has the ability to transform the advertising experience into entertainment and enjoyment, thereby winning tourists' sympathy.

Creative advertising is linked to increased audience engagement, the formation of positive opinions about tourist destinations, and ultimately, an increased likelihood of making a decision. Creative advertising is an innovation driver; it captures attention, stimulates thought, and enhances the mental image of potential tourist destinations.

Tourists' perception of the creativity of CGI advertisements, depicted in realistic scenes, positively influences their attitudes towards these advertisements more than traditional digital advertisements (Lee, J., & Hong, I. B., 2016).

Informational Content:

Informational advertising plays a significant role in shaping tourist perception. Informational content refers to the quantity of useful information provided to the tourist. Accurate and timely information is crucial for influencing tourist perception. When advertisements provide valuable and relevant content, they not only foster positive opinions about tourist destinations but also encourage decision-making.

The digital transformation of advertising media has pushed advertisements towards digital forms. Digital advertising can be defined as any promotional activity undertaken by a known entity through the internet with the purpose of promoting a good or service, targeting internet users (Murude ozen sevinc, 2025).

Digital advertising enables companies to enhance brand image building by creating engaging and memorable content across digital platforms. Digital advertising has become extremely important in the digital age because digital recipients have become more aware of the message content and its function when making purchasing decisions.

The digital transformation and the use of CGI technologies have led to a decline in the use of traditional media, such as print, television, radio, and billboards. Therefore, traditional advertising platforms and techniques seem to have lost their impact on digital communities. However, the rise of digital technologies has been accompanied by new approaches that focus on personalization, feedback, and data-driven analytics. Social media platforms, AI-driven advertisements, collaborations with influencers, and advanced technologies like CGI, Augmented Reality (AR), and Virtual Reality (VR) help connect with tourists on a personal level. Traditional methods aim to build trust and constant visibility, while digital methods aim to reach tourists quickly and enhance their interaction with the product, creating interactions between tourists and advertising companies. Continuous developments in advertising enable professionals to adapt innovative and technology-driven solutions, such as CGI, Augmented Reality (AR), and Virtual Reality (VR). Integrating these platforms with existing advertising strategies enhances tourist experiences and develops relationships between tourists and the tourist destinations they intend to visit.

Role of CGI Technology in Tourism Revitalization

Computer-Generated Imagery (CGI) has become an effective tool in supporting and vitalizing the tourism sector, especially amidst the global digital transformation. CGI is utilized to virtually reconstruct historical and archaeological sites in an interactive manner, offering visitors and tourists a rich visual experience that enhances their understanding and connection to the place, even before their physical visit. This technology is also employed in producing high-quality digital promotional materials that highlight the beauty and details of tourist destinations in an attractive way that is difficult to achieve through traditional photography. CGI technology contributes to:

1- Promoting the country's tourism assets, such as archaeological, natural, cultural, and religious sites, with the aim of increasing awareness in target markets.



- 2- Building a positive brand image for the tourist destination in the minds of potential tourists, reflecting excellence, safety, and tourism diversity.
- 3- Stimulating tourism demand and encouraging tourists to make a visiting decision by highlighting the destination's competitive advantages.
- 4- Attracting new tourism markets and diversifying tourism inflows, especially from non-traditional or high-growth countries.
- 5- **Supporting domestic tourism** and motivating citizens to explore their own country and contribute to the local economy.
- 6- Enhancing tourist loyalty through campaigns targeting previous tourists and encouraging them to repeat visits.
- 7- Effective marketing of seasonal tourism offers and events such as festivals, exhibitions, and cultural occasions.
- 8- Communicating with the target audience in their languages and cultures to ensure the desired impact of the advertising campaign (Abdel Latif, Alaa El-Din, 2023).

Impact of CGI Technology on Tourism Revitalization:

Computer-Generated Imagery (CGI) is considered one of the modern tools with significant potential for revitalizing the tourism sector in Egypt, particularly in light of the country's rich cultural and historical heritage. This technology allows for the visual display of historical and heritage sites in an interactive manner that captures the interest of both local and international tourists.

- 1- CGI technology contributes to enhancing the visitor experience both before and during the actual visit by offering high-quality virtual tours of archaeological sites. This provides visitors with a deeper understanding of heritage landmarks and their historical significance. This impact extends beyond mere entertainment, fostering cultural and historical awareness, thereby creating a distinctive educational tourism experience.
- 2- CGI technology plays an effective role in tourism marketing campaigns. It is used to produce engaging and high-quality visual content that highlights the beauty of archaeological sites, thereby increasing competitiveness in global tourism markets. This technology offers unlimited possibilities for

- innovating new and attractive display methods on social media platforms and official tourism websites.
- 3- CGI technology helps attract new segments of tourists, such as youth and technology enthusiasts, in addition to groups who may face difficulties visiting physical sites, such as individuals with disabilities or the elderly, by providing attractive and effective virtual experiences as an alternative.
- 4- CGI can contribute to alleviating tourist pressure on archaeological sites that may suffer from deterioration due to overcrowding, by providing educational and informative digital alternatives that reduce the need for intensive on-site visits, thereby supporting heritage preservation efforts (Murude ozen sevinc, 2025).

Tourist Attitude Towards CGI Advertisements

In the era of digital transformation, understanding tourist attitudes towards advertising is crucial for aiming to build long-term and companies prosperous relationships with customers. Knowing perceptions of advertisements enables companies to precisely target their audience, create personalized online experience, and build audience trust and loyalty. Companies that view advertising as a tool for communication and building customer relationships avoid manipulation and misleading advertisements. By doing so, they build customer trust and loyalty, enhancing their competitiveness in the market.

It is also important to consider the tourist's perspective. For digital advertising to be effective, it must meet their needs and interests. Regardless of whether an advertisement is relevant, it is likely to be ignored if it fails to connect with the user. Conversely, an advertisement that includes elements such as captivating visuals or engaging storytelling can spark curiosity even if it doesn't immediately evoke a positive brand association. When tourists search for tourist destinations, appropriate digital advertising can serve as a guide, leading them to the next stage of decision-making. By considering the tourist's perspective and the advertiser's goals in digital advertising, the main effects on tourist attitudes can be explored. By analyzing these factors, we can ultimately shape their attitudes towards them. This knowledge enables tourism companies to develop effective marketing strategies (Murude ozen sevinc, 2025).

Analytical Aspect:

1- Advertisement One: "Visit Dubai" Advertisement





Concept:	The advertisement features a personal invitation from ShaRukh Khan, one of India's most renowned film stars, to viewers, asking them to be his "guests" in Dubai. He then takes them on an emotional, warm, and captivating tour through the city's most prominent landmarks. The advertisement portrays Dubai not merely as a tourist city but as a comprehensive "experience" encompassing culture, luxury, authenticity, and adventure.
Target Audience	New visitors to Dubai (domestic and international) Families looking for summer activities
Technologies Used	CGI (Computer-Generated Imagery): Used to highlight tourist locations with high-quality artistic direction. High-Quality Cinematography: Utilization of aerial cameras (drones), slow-motion filming, and professional lighting. Impactful Soundtrack: Complements the visuals to enhance emotions and excitement
Engagement and Reach	The campaign achieved significant engagement, garnering 100 million views and tens of thousands of shares on social media, along with numerous admiring comments.
Cultural and Creative Impact	Reinforcing Dubai's Image as a Cultural Nexus: This was achieved by prominently featuring Emirati landmarks. Presenting the City as a Symbol of Tolerance and Openness: The advertisement conveyed this message through the diverse faces showcased, reflecting the city's multicultural fabric. Connecting Tourism with Emotion and Identity: Shah Rukh Khan's portrayal of Dubai as an "alternate home" fostered an emotional bond. Creative Impact through Breaking Traditional Tourism Advertising Norms: The advertisement transcended a mere video compilation of tourist sites, evolving into a compelling narrative experience.
Strategic Objective of the Advertisement	To attract tourists, enhance Dubai's brand image, increase tourism occupancy rates, and differentiate Dubai from competing cities

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2-Advertisement Two: Dubai Promotion Advertisement



3-Third Advertisement: "Go Beyond What You Think":



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4- Fourth Advertisement: "Come and Say G'day":



5-Fifth Advertisement: "Enjoy My Japan"

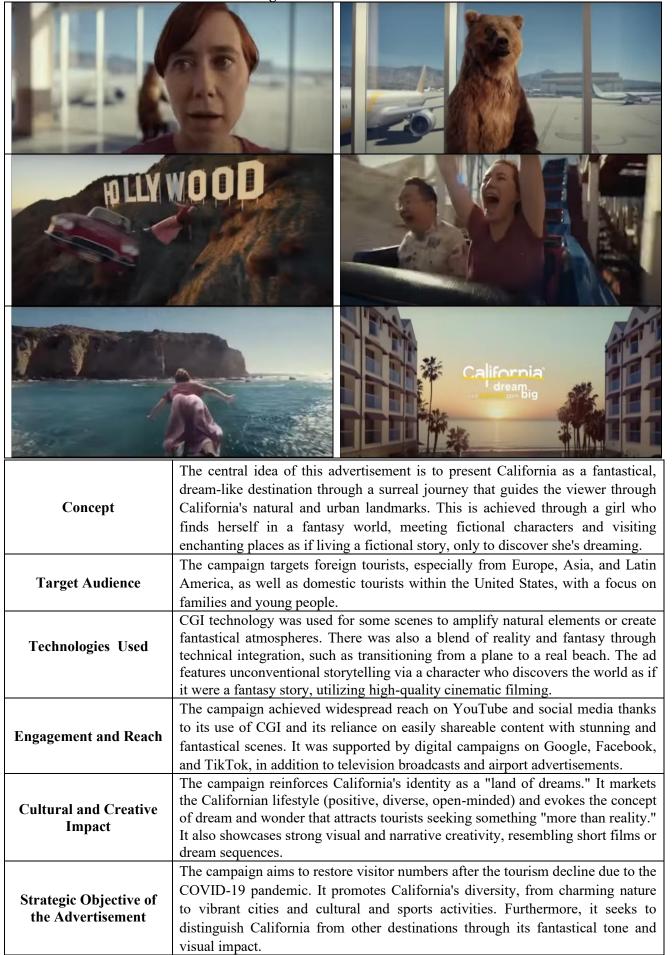


6-Sixth Advertisement: Incredible India

Stunit	Visit India Year 2023 Incredible India	
Concept	This advertisement invites viewers to "discover themselves" through a journey to India, a country of cultural diversity. The ad showcases various scenes from tourist destinations across India, emphasizing that tourism in India is not merely an activity, but a spiritual and cultural journey.	
Target Audience	The campaign targets foreign tourists from middle to upper classes in Europe, America, and East Asia.	
Technologies Used	CGI technology was used for seamless transitions between different scenes. Drones and advanced cameras were employed to display vast landscapes from above (mountains, rivers, beaches). For sound effects, a blend of classical Indian music and Western influences was used, reflecting cultural integration.	
Engagement and Reach	The advertisement achieved high engagement on social media, touching the emotional side of viewers. Numerous comments showed the audience's emotional response to the nature scenes, and the ad garnered millions of views within a short period of its launch. The campaign was disseminated across multiple platforms: YouTube, Facebook, and Twitter.	
Cultural and Creative Impact	It enhanced India's image as the "spiritual capital" of the world. It also used symbolism (color, movement, temple, water) in a poetic and philosophical manner. The campaign shifted many people's perception of India from being a "chaotic country" to a "tourist country." The choice of an inspiring and emotional soundtrack helped reinforce the campaign's self-discovery message.	
Strategic Objective of the Advertisement	The campaign aims to re-establish India's position as a global tourist destination for unique self-discovery experiences, not just traditional tourism. It seeks to increase the number of foreign visitors from segments interested in spiritual and cultural experiences, and to present India as a diverse and attractive country for anyone seeking a deeper meaning to travel.	

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7-eventh Advertisement: "Am I Dreaming"



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Results:

- 1- CGI technology is used to create professional images, stunning visual effects, and captivating videos for advertisements and marketing campaigns. It can showcase tourist places ideally and highlight tourist activities and experiences in an attention-grabbing manner, even if the elements are not physically present.
- 2- CGI represents an effective means of displaying tourist destinations in an attractive and engaging way, enhancing the interest of potential tourists.
- 3- Stimulating Tourism Intent: Marketing studies have shown that promotional videos containing CGI increase the likelihood of a tourist intending to visit compared to traditional videos, which helps tourists make travel decisions.
- 4- Enhancing Virtual Tourism: Providing virtual tours has attracted categories of people who hadn't previously considered traveling, helping to keep destinations in the public's mind.
- 5- Cost Reduction: In some cases, CGI can be more cost-effective than traditional photography, as it doesn't require expensive site preparation or the involvement of a large number of actors.

Recommendations:

- 1- Integrate CGI techniques with Augmented Reality (AR) and Virtual Reality (VR) to offer more immersive and interactive tourism experiences.
- 2- Foster enhanced collaboration among Ministries of Tourism, archaeological authorities, and specialized CGI technology firms. This cooperation is crucial for producing high-quality promotional content that harmonizes historical accuracy with visual appeal.
- 3- Utilize CGI technology in tourism exhibitions and museums to present engaging educational and historical displays that contribute to deeper cultural understanding.
- 4- Prioritize the training and development of local specialists in computer-generated imagery to reduce reliance on foreign expertise, thereby facilitating the expansion of digital tourism projects.
- 5- Develop and launch digital applications and platforms that enable tourists to explore destinations using CGI technologies, ultimately enhancing their travel decision-making process.

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