



# Mobile Augmented Reality Marketing a Novel Perspective

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**Abstract:** The aim of the project is to introduce customers to various amenities and attractions in the hospitality and tourism industry, enticing them to stay at certain hotels or visit specific locations. In order, for any business to succeed, marketing is essential. Hotels and other related businesses have become increasingly interested in augmented reality in recent years, because it allows them to improve the physical environment that they are selling (such as their hotel and rooms), or to improve the experience of exploring the surrounding area. In addition to the fact that guests tend to ask for a lot of information, both when they arrive and when they leave, AR is a key reason for its flourishing in the hotel industry. Through augmented reality, Customers can have access to a lot of this information anytime and anywhere, improving their experience. Innovation in augmented reality additionally impacts the way people discover and engage with nearby attractions, cultures, and adventures.

**Keywords:** Augmented Reality, E-marketing, Virtual Environment, A 3D view, Mobile Technology, Customer.

## I. INTRODUCTION

The concept of augmented reality is the use of computer-generated images to augment the experience of a real-world environment. With digital overlays on tablets, mobile phones, and computers, Augmented Reality creates a live, 3D visual representation of a real-world environment with some elements augmented by computer-generated visual information. In terms of teaching and Education, through AR any information or data can be made available to a learner in real-time. so this is the tool that has become an integral part of the education process. The concept of augmented reality emerged as a new field of virtual reality and computer technology towards the end of the 90s and has spread to a wider area [1]. The term Augmented Reality (AR) is used to describe a combination of technologies that enable real-time mixing of computer-generated content with live video display[3].The tourism industry has developed throughout the history, mostly with technology, and has built activities to attract the tourist. The excitement of experiencing and living one a new environment are some of the greatest joys in life. As a result of this instinct and appeal towards exploration, it is no surprise that the tourism- and travel industries are some of the largest industries in the world. Augmented Reality (AR) is a kind of Virtual Reality that replaces the real world with a virtual environment, however, it takes certain sensory elements of the real world and transforms them into virtual sensory elements. There have been numerous implementations of Augmented Reality. For instance, it's been used in both conflict zones and training simulation programs for the military. Nowadays, Augmented Reality technology is one of the newer forms of strategies used by companies[2]. The basic idea is to take the picture of the real world, process it, process data, create data and merge it and combine it with the image and show it to the user. one of the most important AR applications advantages is that it gives a client extra data on the item additionally buyer can retrieve important data about the item characteristics, its uses, and availability, and some more. In the automobile sector, AR and AI are overtaking the presence of the industry. Several automobile manufacturers use these technologies to mark their presence in the market.

## II. LITERATURE REVIEW

### A marketing approach based on augmented reality

Augmented reality (AR) has been used as a tool to boost e-marketing in many ways due to its unique features and capabilities. AR enables greater involvement of both marketers and consumers with brands by increasing their ability to make positive sales and purchase decisions, respectively. AR provides memorable interactive consumption experiences in the before, during-, and after-purchase stages. AR as a computer-based technology is less expensive because it can be used in digital platforms or online[4]. Although the development cost to set up AR-based marketing campaigns might be higher, the lifetime operating cost mostly remains stationary. By adopting e-marketing, businesses can ensure efficiency, better return on investment, and enhanced profitability that leads to increased cost-effectiveness. Tourism destination marketing or advertising based on AR applications can grab the attention of particular customers. The growth of social media connects consumers (including millennials) by creating a network of like-minded people that allows further



capitalization of such innovative technologies like AR. AR's ability to offer personal and customized feelings to the target consumers plays a central role in the success of AR in the hospitality and tourism industry. 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 [7]. AR can be defined as a system that fulfills three basic features: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects. AR technology is a real simulation by computer-generated visuals where a user can experience reality in a virtually created environment[5]. Augmented reality, it is running in real-time, not pre-recorded. Smartphones 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. In the digital age, augmented reality apps have emerged as a new way to reach a wider audience, to differentiate a business from the competition, and above all to introduce and communicate new services. AR can be characterized as a framework that satisfies three fundamental highlights: a mix of genuine and virtual universes, constant collaboration, and exact 3D enlistment of virtual and genuine articles. Computer programs are developed in special 3D programs by the developer using digital information in the form of animations or digital information to create AR apps. When a computer's AR app receives the digital information from a known marker, it executes the code from the marker and layers the correct images. AR innovation is a genuine recreation by PC-produced visuals where a client can encounter reality in a practically established climate.

### Augmented Reality: Popular Applications

**Travel:** From hotel room booking to transportation, planning events and outings, and booking a table at a restaurant, augmented reality is helping in everything to make your traveling hassle-free and memorable. The technology is helping the travelers access the information written in pamphlets and other sources easily by converting it into useful, spoken conversation. It is offering 360-degree tours to the guest rooms, restaurants, meeting facilities, and other places to the customers. Besides, the technology is empowering the travelers to visit the nearby events and outing places even without[6].

**Museum:** Museums are great places where visitors can see, hear, touch, feel and experience interesting things. The visit is even better when visitors can select what they want to see and have ways to enhance their experience. Many museums have a huge amount of collections and objects, selecting which ones to see is sometimes difficult. A system that adapts on the fly to the user's preferences, suggesting objects that he might want to see, paths he would like to follow in their visit, as well as the complementary information he needs about each object, will be of fundamental importance. Smartphones, with their Apps are the best solution to help enhance the museum experience.

**Medical:** Medical augmented reality takes its main motivation from the need of visualizing medical data and the patient within the same physical space. This would require real-time in visualization of co-registered heterogeneous data, and was probably the goal of many medical augmented reality solutions proposed in literature.

**Military:** AR can be used to display the real battlefield scene and augment it with annotation information. Some HMD's were researched and built by company Liteye for military usage. In hybrid optical and inertial tracker that used miniature MEMS (micro electro-mechanical systems) sensors was developed for cockpit helmet tracking. In it was described how to use AR technique for planning of military training in urban terrain, which could be used for military intervention planning, was developed by company Arcane.

**Education:** New possibilities for teaching and learning provided by AR have been increasingly recognized by educational researchers. The coexistence of virtual objects and real environments allows learners to visualize complex spatial relationships and abstract concepts, experience phenomena that is not possible in the real world, interact with two and three dimensional synthetic objects in the mixed reality, and develop important practices that can not be developed and enacted in other technology-enhanced learning environments.

### III. METHODOLOGY

In this section, we illustrate our model in detail. Then we explain flowchart of our application in detail. Basically this is a flowchart of our application, whereby clicking on the start button allows us to start it. This will make your device screen a virtual window into the visible universe by enabling AR (Augmented Reality) camera views. Afterward, the plane will be detected and the spawn button will be enabled. If the plane cannot be detected, the camera will switch back to the AR view and try again. After successfully detecting the plane, we will click the Spawn button and the rendered objects will appear. We will then be plunged into a virtual reality through which we can even go to the places that we are unable to reach during this pandemic. The application enables us to enjoy the view from the comfort of our room, just by sitting on our couch.

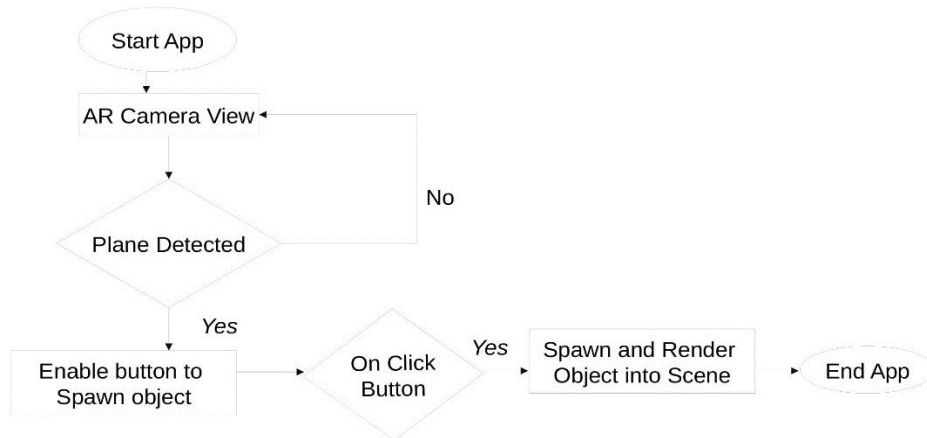


Fig. 1 DATA FLOW DIAGRAM

IV. RESULT AND DISCUSSION

This images is being done in a hotel industry, where the user, who wants to stay at the hotel, wants to have more knowledge of the services that are being offered. And this information given by the app using the digital contains. The application needs to detect a flat or hotel rooms and horizontal surface with the surface works based on well-lit, textured surfaces like food, concrete, tiles and carpets. This aim down at the floor or table-top, bed and move your phone slowly in a circle. Makes your the brightness is not too dark or to bright.



Figure 2: Plane Detection Through Application



Figure 3: Object Spawn

figure 2. shows how tiles can be detected by an application based on their planes. Once you've done that, slowly move your mobile and you should see the object spawning as shown in figure 3.



Figure 4: Interior view of hotel room



Figure 5: Inside out view



As you can see in figure 4, when you move your phone in circle, you are presented the interior view of your hotel room. From inside you can see the real-time view as you see in figure 5.

## V. CONCLUSION

This research paper covered a description of AR technology, an analysis of tourism marketing, and several areas in which AR is applied to tourism. The aim of the study was to explore the potential benefits of AR as a marketing strategy. Research results discovered that current AR applications have the potential to provide relevant data and information about their surroundings, as well as advertising and promoting tourism businesses. Several examples from the Use Cases demonstrate that a multitude of institutions is implementing AR apps as a way to support pre purchase decision-making. This indicates that these institutions view AR technology as particularly useful for supporting decisions about intangible products such as holidays and events. Tourism is facing certain obstacles to the adoption of this technology. Information and development are two major disadvantages. The field of AR remains in an experimental phase. It could also be a downside that users will be charged roaming charges when accessing the application. Additionally, travelers can run out of battery power. As a result, they rely on paper-based systems to understand transit locations, timings, and so on. There is a conflict between price and power. While it's true that AR is now available on mobile devices, true appreciation of its potential will require power. To get that power, we will have to pay a high price.

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