

Virtual Commerce: The Future

Archa Khandewal¹, Abhinav Shah², Arasil Vahora³, Gopi Bhatt⁴

Computer Department, A.D. Patel Institute Of Technology
P.O.Box No.52, Vitthal Udyog Nagar, New Vallabh Vidyanagar-388121

Abstract- Man has always fantasied travelling in different world. Today, the blooming virtual reality section can make his this desire real soon. With smart-phones becoming an extension to every human, head mounted device too have a great potential. E-commerce has also opened its wing and is flying high.

This paper talks about how virtual reality can change the face of electronic commerce. We will discuss the already available support to create a virtual reality environment and our attempt to make a head mounted device and supporting software.

Keywords- VR, HMD, Virtual Reality, commerce

I. INTRODUCTION

In 1964, a cartoon series 'Jonny Quest'^[1] showed the protagonist travelling in a different world using a head mounted device. Soon in 1968, an well-known graphics expert, Ivan Sutherland, presented an head mounted eyepiece at the Harvard University^[2] and made a dream come close to reality. While Virtual Reality (VR) and Head mounted device has existence since 1960s, it has not received attention in terms of investment and interest of the masses till recent times. There are a lot of technical challenges to create a perfect head mounted device. No one has completely solved the problem and the Masses have only looked up for perfection^[3]. With companies like Samsung, Microsoft, Google, Facebook, Sony and many others investing and developing products and solutions for VR. VR is said to be the next big thing. VR can be applied and used in various places like gaming, construction, medical etc.

E-commerce has bloomed since the 2000's^[4]. Today there are number of online sellers addressing to millions of customers. Mobile technology has also played a very important role. There will be 200 million smartphones users in India by the end of 2016^[5]. Today big companies like Myntra and Flipkart have completely close down their websites and only sells their products through mobile apps^[6]. While customers have now become comfortable buying products online, they still complain about missing the shopping as an experience^[8].

Combing the best of both worlds, Virtual Reality and E-commerce can create an entirely new sector of entertainment and commerce. More than a third of consumers say they would shop for more products online if they were able to try them virtually using headsets, and 63 percent say they expect virtual reality to impact their shopping experiences in the future, says the Reinventing Retail 2015 Report^[9].

II. DEFINING VIRTUAL COMMERECE

Virtual commerce can be defined as an application, service, or product feature that uses a head mounted device and 3D picture rendering to display and sell products using a smartphone application.

It can be abbreviated to V-Commerce or V-Com.

III. PRESENT AVAILABLE SUPPPORT

A. Microsoft Visual Studio

Microsoft Visual Studio has been a very popular integrated development environment, known for its support for various languages. It's 2015 edition has a new component, support for 3D development. Very simple and easy to use. It uses the same pick and drop and click and code theme.

B. Unity and Mono

Unity is known mostly for its support for gaming software. It has also emerged as an excellent support for rendering 3D environment. It has a simple environment. There is also a Unity plugin available for Microsoft Visual Studio 2015 to get the best of both worlds.

Mono on other hand works along with Unity. It let us manipulate and regenerate 3D objects with simple codes.

C. Modelling tools.

There are many 3D modeling tools available like Blender, Maya, Sketchup etc.

Blender and Maya are excellent written software for supporting the virtual reality programs. The only difference is that Blender is open source and Maya is proprietary. Sketchup is lets you make 3D models easily. It is also an drag and drop kind of software. These 3D model than can be exported to other software

D. Head mounted device

Since the 1960s, there have been several head mounted devices which have been developed and created to support virtual reality. But the most successful of them are:

I. Octulus Rift

The most commercially accepted, popular and attention seeker head mounted device has been the Octulus Rift. It is the most affordable VR device available in the market today. Octulus is now part of the Facebook's acquisition^[10]. Programs for Octulus can be easily written in Unity using Octulus dedicated plugins.

II. Google cardboard

Google cardboard is not the most powerful VR device but it has lot of takers as it is very cheaper than other VR device. It is simple design made with cardboard and two biconvex lens.

Google cardboard does not have a long life. As it is made out of cardboard it can get torn and wore out in some time. It has many variations available. Lot of developers have incorporated their little idea and have made changes to make it better.

Cardboard SDK is available for Unity. This SDK allows you to use Unity to create virtual reality experiences for Android and iOS apps running in Google Cardboard. Using this SDK we can easily implement user's head tracking and side by side stereo rendering.

IV. ENHANCING PRESENT APPLICATION

E-commerce applications are smart responsive web pages. Consumers are already comfortable with the available payment system. We can give them the option to choose between the normal app or let them walk through the 3D virtual environment. Also if the head mounted device is not available, the user should be given the option to opt of stereo effect and walk through the store in normal environment.

V. ADVANTAGES

- Virtual reality will be the next IT thing in the communication industry.
- It's not confusing like the website. It is simple to understand.
- User will not need to be at all be technologically sound to use it.
- User will be able to enjoy m-commerce more. This may change the dynamics of e-commerce entirely
- Any one of any age can use this application

VI. DISADVANTAGES

- You will need a head mounted device to experience this application.
- You will also need a smartphone.

VII. FUTURE:

E-commerce is slowly becoming an essential part of our lives^[4]. With everything just an click away, one can buy anything anytime from anywhere. On April 25, 2016, US President tried Virtual Reality using an cardboard based head mounted device^[7]. He called it a “Brave new world”. With so much support from all the big names, VR has a great future. Imagine in your own cozy home, sitting on your sofa, you can walk into any mall, shop anything you like, just like a real store. This is the future.

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