

E-Commerce Application using Augmented Reality based on Cloud Computing

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I. Abstract- New shopping methods with various attributes compared with traditional internet shopping can improve the administrations of business websites or E-commerce system. This is an abstract of the broadest parts of elective innovation dependent on AR collaborations that avoids the utilization of physical interaction with the product. The utilization of internet shopping has been developing significantly over some time. Augmented reality (AR) may assume the most significant job in improving the method of Application based shopping. The advancement of new AR innovation can be made valuable if it can imitate the highlights that have made web-based shopping the most favorable shopping source in present times. The execution of AR shopping is changing internet business by helping the web retailers to decrease the developing expense of profits and furnishing their clients with all the more captivating and advantageous approach to shop through their gadgets.. By using AR E-commerce

website which is based on cloud services we can make work much easier and simpler. Cloud services provides The scalability of the cloud perfectly complements the needs of the retail sector. Provisioning more servers on your own or securing the funds to build a bigger IT infrastructure will slow down your growth. Cloud computing can promise you PCI-DSS certified hosting—more important than ever now that GDPR has arrived. Additionally, cloud technologies can promise superior security measures to protect you from DDoS attacks, which can cause customers to lose confidence in the reliability of your website.

Keywords: E-commerce Application, Augmented Reality, AR, E-commerce, Cloud Computing, Android Application, Security.

II. INTRODUCTION

Since the middle of 1990's web-based E-Commerce markets have grown quickly. However, Two-dimensional images and text in internet can not provide enough information of products to customers. The difference between the impressions on the images and the actual products is due to the fundamental discrepancy between the internet-based cyber world and the real environment. Augmented Reality is an advanced technology for enhancing or augmenting a person's view of the real world with computer generated "Virtual" objects. AR systems overlay these "Virtual" objects onto the real world to increase users' visual experience, expand their visual system, and help them achieve their tasks by a more natural way. So it has a wide range of applications in human-computer interaction, industry maintenance, multimedia computing, medical and military training. AR is a helpful perception strategy to overlay computer graphic illustrations in the real world. AR can consolidate the representation strategy to apply to numerous applications. A vision-based AR framework was introduced for representation connection in a device; AR additionally empowers perception of imperceptible ideas or occasions by superimposing virtual items or data onto physical articles or situations. Despite the positive attitude for Augmented Reality technology and the abundant shopper experimentation that the innovation offers, augmented reality techniques selection and

utilization the client involvement with E-commerce is somewhat restricted.

III. Literature Review

The term Augmented reality was first used for advertising in the automotive industry. A major evolution possible within E-commerce by using the application of augmented reality with it. 77% of customers prefer to use AR capability to the pre-view product, variation such as color, size, style, and difference. AR marketing & advertising is a significant idea that incorporates computerized (digital) data or items into the subject's view of the real world, regularly in union with other media, to uncover, articulate, or show shopper advantages to accomplish hierarchical objectives. [13] The market value for Augmented Reality was 640.4 Million out of 2015 and is required to create \$120 Billion in income by 2020. In that capacity, AR is encountering a tremendous prevalence among **organizations and customers.** [14]

The uses of AR are broad across businesses, for example, producing, correspondence, wellbeing, retail, route, military, instruction, gaming, and internet business. This assessment bases on the utilization of AR in web business considering the tremendous ability of this striking development in providing an in-store shopping experience. The device is able to modulate 3D objects in different

spaces, permitting users to collaborate with advanced delivery to their own place with consolation.

Organizations like IKEA and converse are utilizing augmented reality to assist clients with imagining household items in their homes progressively utilizing cell phone applications. This expansion in the development of AR applications can be ascribed to the buyer's apparent advantage and positive experience. E-commerce is developing at a fast movement, which is apparent in the measurements expressing that over a billion Web clients bought products through internet business sites in 2013. Truth be told, retail online business deals added up to \$1.85 trillion every 2016, and etail

incomes are extended to develop to \$4.50 trillion out of 2021. This emotional change in the

advanced retail scene with a quickly developing client base has evoked a solid impulse in online business companies to separate themselves among their rivals and receive inventive strategies to take into account their buyers. With regards to AR innovation in web-based business firms, if the Ecommerce

firms wish to incorporate AR into their internet business portable application, they have to upgrade their mechanical competency by creating 3D item models utilizing 3D modeling softwareand

programming tool and have a solid innovative team.

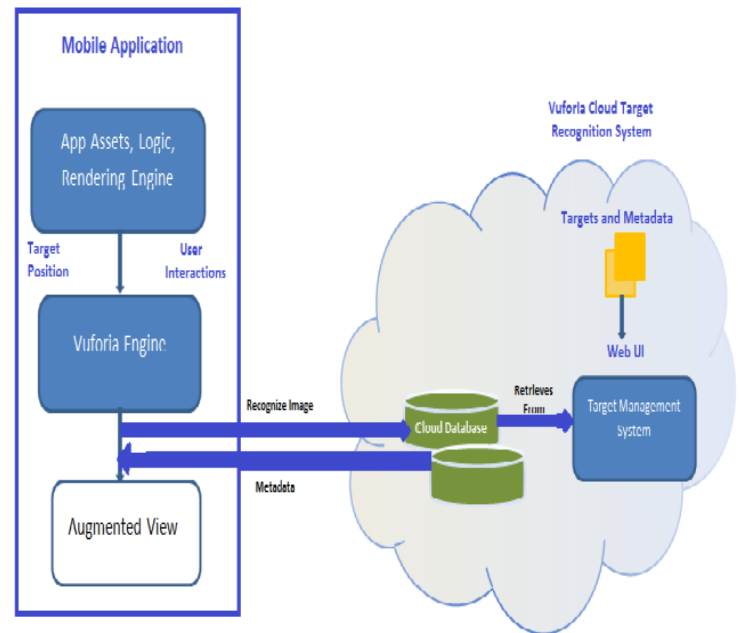


FIG.1 System Architecture

Advantages

- Customers can “Try” before they “Buy”
- Make Online products “Tangible”
- To provide real life E-commerce experience from the comfort of your Home
- To make E-commerce more entertaining than just scrolling through a list of products
- To provide trending technology such as Augmented Reality experience to Users

IV. System Requirements

1. CPU - Intel core i3
2. RAM - 2GB
3. Hard disk - 40 GB
4. Android Studio
5. Cloud Vendor

V. Objectives

The list of objectives to be completed for this project are as follows:

- Connection with the product
- Immersive Experience
- Novelty
- Pre-Buying Visualization of the Product Experience
- Utmost Personalization
- Store-Like Experience:

1) Connection with the Product:

When users interact with the digital information superimposed on a physical object that they are comfortable with, a sense of ease and connection gets naturally developed for the AR-projected product. Note that this is the first psychological sign of conversion.

2) Immersive Experience:

The strength of AR is its immersiveness, where every customer feels that he is actively involved in the story of the ad or brand. This is unlike any other traditional form of marketing engagement, as the impact on the user is massive.

3) Novelty:

Humans are wired to get thrilled by new and never-seen-kind-of-experiences. With the unique fusion of the “real” and “virtual”, AR offers the same thrill which can become a massive engagement puller.

Pre-Buying Visualization of the Product Experience:

By helping consumers visualize the product in the context of the physical space they'll occupy, AR apps eliminate the detrimental ambiguity from e-commerce purchases. Home furnishings giant IKEA's IKEA Place AR app is a case in point here. The app helps shoppers visualize how the furniture and other decorative pieces will look inside their living rooms. Shoppers can then easily change products, alter product attributes such as size and color, and see how different furniture items and the room decor will complement each other

Utmost Personalization:

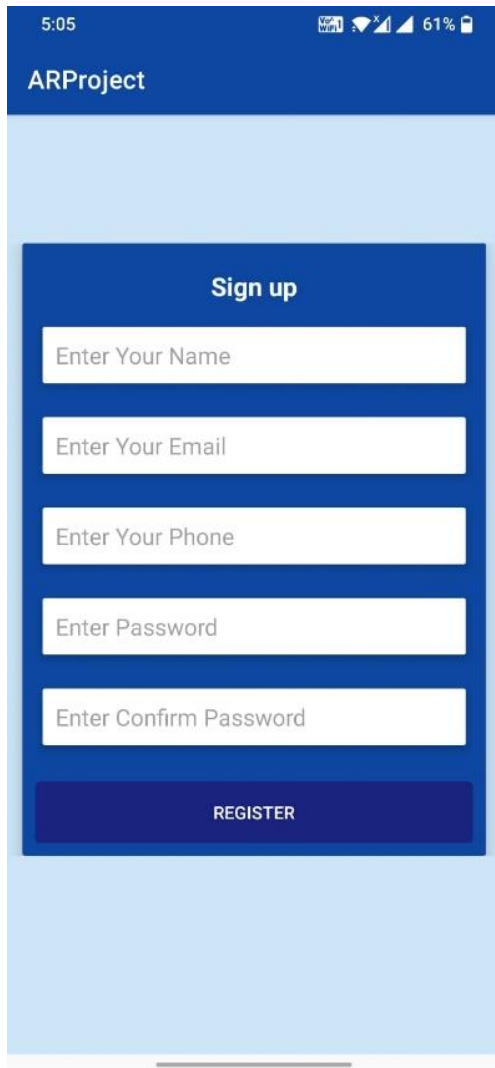
In an era which is marred by all-too-similar-products, differentiating the business solely on products is almost impossible. Customer experience, thus, is going to emerge as the biggest battleground for acquiring and retaining the customers. AR based ecommerce can give a long rope to the struggling online retailers by making the whole buying experience ultra-personal.

Store-Like Experience:

One of the biggest motivations for shoppers to shop at a retail store is the availability of products on

neatly organized shelves and aisles. AR based ecommerce can replicate this “retail aisle” experience on digital avenues.

VI. IMPLEMENTATION



5:05 61%

ARProject

Sign up

Enter Your Name

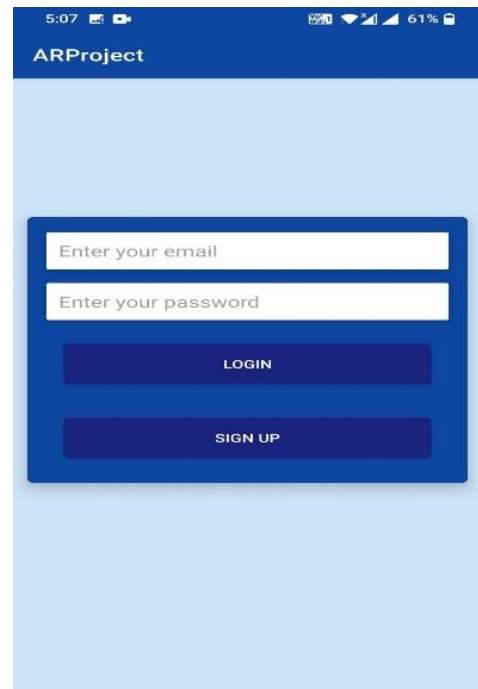
Enter Your Email

Enter Your Phone

Enter Password

Enter Confirm Password

REGISTER



5:07 61%

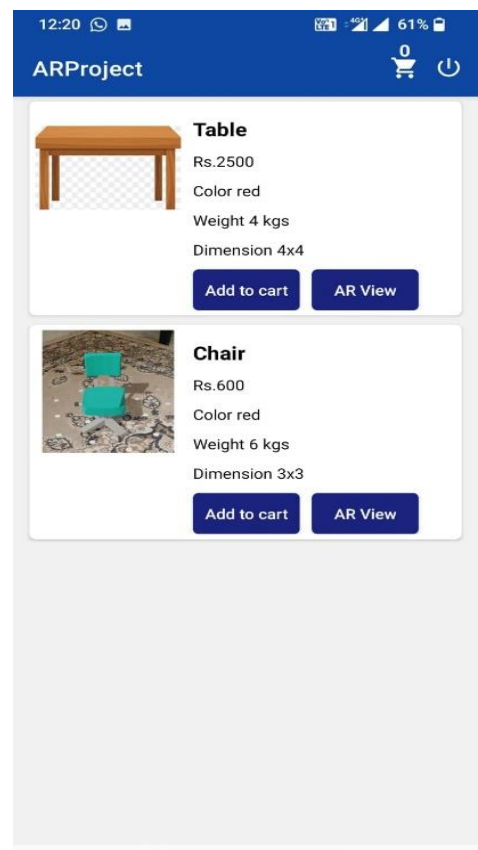
ARProject

Enter your email

Enter your password

LOGIN

SIGN UP



12:20 61%

ARProject

Table

Rs.2500

Color red

Weight 4 kgs

Dimension 4x4

Add to cart **AR View**

Chair

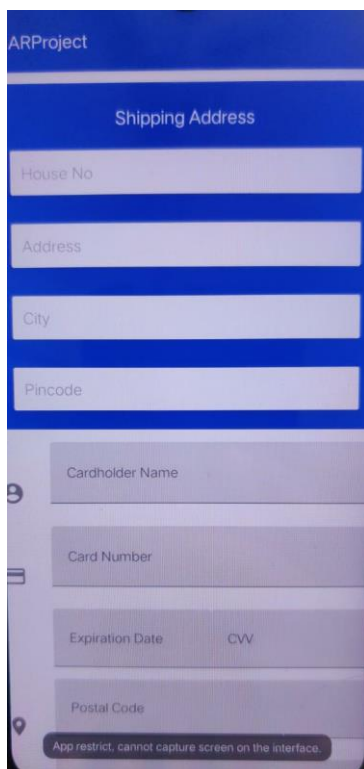
Rs.600

Color red

Weight 6 kgs

Dimension 3x3

Add to cart **AR View**



ARProject

Shipping Address

House No

Address

City

Pincode

Cardholder Name

Card Number

Expiration Date CVV

Postal Code

App restrict, cannot capture screen on the interface.

VII. Methodology

This study aims to implement AR in e-commerce applications. The e-commerce application here is a application that is segmental into the online shopping site with expected features to give the appearance of a new product, unique and exciting in online shopping activity. With the existence of augmented reality, it will make it easier to use web-based applications so that it helps customers find the desired product AR-led experiences can become the pathway for higher customer satisfaction as retail customers look for more engaging, fun, and unique experiences. An Android Application will be created for this project using front end tools like Android Studio , Firebase , Cloud Vendor , Java etc Firstly, a welcome screen will appear from where they can register giving simple details like Name, Mobile, Email, Password, etc. Later they can login using the same credentials. After the login is successful, they'll be redirected to their account page from where a number of options will be available. For a new customer, the customer using this application scan any product the system display the product details.

VIII. Conclusion

Having witnessed the influence of the internet on shopping, it will be a grave mistake to ignore the benefits that augmented reality bring to the industry of online shopping. As online retail seeks to improve its conversion rates and bolster more revenue, the benefits of augmented reality cannot be overstated. Augmented reality offers various businesses the chance to create a more interactive shopping experience with their customers as it offers the opportunity to

virtually try the product they want to purchase

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