3D VIRTUAL REALITY FOR SHOPPING MALL

Kashyapee B. Mokal[1], Alisha Patel [2], Mayank Rathi[3], Shubham Rashinkar[4], Dnyaneshwar Bavkar[5]

[1,2,3,4]B.E, Computer Engineering, Mumbai University, Terna Engineering College, Nerul, Navi Mumbai
[5]Professor, Computer Engineering, Mumbai University, Terna Engineering College, Nerul, Navi Mumbai

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Abstract - *From past few years there is lot of change done in online shopping. From few years online shopping has got more popular, but all of them have their own pros and cons, therefore this paper presents a new type of e-commerce system, this brings virtual environment with active 3D model that access products into real physical environment for user interaction. In real word we need to physically visit the mall and shop our requirements, but unlike the other shopping sites our project all about visiting the mall without having physically has to visit it. We get the experience of an actual shopping mall. We can shop with our own comfort and make the needed payments at our convenience. The virtual mall with an active 3D model is implemented by using 3D Language (VRML) and asp.net as the script language for shopping online pages.*

Key Words: **3D MODEL, ONLINE SHOPPING, VIRTUAL ENVIRONMENT, REAL ENVIRONMENT, CONVINENCE.**

1. INTRODUCTION

The wide-ranging applications of the Internet, computer graphics, man-machine interface and the expressiveness of multimedia offer more and more developing opportunities for electronic commerce (Ecommerce). At the same time, the development of Ecommerce promotes the popularity of shopping online. It has become reality to shop 24 hours a day by accessing a large quantity of information and the opportunity to partly experience the products on the line. However, by now the acceptance of such presentations is not very high. The existing Ecommerce systems provide customers relatively simple, browse-based interfaces, unsatisfied shopping experience to access the available products. Also, most of big shopping web sites couldn't take fully advantage of the rich web resources, offer customers congenial and personalized service and project their own marketing strategy based on analyzing all information and shopping behavior acquired from customers. Current 3D visualization systems are short of many features what an actual E-commerce platform should have although VR technology has been employed, such as giving better service to consumers intelligently and social interaction during products purchase. Little of them have been used in real applications. Therefore, becoming more near to real life is one of main objectives of online shopping mall .for attracting a broader active user base. According to the four factors influencing consuming behaviors of customer, buyer, product, seller and circumstances, we construct an intelligent virtual shopping mall for providing buyers a real-life shopping environment, interactive communication as well as satisfied guiding service. The core part is to generalize regularities existing in the real shopping process and can be applied to guiding consumers step by step to get their favorites or newest information. At the same time the browsing and searching process are presented by actions of the intelligent agent under Easy Mall.

1.1 Methodology

1 Our Easy Mall was built on several servers and applied to achieving the communication between customers and virtual environment through blaxxun. The whole system includes the web server for saving customer information, customizable avatars, and agent data sever. This system adopts C/S mode. The server is an application written entirely in Java, and the client is a Java applet which is embedded in an HTML page. The VRML viewer is a plug-in and part of the same HTML page as the applet. Applet and VRML viewer communicate via the External Authoring Interface (EAI). In addition, this system employed VNET+ (Vrml+Java) for ensuring the platform compatibility. Applet controlled customers' login and avatar's selection and communication between avatars which delegate different customers.
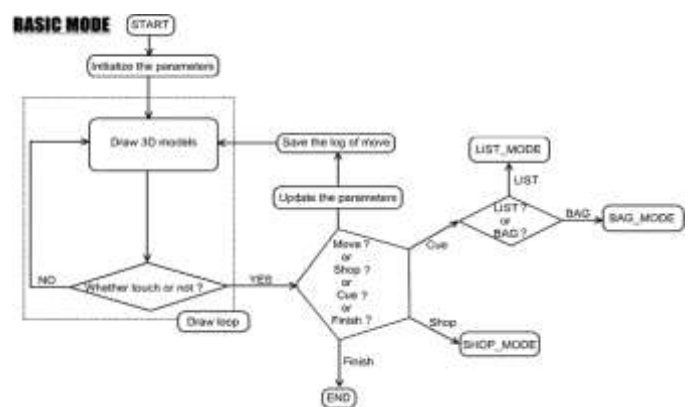

Figure 1 (A):-BASIC MODE flow chart.

BASIC MODE is a fundamental mode of VST. In this mode, users can move in virtual shopping mall by touching the upper and lower arrow button. Users also can transfer to LIST/BAG MODE and SHOP MODE from this mode.
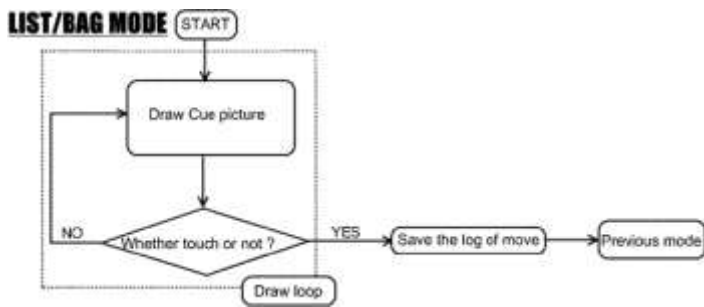
Figure 1(B):LIST/BAG MODE

LIST/BAG MODE flow chart. If users forget the items in the shopping list or something they have bought already during VST performance, they can touch the list or bag button to transfer to LIST/BAG MODE.

Based on the frameworks and the characteristics of Easy Mall prototyping system described above, we present an Basic flow chart, shown in Figure 1(A) and Figure 1(B),which also can be viewed as the flow of detailed decision-making process. All these decision making aids and recommendation agents are provided with the aim of supporting purchase and repeat purchase in the above flow chart we show how over system work and how it will start and update the data.

Product profile: Individual product has its own attributes, and all products can be clustered different groups according their attributes. For example, electric utilities can be clustered into different groups according to their grades. All the same, apparel can be also classified according to the same standard. The two items can't be merged into one group. It is because a customer who purchases a high-grade electric utility doesn't necessarily purchase a suit of high-grade apparel.

User profile: Personal data is being derived from the user profile of the customers. In Figure 2, Individual-based user profile refers to a processed user profile concluded from a bunch of shopping histories of a customer. Group-based user profile is represented as an aggregate of those users who have certain similar consuming characters in the shopping histories. We consider the 7 aspects for the consumer's data from the table 1: The input of personal datum in Easy Mall should be voluntary. By summing up the characteristics of customers' behaviors, we apply the following parameters to measure the deduced attributes of consumers'; we associate a weight with each value of parameter (usually in [0,1]), including Grade-based weight (weight _Grade), Price Sensitivity-based weight (weight _Price), Novelty-based weight (weight _Novelty), Brand-based weight (weight _Band) and Service-based weight (weight _Service).

Constructing the marketing decision model: The process of marketing decision is essentially a process of dynamic information matching. According to the matching

relationship respectively between the individual-based and group-based user/product profile to predict the customer's future shopping behaviors which will probably lead to higher sales volume in cases of the vendors' promotion activities. Once specific marketing strategies in the Easy Mall have been schemed, they will be carried out by the so-called Activity Planner. Activity Planner is a tool of merchandise planning; it administers the matching status of user and product profile and the Associated Rules of Easy Mall. Activity Planning includes three parts: Decide the recommendation set of products.. Decide the assembler set of affiliated-sales or complimented-sales. Present some personalized service.

1.2 EXPERT SYSTEM

A. EXISTING SYSTEM
The current system only gives the normal view of the product. User can't get actual 360 Degree view of the product and product details. This existing system is too lengthy, Difficult to use. It can't provide mall experience at home and at comfort level.

B. Virtual Reality: Past, Present, and future:
It provides a feel of walking through an actual mall-3D scenario. Items square measure primarily categorised by outlets and not by kind. 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 touch experience.

2. Working principle

Logging in is usually used to enter a specific page, which intruders cannot see. Once the user is logged in, the login token may be used to track what actions the user has taken while connected to the application. In this application user needs to login to enter the Virtual World. User can use Email ID and password for logging in. If he/she doesn't have any account then he/she has to create one. Now, the next step is to fit your phone into the slot of the VR kit. You can easily turn your smart phone in your hand into a VR headset by just following very easy steps. In this way, you will be able to enjoy this concept by using your smart phone and a very inexpensive virtual reality box that is available in the markets in many different versions. For most of the headsets, there is a simple way of placing your Smartphone in the given place, after placing your smart phone into the slot, make sure the safety of your phone before putting the kit on. 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.

Fig:4.1 Inside view of Virtual Shopping mall

Fig.4.2 VR Camera View

In our shopping mall we are providing different sections like Grocery section, etc. so that customer can easily get required items. Customer just need to select the section of their choice and he will get teleported to that section, User can buy it or can navigate further and do the shopping. After choosing the section of their choice's customer can roam inside Virtual mall. Customer can select the required product. After selecting it he will get all the information related to the product. For example, if customer chooses a Fanta bottle, he will get its information like, product name, ratings, price etc. then he will get the option for adding the product in the cart. By clicking Add to Cart option user can add the product in the cart , otherwise he can just click on the close button. All these actions can be performed by using the pointer provided in the VR view of mall. For such actions some equipment's like Remote Controllers, Gloves and Advance VR Headsets like Oculus Rift, HTC Vive, Sony PlayStation VR can be used. After adding the products into the cart user will get the list of added items. User will get the list of all the added items along with its prices and total amount. User can buy all the selected items. If he wants to remove the items, he can do it by clicking cross button. After all these steps user can proceed to checkout.

3. CONCLUSION

This application provides a new way of surfing in the new world of online shopping. Where user can visualize any product add it and buy the products 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 experiencing the products and services. 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 beverages. 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, Pemex 8K VR, Oculus Santa Cruz, etc. to get better experience of virtual world.

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