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Mobile Marketing: Usage of Augmented Reality in Tourism

Mobil Pazarlama: Turizmde Artırılmış Gerçeklik Kullanımı

İbrahim İLHAN[1]
Nevşehir Hacı Bektaş Veli University
Evrim ÇELTEK[2]
Gaziosmapasa University

Abstract

The developing number of applications by smart devices provides an expanding diversity of travel-related services. In the most recent decade, marketers and advertisers have developed more innovative practices to attract consumers. One of these new marketing tools is augmented reality (AR) application with the smart technologies, which is considered as an advertising and new marketing communication instrument that increases awareness and helps get information. The use of augmented reality has unfolded across several sectors in recent years. One in every of the areas of wherever this technology will notice a possible use is that the tourism industry. AR is taken into account extremely vital for promoting in several industries; but, within the tourism industry there exist comparatively few researches and articles despite the very fact that tourism may fine benefit from the applications for these practices. Therefore this study aimed to seeks;

1) To identify the potentials of the AR applications within the tourism industry.

2) To identify the AR applications in several tourism businesses at the tourism industry from the attitude of promoting, for instance hotels, restaurants, museums and transportation.

Keywords: Smart Technologies, Augmented Reality, Mobile Communication, Mobile Marketing, Digital Marketing, Tourism Marketing.

Özet

Akıllı cihazlarla uygulanan çok sayıda uygulama seyahatle ilgili hizmetlerde genişleyen bir çeşitlilik sunmaktadır. Son on yılda, pazarlamacılar ve reklamcılar müşterileri çekmek için daha yenilikçi uygulamalar geliştirmişlerdir. Bu yeni pazarlama araçlarından biri farkındalığı artıran ve bilgi edinmede yardımcı olan, yeni bir reklam aracı ve pazarlama iletişimi aracı olarak kabul edilen, akıllı teknolojiler ile uygulanan artırılmış gerçeklik (AG) uygulamalarıdır. Artırılmış gerçeklik kullanımına son yıllarda birçok sektörlerde tanıklık

[1] Assistant Professor, Nevşehir Hacı Bektaş Veli University, Tourism Faculty, e-mail: ibrahim@nevsehir.edu.tr

[2] Assistant Professor, Goziosmanpasa University, Zile Dinçerler Tourism Business and Hospitality Management College, e-mail: evrimceltek@ yahoo.com

edilmektedir. Bu teknolojinin kullanımına imkân sağlayan alanlardan biride turizm sektörüdür. AG çeşitli sektörlerde pazarlamada hayati öneme sahiptir ancak, turizm sektöründe bu uygulamalara yönelik çok az sayıda araştırma ve makale bulunmaktadır. Bu sebeple bu araştırma:

1) Turizm sektöründe AG uygulamalarının potansiyelini tanımlamayı,

2) Oteller, restoranlar, müzeler, ulaşım gibi çeşitli turizm sektörlerinde pazarlamada kullanılan AG uygulamalarını incelemeyi amaçlamıştır.

Anahtar Kelimeler: Akıllı Teknolojiler, Artırılmış Gerçeklik, Mobil İletişim, Mobil Pazarlama, Dijital Pazarlama, Turizm Pazarlaması.

Introduction

Technology in today's world has constantly been developing and even each different day a replacement technology is introduced to individuals. They are largely new tools or applications that ease people's life and are largely mobile, easy to use and multi-functional. Augmented reality is one of these technological advances, which will be benefited in numerous areas.

AR is a type of technology in computers generates images that are superimposed onto any surface to enhance the issue of concern. Augmented reality (AR) permits marketers to have a combination of the physical world and also the digital world, that allows each users and brands to attach so much before or throughout and when a product is purchased. AR might yet be used as a new way of ad in any written materials like tourism catalogues, brochures, pamphlets, flyers and then on. This implies that augmented reality might offer a much better understanding of what the client desires to buy, use or get pleasure from. It should be regarding accommodation, entertainment or even special events. Indeed, some services are underutilized in tourism and hospitality. During this sense, augmented reality systems additionally be used effectively as a particularly persuasive power and should also offer advantageous opportunities to promote services with success (Yovcheva et al, 2012).

AR is taken into account extremely vital for promoting in several industries; but within the tourism industry there exist comparatively few researches and articles despite the very fact that tourism may fine benefit from the applications for these practices. Therefore, the most purpose of the article is to supply an understanding of the qualities and potentials of AR as a promoting tool for the tourism industry.

Augmented Reality

Smart phones and various other mobile applications have been widely used, which has provided new ways that allow the tourism industry to connect their visitors during their travels. Indeed, the wide use of smart phones has led to more and more mobile applications (apps) in consumer technology (Eden and Gretzel, 2012), and respectively AR has become one of the new advertising and

marketing tools. AR had been used in many brands to appeal to customers and to improve customer commitment (Höllerer and Feiner, 2004).

With the help of AR, the users of smart phone and tablet computers point their built-in cameras on these devices at whatever object they want, which then generates a 3D video (Azuma, 1997; Linaza et al, 2012). This object may be a print advertisement or even a coffee cup at a well-known coffee shop. In other words, augmented reality allows businesses to combine the digital world with the real world. This extraordinary function is particularly appealing to younger tech-lovers who generally hesitate to use traditional advertising methods (Craig, 2013). AR, however, does not only look attractive to young population but also old population. This is well explained what ABI Research estimates about the market for augmented reality in the US: $350 million in 2014, which is much higher than $6 million in the US market in 2008 (Russell, 2012).

AR enables its users to take digital information such as a current photo and integrate it into a live stream video or into the real time, present environment of the user (Höllerer and Feiner, 2004; Craig, 2013; Berryman, 2012). The software developed for augmented reality is the source of all these possibilities. Smart phones with the AR will make use of GPS technology and the location of the users will be identified to determine the orientation of the device (Taylor, 2013).

AR applications are characterized as an overlay of computer graphics to the user's actual field of view (Haala and Böhm, 2003). In augmented reality technology, in very basic terms, reality and virtual world are enhanced or augmented, which assures the users experience the combination of both worlds (Carmigniani et al, 2011, www.vrs.org.uk, 2013).

By augmented reality, virtual images are generated by computers and these images could be superimposed onto physical objects in real time. In other words, virtual images are used to interact by the users in a smooth way (Billinghurst, 2002, Azuma, 1997).

Augmented reality is utilized in marketing and advertising sectors as a tool to enhance particular features of a product, which makes it more appealing to the customers and in return increases sales. In 1960s, the first AR like systems developed and yet in the early 1990s, augmented reality was considered as a technology and a separate research area from virtual reality in its own right (Craig, 2013).

An AR system basically has to accomplish three requirements. The first requirement is about the combination of real world and virtual world, which is actually the core requirement of AR. The second requirement covers issues regarding the separation of AR from mixed reality or mixed media, which is achieved by 3Ds. In other words, in AR, the real world must be registered in 3D

with virtual world. The third one requires AR to be interactive in real time. In other words, the system reacts to the users and can be updated in real time. Some off-line augmentations are already in use such as the computer graphics in movies but this last requirement actually makes AR distinctive from all off-line augmentations with all these features that it has (Wagner, 2007; Linaza et al, 2012).

AR used in many areas such as marketing, entertainment, sightseeing, tourism industry, fashion and medicine. For instance, in marketing, AR is utilized to present new products and thus attract prospective customers. A good example of this is Stella Artois, the brewing company. They utilize a phone application called Le Bar Guide and help people find pubs where they can buy Stella Artois products. Similarly, AR is used in gaming, entertainment and fashion. For instance, the November 2009 issue of Esquire was on AR. In addition to this, AR is used in museums to provide their customers with additional information about an object or current displays. Similar to museums, AR is used in sightseeing to provide information about a destination, a tourist attraction or the reconstructions of ruins in a particular place. Berryman (2012) states that AR is even used to provide "situated documentaries" that "narrate historical events that took place in the user's immediate area by overlaying 3-D graphics and sound on what the user sees and hears". Augmented reality is also used in many other areas such as games, military applications, advertising, marketing, sport, the arts, healthcare, architecture, construction, and entertainment as well as art, leisure and tourism and the workplace (Kounavis et al, 2012).

Challenges for Augmented Reality

The popularity and attractiveness of AR has increased recently. The primary reason for this is the growing use of smart phones that provide location-based services. Yet, there are still many challenges regarding the technology. First of all, AR is a technologically complex service. In addition, there are no standards for AR. This means that every single device and platform has to work for its own individual development because interoperability is not possible yet. Moreover, despite the fact that smart phones support the location-based services, they are not completely accurate in locating the device that is sought for augmented reality. Also, tall buildings may prevent the present GPS systems in smart phones from working properly (it may happen even indoors). More importantly than these technological complexities, augmented reality faces other difficulties as well. This may include privacy issues, ethical issues and user issues (Carmigniani et al, 2011; Berryman, 2012; Russell, 2012)

Handheld AR is believed to be appropriate for real life usage by regular end users such as customers and home users. However, it may not be applicable for other variations of AR setups. The handheld AR is a suitable mass-market interface provided that it meets the requirements below (Wagner, 2007): 1. *Low cost:* It must be affordable to be used anytime and anywhere, which will

therefore carry on the commerce of off-the-shelf devices. 2. *Robust and fool-proof:* AR system must be strong and fault-free so that inexperienced users may be able to use it without any supervising, which requires the development of software and hardware that are particularly designed for non-expert users as well as the creation of intuitive user interfaces (Höllerer and Feiner, 2004). 3. *Self-contained operation and networking support:* It is crucial to promote collaboration which helps release the full potential of AR applications and this can only be achieved by networking. On the other hand, users desire to use their devices at anytime and anyplace, which requires self-contained operation. This means that a successful system is the one, which makes use of networking capabilities, but at the same time is able to run standalone (Wagner, 2007). 4. *Tracking support:* High quality and commercial tracking solutions are successfully utilized in many AR research approaches and it is compatible with the fact that the primary requirement to any AR system is probably real-time tracking. However, for the masses, AR system should utilize simpler solutions, which support built-in device capabilities. 5. *Rapid prototyping:* Everyday new applications are created and new concepts are introduced; therefore, it is important for AR system to keep up with these advancements. 6. *Content creation:* Despite the fact that all users are immediately amazed when they are first introduced to AR system, but after this "amazement" phase is over, they demand practical benefits. In AR system, these practical benefits require a strong content creation channel. To achieve this, a seamless chain of tools that counts on industry standards are needed because getting data in a way into AR application is not enough for research (Carmigniani et al, 2011; Berryman, 2012; Russell, 2012; Wagner, 2007).

Three requirements should be fulfilled to boost the market. First of all, it should be socially acceptable. In other words, it should be subtle, distinctive and modest. Second is about providing natural interaction. This means that the users should be able to interact with the system in a natural manner. The last one is its being fashionably acceptable so that the users do not feel strange when they use the system (Santosa and Gook, 2012).

Augmented Reality Usage in Tourism Marketing

Smart phones provide services (either a GPS or a more advanced type of service) that help locate the device and at the same time the user at a particular place. Once smart phones receive data, a comparison is made between data from the camera and other data, generally image-based, reserved in the database. This process allows smart phones to identify or know what the built-in camera is pointed at. Sometimes, physical markers such as quick response (QR) codes on objects in a place cue augmented reality systems, which, then, retrieves data from a number of web-based sources, like Google, Twitter, Yelp, Flickr and a totally different source, to superimpose on that image (Berryman, 2012). Compatibility between the digital data and what the camera captures regarding the angle, the height etc. is required so that the final outcome

emerged will be meaningful to the users, which is called AR that provides more information than what the present reality offers. As illustrated above, smart phones are good examples of AR; however, various other systems, which, for example, use special glasses or goggles to display information, also exist (Höllerer and Feiner, 2004). Some systems may utilize wearable devices and some others are conducted by gestures. Systems using specialized contact lenses for the display of information are being developed. It is also possible to have systems operating indoors and outdoors and systems that can operate only in designated areas. Apart from all these systems that operate differently from each other, other systems, which may be beyond our imagination for the time being, will definitely be developed (Berryman, 2012, Vaughan, 2009).

AR allows the superimposition of digital content like online information, graphics or other images on real world in the way they are seen through a camera. Therefore, AR may be utilized highly in tourism industry. When tourists, for instance, point the built-in cameras on their smart phones or tablets to an augmented reality image of a product, they can easily access to interactive 2D or 3D visual superimpositions or video demonstrations of this product. These augmented images may be the cover or page of a magazine, billboards at a bus stop, a daily newspaper or any other things available in one's environment (Höllerer and Feiner, 2004; Craig, 2013; Berryman, 2012). In this sense, augmented reality is a functional system in satisfying the needs of tourists who desire to have easy access to more information, entertainment and guidance at any time and place they want, so it helps tourism businesses build strong connections with mobile consumers. AR aims at uniting the expectations of consumers with the digital strategy of brands in reality. This may occur even in the advertising phase or during the sales of the products. AR allows consumers to augment any available objects or images in their surrounding as long as they have a unique visual profile such as logos, catalogues or brochures in general as well as hotel catalogues or brochures, magazine covers or pages, posters, billboard, retail displays, business cards, signs, symbols, tickets and the like (Carmigniani et al, 2011; Berryman, 2012).

Considering all the opportunities it provides, AR may be very well utilized as a marketing tool in tourism industry. With the help of augmented reality systems, consumers find any information they want regarding their holiday plans. For instance, they can easily reach the previews of their target destination, hotels and restaurants as well as various other information, attractions or facilities about them (Höllerer and Feiner, 2004). These systems will help them have an idea of what a destination, hotel or restaurant offer and how the atmosphere is in a place and what might be the possible tourist attractions to visit, which actually helps them make their decisions. For instance, consumers may download the Starbucks Cup Magic application on their smart phones and they can point it to the cup they are holding, which will allow them to produce animations in seconds involving five different characters (an ice skater, a squirrel, a boy and his dog sledding and a fox), which are illustrated on the

coffee cups. They can also interact with these characters and even learn about special offers or send e-cards or e-gifts (Russell, 2012).

Augmented information systems not only merely provide valuable and crucial information about a tourist attraction or destination but also maximize their experience in their travels and offer entertainment opportunities as well (Kounavis et al, 2012). AR also has the capability to offer customized content and services to the all users including tourists according to their particular needs. In other words, augmented reality may function upon pre-requests and display content accordingly when tourists are visiting the sites in a destination. Because mobile augmented reality applications support the addition of new layers to their reality, an interactive and highly dynamic experience is achieved. In addition, tourists can also benefit from other facilities or services and adjust their navigation by the help of the commentary of the destinations or locations of their choice because these applications are mostly on mobile devices like smart phones or tablets with GPS functionalities (Carmigniani et al, 2011, Kounavis et al, 2012).

Tourists may use mobile AR applications for many things such as searching for information, sharing or exchanging information and useful tips as well as comments on a location or destination with a large network. Thus, connectivity among other users, in this case tourist, may be achieved and the sharing of experiences is enhanced (Russell, 2012). Furthermore, mobile AR applications can help tourists prevent themselves from information overload or irrelevant information by tailoring their needs and adjusting the settings of the applications they are using upon request. It is beneficial for tourists because a vast amount of information can be found about historical sites and museum exhibitions and it might be overwhelming to get the information they particularly seek for. Therefore, museums, heritage sites, cities and tourist professionals in general may organize and transmit information in layers or they may provide information upon request, i.e. according to the tailored needs of tourists with respect to their interests, age, occupation, information level and so forth. Personalizing their visit according to their wish, as a result, may maximize the enjoy they take from the trip and make it a remarkable experience (Carmigniani et al, Berryman, 2012).

Mobile AR applications can also be regarded as social applications because they enable the users to communicate in a large network. Therefore, it may be argued that applications that support the functions of augmented reality "must exploit the unique characteristics of mobile devices and mobility in order to enhance and enrich the interactions allowed" (Kounavis et al, 2012).

Finding destinations is not the only function that augmented reality. It is also used to display background information. For instance, Columbia University has developed a mobile AR restaurant guide, which provides an interface through which the users can reach a database of all restaurants in Morningside Heights,

New York City, via an overview 3D map. By using this guide, the users can make decisions among a number of options regarding their preferences. If the users have selected an establishment, they can reach further information via a popup window, which describes the restaurant briefly, displays the phone number and provides an image of the interior of the place. This popup window also allows the users have a look at the menu, read the reviews of the restaurant, if there is any, and visit the restaurant's website (Höllerer, and Feiner, 2004).

It is certain that such personal platforms would be appealing to direct marketing agencies. For instance, in tourism businesses, pedestrians could be offered virtual discount coupons. Similarly, relying on the users' individual profiles, virtual billboards could advertise products that are particularly attractive to a particular user. Moreover, on their eyewear, the users can view virtual 3D product prototypes. In such an information-rich environment, to secure the users from unwanted information augmented reality platforms would need to integrate filtering and management mechanisms (Höllerer, and Feiner, 2004).

Museums

Museums can have to be compelled to do everything they have interaction with their customer, through their displays, education and reaching programs, and by being as open as potential to what their audience desires. Museums round the world nowadays face the challenge of accelerating and maintaining traveler numbers, particularly with younger audiences. A fall in guests is seen by most as a negative outcome, each financially and in terms of wider social and academic impact. It will happen because of a variety of things; however one among the foremost vital is that museums will usually realize themselves competitive with the product of the industry that at its heart is within the business of telling a decent story.

Seeing outdoor areas in their historic context constitutes one vital application of augmented reality that native museums have embraced. An excellent example of this can be Clio, a non-profit, cooperative effort between college at Marshall University that's a crowdsourced geospatial guide to history and culture. Users will contribute to building the site by pinning images or videos of historic or cultural events to specific coordinates (Radsky, 2015). One trending augmented reality application centers on the conception of "re-creating" the initial, or exploitation data of paint and art conservation, also as digital imaging technology, to reconstruct paintings to their original state. As an example, comes together with Harvard's "Augmenting Rothko," the Vincent van Gogh museum Antwerp's "Van Gogh re-created," and also the church of Sant Climent de Taüll, have digitally reconstructed original works of art, permitting guests to examine the valuable design in its original condition (Radsky, 2015).

Museums might build interactive learning eventualities, which might remodel guests from passive viewers and readers into active actors and players. Within

the latter case, the educational method is far more practical. Museum curators will simply prepare custom-made eventualities appropriate for youngsters of various age teams. Moreover, such displays may be used not solely among a museum, however additionally during a college class (Wojciechowski et al, 2004:11).

AR is starting to create an effect on modern art. Examples embrace SFMOMA's art project that consists of projected creative styles onto the outside of their building, and "A Moment in Time" photography show that brought motion to still images with Aurasma's AR technology. There's no doubt that as artists continues to make augmented projects; art museums ought to adopt the technology simply to show their work (Radsky, 2015).

One of the foremost common target audiences for augmented reality applications are youngsters and younger students. In such cases, the most goal of AR is to show the historic, artistic, or scientific material during a fun and fascinating manner. The Samsung Digital Discovery Centre at the British museum focuses on "enabling youngsters to bring the world's history and cultures to life through advanced technology." The Science museum in London has developed an application that turns James May, one among the hosts of the favored BBC show "Top Gear," into a virtual museum guide, documented during this fascinating video that explores the goals and technology that went into making the appliance. Additionally, the invention Centre's augmented reality guide to the Parthenon gallery, "A Gift for Athena" was recognized at the 2015 Museums and the internet Conference. The Asian Art museum in San Francisco added seven AR enabled displays as a part of their 2013 Terracotta Warriors exhibition. In conjunction with celebrity guides, ancient Chinese armies, and Greek gods, it's maybe not shocking that dinosaurs, that never appear to stop wonderful youngsters or adults, became a primary action for augmented reality applications. Examples embrace The National museum of Natural History's "Skin and Bones" app, the Cincinnati museum Center's "Ultimate Dinosaurs" exhibition, and therefore the Royal Ontario Museum's arrange to bring these large reptiles back to life (if solely through the iPad screen) (Radsky, 2015).

The Cleveland Museum of Art and Bologna's Museum of Archeology are exploitation QR (Quick response) codes to try and do audio tours of their collections. The tour is for the new galleries: ancient near eastern, Greek, Roman, Egyptian art; Byzantine and medieval art; African art; and prints and drawings. Once the code has been scanned, the user is taken to a web version of the audio tour. The poster-sized art ads are in eleven completely different kiosk locations throughout Cleveland, together with little Italy and Tremont and smaller posters were placed thorough libraries and different public areas. The QR code takes art enthusiasts right to the museum's webpage, driving internet traffic and permitting tours to be detected right off the smartphone, promoting the new galleries. Smithsonian Natural History Museum used QR codes as a part of an exhibition on Neanderthals. The "MEanderthals" campaign's QR codes sent

users to a web site wherever that may transfer a photograph, see what they might have seemed like 30,000 years past, and share via Facebook and email. The Virginia museum of Fine Arts, in coordination with the Martin Agency, launched a campaign delivery along QR and AR. They have created areas in multiple cities across the East Coast and in thirty three Richmond Starbucks to act as virtual museums. Places like vacant tons or the streets of SoHo, are remodeled into art galleries exploitation QR codes that launch the AR app (using Layar) that "places" the art "on the wall" of the smartphone. People in New York and Washington, D.C. get to get pleasure from this exhibition as they walk down the streets of their town. To additional the QR cause, the print and out-of-home components used a portrait of Picasso created entirely of QR codes. Once a phone scans the QR image, it's re-directed to a landing page that includes Picasso's work and a call for participation to shop for tickets to the exhibition (Wheeler, 2011).

Accommodation Sector

AR can be a strong tool for any hotel's promoting campaign. The technology uses computer-generated sensory inputs to change the approach users understand their current atmosphere. By embedding "auras" (the business term for an augmented reality digital element) on physical objects, hotels will bridge the gap from their physical properties into guests' digital worlds. By exploitation of AR in hotels, the experience of the hotel guests is often improved. Hotel owners will have applications which may offer the guests with the direction to their hotel rooms once they sign in with the app. Options may be added which could be able to offer the guests with obtainable room services that they will determine exploitation their mobile devices within the reception (Cross, 2015). Employees' communication may well be created easier with AR. Presently AR headsets facilitate the military to speak with one another while not really talking. Similar techniques are often utilized in hotels (Wilson, 2014). Marriot Hotels had teamed up with Blippar and revealed an interactive advertisement within the wired magazine. The users of the application might scan the advertisement and see a video that showcased the innovations of the hotel's chains (Borison, 2013). Omni Hotels and Resorts created an application known as Omni Live that the users might transfer to check videos showing chefs at work within the kitchen, virtual tours and client reviews (Wilson, 2014b). The Hub hotel from Premier Inn, the U.K.'s largest lodging chain, is one in all the few properties that have incorporated the technology. Every hotel room at the property includes a wall map of the encompassing area. Customers will purpose their smartphone at the wall concerning and examining info about native points of interest. With the instance of the Hub in mind, hoteliers might probably use AR to boost brochures and different printed materials. Photos sitting at a hotel's bar or restaurant and having the ability purpose your device at the menu to check reviews and suggestions of varied offerings. Alternative sensible uses for the technology would be permitting guests to check the last time their room was cleansed, or a pop-up hotel map (http://hospitalitytechnology. edgl.com, 2015).

To assist find the proper hotel, the Hotels.com world among Wikitude provides not solely an AR view and placement of all obtainable hotels, however the graphic interface additionally clearly marks out the value client can pay for the evening, also as a star based mostly guest scoring system. Once guests have found a hotel that matches their criteria, clicking on the floating icon can point out hotel.com powered data together with the hotels. For power users who wish to check and distinction, the Hotels.com world additionally offers a listing view that lets quickly scroll up and down a list of hotels close to there. An easy tap on the list icon within the top navigation menu can add an extra layer on high of the AR view and present a listing of hotels around. This may be quite handy once guest has narrowed his/her decisions all the way down to 2 or 3 hotels and don't wish to spin and locate every individual hotel. Correspondingly the geographic location, guest may notice awesome range of Hotels.com choices around. For instance, if you're within the middle of Manhattan, there'll be literally many hotels around you. So as to more customize your experience, Wikitude have designed a filtering mechanism into the world. By clicking on the funnel icon within the top menu, will quickly and simply filter by value/price, user rating, and distance (www.wikitude.com, 2016).

Restaurants

In case of restaurants, you'll be able to have an interactive menu that comes alive once diners point their device's camera at any specific product. 3D photos of the dishes and drinks may be offered exploitation AR. Dining is a crucial a part of the hospitality business. Diners returning to the restaurants will have an interactive dining expertise with AR. They might be able to choose from totally different obtainable themes and customized their tables. AR might additionally facilitate in translating the language of a menu to those that the guests might browse simply. A multi-media menu might additionally offer them with the choice to check however a dish would seem like. Equipped with an AR application, guests will have the most effective eating experience (Wilson, 2014b). McDonald's has used AR in several ways in which in its numerous shops. Whereas there's a McMission AR application that lets users play mini puzzle games and win prizes. In Inamo restaurant in London, users will choose their table prime and customized with augmented reality. They're additionally able to order things from multimedia system menus and see live video-feed from the kitchen (Wilson, 2014b). Ordering healthy was next to not possible at the most restaurants before ERICSSON developed their interactive 3D AR menus. The application permits guests to look at pictures, ingredients, and nutritional info for any menu item. And it does translation for various languages. The FAST FOOD REALITY application projects restaurant locations and data over time period pictures. And there are maps too (Allen, 2016).

In order to incorporate families into its marketing strategy, Boston's Restaurant Bar launched a 3D AR game for the kids. The application keep the kids

entertained whilst allow the parents to enjoy a nice meal every time they visit the restaurant. Additionally, training activities are also available on the app to continue the relationship brand when the customers are not dining. Vida e caffee, a chain of high-end espresso and coffee franchises, has partnered with Atlantis; the app's name is "Discover Atlantis". With this application The Palm in Dubai and Dubai Tourism aimed to lure customers from their customers and form mutually beneficially partnerships. By using an interactive coffee cup sleeve augmented by Digital Narrative, a Layar Certified Partner, they provide customers a chance to win an all-expense-paid trip to Dubai. Customers buying a cup of coffee with the sleeve can scan it after downloading the free AR application. After scanning, they are exposed to a video about Atlantis and Dubai and given a chance to share the promotion on their social media profiles (www.credencys.com. 2014).

Transportation Sector

Transportation is one area wherever the utilization of AR has been seen to be over in hotels or restaurants. With AR, tourists will get the lot of required help after they are travel across a new country. With augmented displays, the navigation is often easier for the pedestrians furthermore as for those that are travel. Directional arrows and virtual ways will facilitate users to search out the correct direction to their desired destination through proper AR applications. In several places, buses have digital displays connected to the rear of the seats, which may be scanned exploitation an AR application and supply the travelers with interactive content (Wilson, 2014b).

The First Scotland AR application makes bus rides fascinating for the commuters in Aberdeen. With this application, users will see interactive videos from the digital displays that are connected to the rear of the seats. Users able to see info regarding the bus services; they will see theatre trailers and even purchase tickets by the application. *Departures Switzerland:* This is an AR application for transport in Switzerland. With the assistance of an AR browser, users are going to be able to get info regarding all the offered public transports within the area. Even time period info also will be provided to the users. *Tunnel Vision:* This application makes riding through the subway of New York town better. The subway map is employed by the app to point out fascinating information. Ranging from time period positions of trains to intriguing facts regarding the town, the AR application will offer different kinds of data to the users (Wilson, 2014b).

Music in the Sky: Air France 'Music in the Sky' is an application for iPhone and iPad that enables users to 'capture' new tracks by inform their devices upwards to the sky. The application uses an AR component in order that songs show up on the screen as very little dots with music notes within them. Users will then capture a song and add it to their play list. 'Music in the Sky' additionally options completely different tracks in every country; therefore frequent travelers will

discover additional music through the Air France Music mobile platform. In addition, users will take a look at their music data on the app to win "other suppressed tracks, concert tickets or maybe air tickets" by finding hidden games within the sky throughout bound times of the year (Mayasandra, 2012).

Lufthansa can create air travel even additional exciting than before with its AR application. Prospective travelers who have an interest to require a Lufthansa flight are ready to determine Premium Economy seats with this AR application. As claimed by the airline, this is a world's first because it doesn't need any brand marker to activate the augmented content. No image or brand logo has to be scanned for activating the application. The app provides the purchasers with a full new approach of checking out the top quality of the business class service of this airline. Users have to be compelled to transfer the app in their mobile devices. Once that's done, they're prompted to urge a paper and pen and to "draw one thing that flies". Even any doodle that has respectable distinction also will work. The users will then use the Lufthansa AR app in their phone and scan their drawing. They're going to be ready to see an augmented reality Premium Economy come back to life on their screens. The app has been developed by the digital agency Space. The concept behind the creation of this app is to market the fifty percent further legroom that the travelers of Premium Economy seats can get. This AR app can permit the users to rotate the chair to look at the varied options and additional area is even stuffed up with virtual reality objects like cricket balls. (Wilson, 2014a)

Airline smartphone applications are starting to branch into new areas, with Qantas the most recent to do with devoted product for its frequent fliers. The Australian carrier launched the Frequent Flyer iPhone application as an on-the-road account management system for loyal customers, permitting them to hold out a string of tasks far from the standard search and booking of flights. Maybe the foremost the numerous (and playful) part of the app is that the use of an augmented reality system to spot local shops wherever users will redeem loyalty points. The system additionally includes a product guide, illustrating and description differing kinds of commodity out there to passengers, also as varied tools to manage points and private profile. A flight search system is additionally contained inside the application, though booking should occur on the present Qantas mobile web site. Different partners enclosed within the system cover accommodation, restaurants, car rent, shopping facilities (May, 2010).

GVK Chhatrapati Shivaji International airport (CSIA) treated with the varied services aided by the AR technology. So as to up the ante of passenger experience, the airport has recently launched a new smartphone application that includes variety of advanced features. With uses of AR technology, that provides passengers with info on near facilities as they walk through the terminal, is that the one that stands out this airport from the other airports in India (Harshad, 2015). With use of this application, passengers will choose their flight on the app and prefer to receive push notifications regarding their specific flight. A

combination of Indoor Atlas and iBeacon technologies provides the platform for the magnetically modeled indoor maps. Interestingly, this is the very first time that iBeacons are installed in an Indian airport (Sharma, 2015). With this technology, airlines will simply provide passengers, indoor directions, walk times to gates, lounge access, alerts about boarding. This technology are going to be enabling more effective communication for the airport – Passengers as airport currently is aware of wherever a traveler is before sending info (Patankar, 2015).

Called Mumbai T2, the application is India's first-ever indoor navigation application with AR feature to guide a traveler through the terminal building. Once the flight number is keyed in, the application can offer constant info on the relevant flight, together with details like delays, change in boarding gates and boarding time. The application uses technology that makes magnetically modelled maps and provides location-based info to the traveler exploitation their 3G connections or free Wi-Fi services obtainable at the airport. With the Mumbai T2 app, travelers will design their own customized experiential tour with one click (Sharma, 2015).

AR browser is an incredible 3D navigator to assist to achieve the placement simply. Hold the smartphone upright and look around with the camera to look at restaurants, hotels, landmarks, cinemas and different geotagged entries. Floating image balloons on screen show info of the chosen image. Hold it horizontally to modify to Google Maps to point out the position and pin it to look at it later or notice the parked vehicle. Integrated Facebook, Twitter and Flickr let share and store location photos.

Conclusions and Suggestions

A number of applications are developed based on the augmented reality. Today, several augmented reality applications are discharged as pilot applications or research projects and a few of them are commercially utilized in tourism business. The aim of this study was to explore the promoting advantages of current business AR applications in tourism business. The results of the study discovered that current AR applications: 1) offer access to location-based info that's relevant to the close to surroundings of tourists, 2) create it potential to access the varied contents, that are well-timed and updated, (3) have flexibility in delivering texts, videos, or pictures and 4) give interactive further explanations that are integrated with map-based services and extra info, 5) enable advertising and promoting tourism businesses.

The users' travel experience may be improved via augmented reality applications because they can reach any real time information about a location, what that location offers and what commentary other visitors have made about it. Moreover, the users may view the simulations of events, places and objects in history by delivering them into the scene they are viewing. Not only visual but

also audio information may be gained via augmented applications, which announce the features of a site of their interest as they become visible to the users.

Markerless AR technology offers an alternate to printed tourism guides, identifying points of interest, attractions, places to eat, transport links, directions etc. This info will be perpetually updated and superimposed with further pictures, ratings and reviews. This enables guests to create up to date informed choices on accommodation, eating, points of interest etc. then upload their own updates and experiences also for the advantages of different guests. Markerless AR has additionally been accustomed recreate historic events, architecture, characters and landscapes, augmenting a visitors real world view with overlaid 2D or 3D pictures, sound, simulations or video content in fact all this may greatly enhance your visitors' experience (DTBF, 2013).

Augmented reality delivers tourist info in several languages relating to accommodation, dining, the city's nightlife and sightseeing. Moreover, augmented reality provides tourists with customized content and services that they're fascinated by. With the assistance of AR, tourists produce their favorite lists and will use these lists later. AR applications enable tourists to explore the destinations, cities, museums, and historical places by adding new layers to their reality, so leading to a new interactive and extremely dynamic experience. AR permits tourists to share their experiences on social networks. As a result, a tourism business, destination, town or museum might be marketed on social networks via the items tourists share there.

AR is particularly beneficial for museums, heritage sites, cities and tourist professionals because it is possible to organize and transmit information in layers. The information can also be organized according to the users' requests, which suggests that the users' background; interest, age, occupation and other characteristics may be used to organize the information. Thus, tourists can get customized services according to their preferences and expectations, which maximize satisfaction they get from their visit (Kounavis et al, 2012).

There are some obstacles of this technology that is stopping its probable mass adoption within the tourism business. The shortage of information and development may be a significant disadvantage. AR remains considered to be in its experimental stage. Roaming charges that the users of the application need to bear whereas accessing the knowledge may also could be a downside. There's additionally a problem for travelers to run out of their battery. This makes them rely on paper-based systems to understand about transit locations, timings, and more. The matter lies between price and power. Even if AR is obtainable in mobile devices, still to comprehend the particular potential of this technology, power is needed and to get that power, high price is to be borne (Wilson, 2014b).

What is sure is that the smartphone population is rising, and with this, the amount of process power is just too. Additional a lot of consumers are carrying phones capable of displaying AR, and once an application is downloaded and that they have scanned their initial code, they're much more receptive to future appearances of a code - driven by curiosity. As long because the resulting augmented content remains participating and innovative, customers will definitely adopt AR as a new and fun twist to conventional promoting and services (Azuma et al. 2001).

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[1] QR code (abbreviated from Quick Response Code) is the trademark for a type of matrix barcode (or two-dimensional barcode) which is an optically machine-readable label that is attached to an item and records information related to that item. The information encoded by a QR code may be made up of four standardized types ("modes") of data (numeric, alphanumeric, byte / binary, Kanji) or, through supported extensions, virtually any type of data. As a result, the QR code has become a focus of advertising strategy, since it provides quick and effortless access to the brand's website. QR codes are now (as of 2012) used over a much wider range of applications, including commercial tracking, entertainment and transport ticketing, product/loyalty marketing. For example, restaurant couponing where a company's discounted and percent discount can be captured using a QR code decoder which is a mobile app, or hotel's information such as address and related information alongside its alpha-numeric text data as can be seen in Yellow Pages directory (http://en.wikipedia.org, 2014). Augmented Reality (AR) is the concept of superimposing digital content (such as online information and graphics) on top of a view of the real world, as seen through a camera. Consumers simply use their

smartphone or tablet's camera and a mobile app to scan a brand's augmented reality image whether it's a magazine's cover/page, a bus stop billboard, a newspaper, or any other point of entry to gain access to interactive 2D or 3D visual overlays and even video demos of new products (http://en.wikipedia.org., 2014).