The Value and Usage of Augmented Reality in Digital Marketing to Improve Consumer Satisfaction and Help with Consumer Decisions in the Tourism Industry

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Abstract: Augmented reality (AR) is increasingly utilized in the tourism industry as a medium for marketing, information, and experience. Only a limited number and areas have embraced this innovative technology. This paper summarizes the current applications of Augmented Reality and speculates on future applications and where current usage of augmented Reality can be applied in the tourism industry. The paper's main purpose is to analyze the value and usage of AR's qualities and potential as a business tool used in advertising and marketing for the tourism industry to increase consumer satisfaction.

Keywords: augmented reality, digital marketing, tourism industry

1.   Introduction

The rapid development of electronic information technology has immensely influenced traditional market promotion. Marketers realize businesses must catch the changing market situations. The invention of innovative technologies such as Augmented Reality has modified digital marketing and even become the primary way of promotion in some industries. Augmented Reality (AR) is one of the world-changing technologies in the 21st century. It combines the digital world with real-world elements and makes the digital components accessible and viewable to the public. Marketers believe that AR can help individuals or consumers enjoy more freedom in searching, viewing, selecting, and purchasing products or services [1]. This development has provided marketers with a new way of promoting. The ability of the present product to create a versional apparel detail for the consumer. This reduces the isometric information and makes the consumer determined and more satisfied with their purchase decision.

2.   Augmented Reality

Augmented reality (AR) is a technology where computer-generated images are superimposed onto objects as a form of enhancement [2]. It augmented 3D by adding virtual computer-generated information to the interactive and registered the image model that combines real and virtual objects. Its ability to create powerful and realistic 3D interactive visual experiences has been used in various ways. The technological development of AR allows it to be used in specialized equipment. The growing use of smartphones is driving the mobile applications market to be one of the fastest-growing media outlets in the history of consumer technology [3].

3.   The Value and Usage of Augmented Reality

3.1.   Augmented Reality in Tourism Destination

The proliferation of AR technologies has had a wide-ranging impact on many industries. In the tourist market, ARs have great value in information gathering and pre-booking stages, as well as the enhancement of the on-site experience. This technique impresses the market. Marketers and inventors appreciate the possibilities of this new technology. According to the Digi-Capital research unit, the Augmented Reality (AR) market will proliferate. The AR market will reach US$120 billion after five years, four times the size of the Virtual Reality (VR) market. With this huge investment, the technology will become more mature. Industrial adopters are rapidly exploring it. Both businesses and customers recognize the potential value and opportunities this technology can provide for their organizations and the tourism industry [4]. Because of increased awareness of this technology, traditional tourist behaviors in information search, decision-making, and service purchase have changed. Adopting AR from a consumer's point of view can enhance consumers' experiences, improve attitudes, and increase their positive behavioral intentions. Many brands use AR to attract customers and increase customer engagement. The examination of AR has added value to the visitor experience.

The growing trend of smartphones makes AR technology more accessible. Mobile devices have become a big part of people's daily routines and interactions. 91% of the world population owns a mobile phone [5], and the vast majority of Americans, 97% of the US population, own a mobile phone [6]. This ubiquity of mobile phones has created a mobile culture where people heavily relay and do everything on their mobile phones. Nowadays, most people will use their mobiles as their primary planning devices. It has evolved into a tool for consumers to gather tourism-related information, plan trips, purchase tour plans, and use them as a map and suggestions while on the road. To maximize the benefits of mobile use, tourist companies will cooperate with local firms to provide tour services and other systems related to tours through mobile apps. Even consumers with limited earning sources and spending capacities can afford sophisticated technology-enriched devices and gadgets with internet connectivity [1].

3.2.   Pre-purchase Promotion and Information Search

Augmented reality can be used in pre-purchase promotional marketing to gain consumer interest. For tourism companies, the primary sales strategy is to promote the geographic place and make consumers interested in going there. Visuals are always the fastest and most direct way to attract attention. Tourist companies use AR to enhance the physical environment and encourage customers to visit. Compared to traditional advertisements such as media and paper promotion, AR creates emotional consumer interaction because of the immediate connection between the consumer and business. AR will provide the provision and addition of information in different formats. By viewing the delicate 3D image model, consumers will gain insight into this beautiful landscape and be willing to visit. This helps companies to help capture and retain consumers' attention.

Moreover, this technology is accessible for mass promotion. Because of the widespread use and adoption of smartphones, mobile advertising has become the most widely distributed form of advertisement [7]. Due to technological enhancement, AR can now be accessed by any mobile device. The combination of mobile advertising with AR technology facilitates the tourism industry's desire to engage consumers. This easy access to technology makes companies easier to spare their tourist plans and the place itself. This can create a broader range of audience access rates - the strong impression with a high turnover rate resorts to more consumers.

Moreover, tourism tends to be heavily researched as customers require lots of information before they decide to go. AR technology facilitates information search in the consumer decision-making

process. AR can ensure that much of the data is available for consumers in detail. The unbiased 3D model can provide the most objective view. The consumer will remember this direct perspective view. Unlike travel blogs or photographs, this modeling will not be affected by any other human prejudice. The impartial percent will decrease human error and ensure that the consumer goes to a place that meets their expectations. It will maximize consumer satisfaction by reducing the unmatched or mismatched desired value. For inexperienced travel consumers, the functionality of AR is the ease of access to travel information and trip guides, which is an essential feature of its increased adoption. For marketers, it is the opportunity to send marketing messages to a targeted audience.

Hotels are using this technology to provide prospective guests to survey the rooms before booking them [4]. For many people place to live determines the quality of the trip. Tourists take select hotels very seriously as they believe that good sleep will allow them to have enough energy for the following day's events. Even some hotels themselves are the reason that people go travel. Information search for lodging is a significant part of traveler arranging. To make the information more justifiable for the consumer. Hotels use AR technology to model their consumer's rooms and floor plans. This will increase the consumer interest in the actual room itself and permit the consumer to comprehend better what the room looks like. It clarifies the word description with visuals and prevents confusion among customers on the number indicating the precise size of the room. With more information provided, consumers can make better decision that fits their needs.

The research process does not end after the consumer decides which travel agent to buy from. Even after arriving at their tourist destinations, tourists must conduct additional research. The research included destination location, mode of transportation, traffic, and restaurants. The traditional way of finding these things will be through word of mouth. However, mobile search has become the most popular way of researching after technology development. Tourist applications are using the AR system to maximize its effect. These sophisticated technologies are being envisioned and implemented to benefit consumers in the tourism industry. The navigation app has evolved when combined with AR. AR allows digital words to connect with the real world. Using AR in a navigation app can enable consumers to directly use their mobile camera to see their current location and arrows pointing to their destination. This way is much easier than the traditional map method, which is time-consuming. It is better than the standard mobile app, as traditional mobile navigation apps do not always have the most accurate location. They may have the problem of locating you in a nearby street. AR can reduce this mistake by matching the image from the mobile to their GPS database and getting the most accurate route for their way go. The app that uses this technology is Apple Map. In Apple Maps, users can use the camera to scan the surroundings and let the app provide a more accurate location. With this location information, the Apple app can create a more detailed suggestion of the direction and can better suggest a route. AR allows tourists to save time and get better results when searching for information during their trip.

3.3. Improvement of Consumer Experience

The tourism industry has started recognizing opportunities for superimposing and adding digital content over actual tourist environments [8]. AR empowers tourists' to explore unfamiliar surroundings, offering exciting and valuable information to enhance their experience. AR can be used in tourist spots as a unique sailing point and a way to improve the consumer experience. The areas that use this tech are museums and theme park hotels. The museum community responded to the changes and needs of the general social environment. They pay more attention to the user's view and think museums must service people [9]. To achieve this, the museum starts to break its abstraction and stereotype by bringing in new technology, AR, to reduce the museum's distance from the audience. AR focuses on the integration with the natural world and integrating virtual data into real situations. In museums, this can help strengthen cognitive information and activities. It allows the visitor to interact with the

virtual world and sense sensory integration. This creates more engaging and immersive experiences for consumers. Using this, visitors will be able to see the unrepeatable history event.

One of the museums that used this technology is Muséum National d'Histoire Naturelle. In June 2021, this museum launched a new "Revivre" project. This project uses augmented reality experience from Microsoft's Hololens. Visitors were able to interact with digital animals that were now extinct. It displays 3D models of animated species that are true to size. And can interact with these animals. Children could enjoy this project, and by seeing this species, they would have a greater understanding of the natural environment and plant itself in the past.

In addition, AR is interactive technology. Many companies use gamification to improve the service experience. The hotel brings more intuitive elements into its building while providing customers with comprehensive experiences. The top company in this area is Disney. Disney invests in gaming apps using augmented reality gaming apps to introduce treasure hunt-style elements in its hotel buildings. It allows children to see Disney characters on their premises. This is a perfect opportunity for children to enjoy. Adults, this AR app enables users to redecorate rooms and place virtual celebrities in the hotel.

3.4. Add Value to Tourism

For business, the traditional value perspective is the benefit a product or service creates and provides to customers. But in the tourism industry, there are different types of tourism, such as education and cultural heritage.

Education is one aspect that adds value to tourism. Education cannot be divorced from human life and daily routines, including leisure, entertainment, and tourism activities. Therefore, the new style of tourism is education tourism. Edu-Tourism is a tourism activity that emphasizes educational material to fulfill travel demands and motivations for knowledge acquisition during travel [10]. Edu-Tourism includes multiple educational tours, such as technology tours, history tours, and environment protection tours. An education tour can enrich a person's knowledge to better understand the culture, history, sociology, and environment in the country, city, or place they visit. AR can help people to learn and gain this information.

Nowadays, local governments and Heritage Protection organizations such as UNESCO World Heritage Centre are dealing with the challenges of trying to inherit or restore cultural and material heritage. However, for material heritage such as historical buildings due to irreversible climate reasons and loss of transitional technology and material. There is irreversible damage to culture and material heritage. To record and keep donning this heritage, many countries and organizations choose to use AR. Many nations and organizations opt to utilize AR to capture and preserve information about this heritage. Many tourist sites rely heavily on innovative technologies to deliver a valued visitor experience [11]. The ability to overlay content without disrupting the real world is only one benefit that makes augmented reality so appealing to the travel and tourism sector [12]. According to this benefit, visitors can use VR while they visit the spot and explain historical events during their visit.

Moreover, AR can show the previous view without overlapping the real-world image. So visitors can compare the actual world building now with how it looked like in the past. Visit to better understand the historical event by viewing the past image visually.

3.5. Future of AR in the Tourism Industry

Over the past few years, the advancement in sensor technologies has led to increased availability and use within the tourism sector [13]. AR is still developing. It has more new features and has become

easier to access. Now in the tourism industry, a limited number of companies are using AR in imitated usage.

AR has enormous potential that can be used in tourism. One way it can be used in restaurants is to create an interactive dining experience. Beverage company Coca-Cola is using this technology. This makes an app called "The Coca-Cola Magic". This was the first time Augmented reality was used as a marketing tool. In this app, people can scan the QR code in the mall, and they will receive personal greetings from Santa Claus. Santa Claus holds a coca-cola and will cheer and drink it [14]. This AR video will evoke a positive emotion and triggers intense sharing.

In the tourism industry, this technology can also also be applied. Restaurants can provide 3D models of their food on menus. Nowadays, many restaurants use e-menu as the consumer can read the menu by scanning a QR code. AR can add value to this way of presenting the menu. The traditional menu will not have a picture, only have word description. But if combined with AR, restaurants can offer their food in actual size and let their customers better understand what they order.

Moreover, AR can present the entire cook process. By doing this, consumers can be more engaged with its food and understand how it is cooked. Furthermore, it allows consumers to spend it waiting until they get a table or wait for the food to come up. Similar technology has been applied in another area by Instagram. Instagram filter by QReal has a Lobster Mac&Cheese filter [15]. This filter place a photorealistic 3D model of a dish of lobster macaroni and cheese on a flat surface. This technology can be applied in food promotion, so the restaurant can make the 3D model accessible through a mobile device. So the consumer can make a better decision when they order.

Record the making process can also be used in any cultural heritage. Some cultures and technic become cultural heritage because of limitations and the number of people who are inheriting them, so people can lose this culture. AR can solve this problem by recording the entire cultural event and how the technic has been done. The transitional way of inheriting the is through paper or word of mouth. However, there is a limitation of the word; although it expands what it is in writing, there will still be some parts that are not clear enough. However, if AR records culture, people can better understand the culture. AR is better than traditional camera recording as it doesn't have an angle limitation. There is more detail in AR. AR can provide a 3D model for the culture technic; for people viewing this, there is no blind angle, and they can view it in all dimensional and grades.

4.   Conclusion

In conclusion, augmented reality has become more mature. It has a broader range of use in the business area. AR has emerged as a crucial component of the travel and tourist sector. There are several uses for it in the decision-making process. It helps consumers make decisions and enables them to reach better, more individualized choices that satisfy their needs.

Moreover, this technology improves the travel experience for the consumer. AR enhance their travel experience. The combination of the technological and natural worlds creates a new perspective of viewing the world. They make a unique experience for the consumer with higher satisfaction.

Additionally, AR generates much new value for the industry, such as improving the preservation of our cultural heritage and unique perspectives for consumers to comprehend history. AR can benefit from some things in the tourism industry, like restaurant food promotion. Overall, augmented reality is a technology that dramatically influences and significantly helps the tourism industry.

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