Virtual Shopping Application By Using Virtual Reality Technology

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Abstract : The development of information technology and internet has led to rapid progress in online shopping due to the convenience that they provide to the consumers. Online shopping is still not able to fully replace offline shopping as the re al visualization and product reliability can't be seen online.

Hence, we are designing an application that deals with virtualization of the mall and shops inside it by using virtual realit y technology. Virtual reality (VR) is a computer-generated scenario that simulates a realistic e xperience. The immersive environment can be similar to the real world. Here we are designing a shopping mall, where the person can go, search shop and purchase the product in real t ime. User can also gather the product information and access the shop details easily.

IndexTerms **- Virtual Reality, Online shopping, 3D environment, VR Application,VR Headset, Unity3D**.

I. INTRODUCTION

Virtual Reality refers to a high-end user interface that involves real-time simulation and interactions through multiple sensorial channels. VR is able to immerse you in a computer-generated world of your own making for e xa mple a room, a city, the interior of human body etc. With VR, you can exp lore any uncharted territory of the human imagination

In our project the virtual mall is a platform which brings together the various retail outlets and there public to single point for facilitating trade which makes it easier for the customer to buy the product of their own choices at a single place[9].This application provides a new way of online shopping by surfing in a virtual mall. The application provides the feel of actual 3 D mall so that user can view the mall from any degree and angle. This application is useful for the customer as it can find out which product people needed. User can select the product and visualize it in 360°. User can get information about the product. In t his way, with the boost of virtual technology development, consumer's shopping experience would be enriched[8]. Virtual Reality(VR) is going to change the way we e xpress ourselves, communicate with each other and e xperience the world by creating an environment to be explo red. With highly advanced devices which offers us more immersive virtual e xperiences than anything we've ever seen.

II. VIRTUAL REALITY: PAS T, PRES ENT, AND FUTURE

This report provides a short survey of the field of virtual reality, highlighting application domains, technological requirem ents, and currently available solutions[5]. Virtual reality (VR) is not a new concept. The origins of VR can be traced as far back at least as "The Ultimate Display", a seminal paper by Ivan Sutherland that introduced the key concepts of immersion in a simulated world, and of complete sensory input and output, which are the basis of current virtual reality research.

III. EXISTING SYSTEM

The e xisting system is based on the website which cannot give the actual 3D environment. User cannot see the product in 360 ° with its details. This existing system is too lengthy. It is litt le buggy and difficult to use. It does not provide experien ce of mall from the comfort of home.

I V. PROPOS ED S YSTEM

In our proposed system virtual mall provides a feel of walking through an actual mall-3D scenario. Items are primarily categorized by shops and not by type. User can get experience of a mall from home & compare prices from various competitive shops. User can see the objects in 3D environment with 360°.This application provides a new way of Online shopping by surfing in a virtual mall.By this application user can watch and buy the products in only one mall.User would be able to shop online with a new to uch experience.
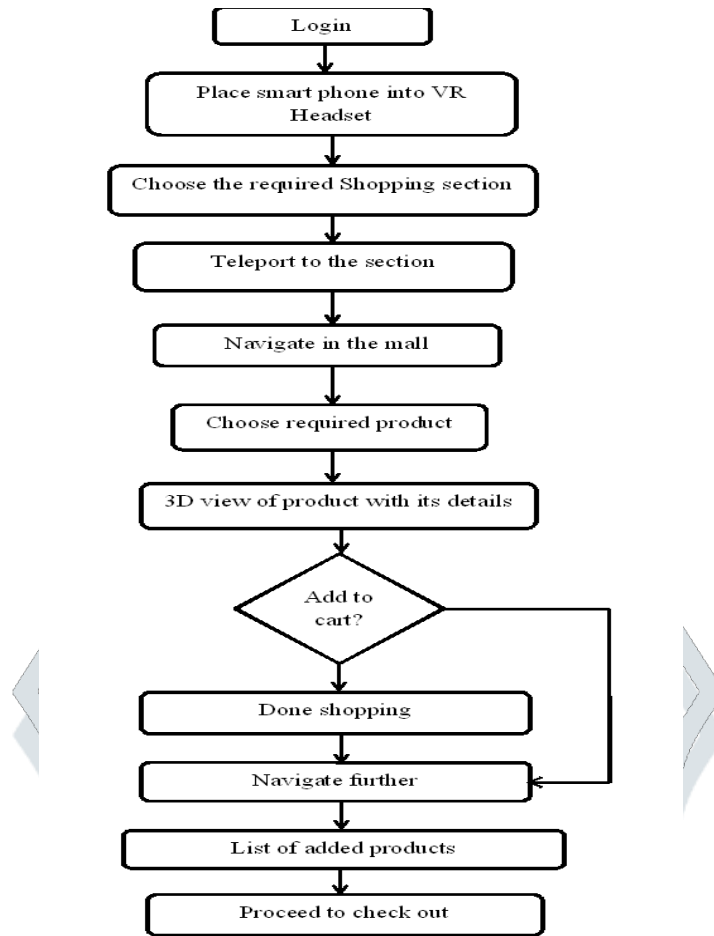
V. SYSTEM FLOW

Fig.1 System Flow diagram

The fig.1 shows the system flow. When user starts the application it will show Start button to enter into the VR environment. User need to plug in smartphone into VR headset to get the 3D Virtual Reality experience. Then user can select either he/she wants to navigate through touch or touchless control[2]. After selecting options he/she can navigate in virtual environment. If user wants to move around the virtual environment then has to select move or point cursor to bottom. Before start to shop user needs to select the shopping section of their choices. After selecting appropriate option he/she will get teleported to that section. Now, real shopping gets started in Virtual Shopping Mall. User need to navigate through the mall to select item of his/her choice. After selecting required item he/she can get the 3D view of item with its details. If user finds item of his/her choice then in UI it will show either add the item to cart or navigate further. If user chooses Buy option then it gets added in saved log. At the end of the shopping user will get the list of total items added to cart. Then user can select buy now and proceed for payment.
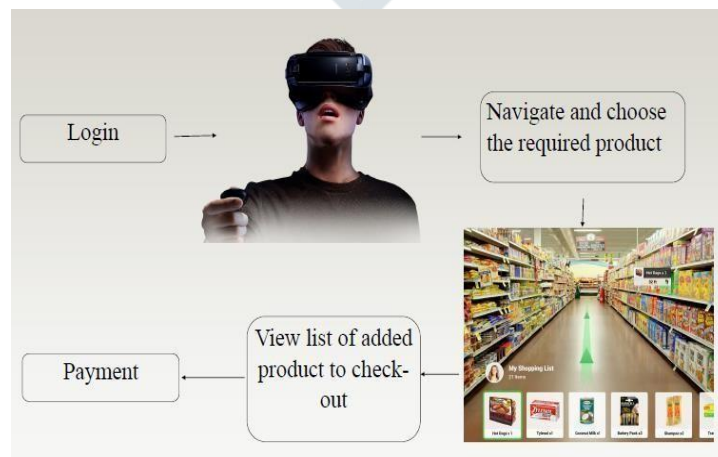
VI. . PRINCIPLE OF WORKING

Fig.2 Principle of working

The user needs to follow following steps.

- Login into VR Application.
- Place s martphone into VR Headset to enter VR mode
- Navigate inside the mall and view the mall from any degree and angle.
- Choose the required product to get its 3D view & details.
- Add the product to cart or navigate further.
- Check the list of added products & Proceed to make payment.

Fig.3 Inside view of Virtual shopping mall

Figure 3 shows the inside view of virtual shopping mall. By using this application customers can walk though virtual shops, examine virtual versions of real-life products and make purchases like they would in the real world. User can view the products of their own choices and can buy them by clicking on it. User can get a 360° view of product.

VII. . ADVANTAGES

- User can get the real-world experience.
- Without being there user can walk into a mall.
- The user can view the mall from any degree and angle.
- By this application user can watch and buy the products in only one mall.
- The cost of the project is very less as compared to others available in market.
- User can get experience of shopping in mall from the comforts of home.

VIII. . CONCLUS ION AND FUTUTRESCOPE

The proposed virtual shopping application provides new way of online shopping by surfing in a virtual world. Where user can visualize and buy the product in real time. This technology offers the ability to simulate in the real-world environments and gives the customer a flexibility to engage with the activities that are closer to e xperiencing the products and services.

Virtual reality doesn't completely replicate the in-person shopping experience, but it's getting there. It's also getting cheaper and more accessible. There are still things we need to see and touch that we have to go to the store for, like furniture. We will try to get close to what it's like being there, and all the little details on how you move, we will focus on that. In future, consumer can also use high-tech VR headsets like HTC Vive Pro, Lenovo Mirage Solo, Pimax 8K VR, Oculus Santa Cruz, etc. to get better e xperience of virtual world.

I X. ACKNOWLEDGMENT

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