

AUGUMENTED REALITY IN E-COMMERCE

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Abstract- The system is a web application that will be really useful for the customers and also for vendors. It is a one-stop solution for all the shopaholics. It overcomes the disadvantage of going to stores in search of the products and waiting in the queue to buy the product. Our proposed system is that we can be able to buy whatever products we want, from wherever we are. This can be utilized in shops, restaurants, and many other stores which helps in increasing the productivity and contributes to the economy as a whole to a larger extent. This application has a lot of stores in a single platform. The most interesting part is that, we're using an Augmented Reality (AR) with which we can experience the trails in our place. This augmented reality helps the customers to identify their suiting perfectly as they experience in physical shopping mode. This application can be used by any range of group or communities that is more convenient and saves a lot of time. It makes a clear vision to us to buy the correct products. This will help the customers to discover wide range of products which suits them good and they can be able to buy the product from wide range of places also. The customers can also rate and review the services of the products which increases the standard of the platform.

Introduction

a) Background

Just imagine that all the products from all kinds of shops which are located in our city and various other cities are clubbed together in a single platform where we can be able to buy all the products in that single application. Isn't this sounds great! That's why we're bringing this platform. Using a computer browser and the internet, customers can make direct purchases from sellers through a sort of electronic commerce known as online shopping. It gives

the user the option to browse a large selection of goods and services, view product photographs or images, specs, features, and prices, as well as product ratings and reviews. We're introducing this platform to make shopping much easier and comprehensive. By using this platform, the customers can be able to buy the products from their favorite places/shops without going to respective places/shops. It will be more useful to local stores to be familiar to everyone who are using this platform. For example: If you want to buy a shirt from online-stores, which one do you prefer? Choosing a known stores or from unknown stores? Definitely we'll prefer the known stores. So that's the idea of this platform. In this platform, we're allowing consumers to sign up for a permanent online account so the information only needs to be entered once. The customer often receives notifications from that site when their searched products is available.

b) Problem Statement

The brands or specific products that users want to buy are not clear to them. Nowadays, a lot of consumers look up things on Google rather than individual e-commerce websites. They are under the impression that Google will direct them to online stores. that which is essential.

If the customers see any product in physical mode, they may search same types of products but sometimes remains unsatisfied. Sometimes the local shops get closed after 9'o clock so we can't be able to purchase our required things or products. We have all heard about clients that favor online retailers with free shipping. Customers hardly ever bother to seek elsewhere since online retail behemoths like Amazon offer such attractive delivery deals. How does one bring down costs for shipping? According to a survey, more than 60% of online customers said they research a retailer's return

policy before making a purchase. A customer feels nervous and is less likely to trust the organization when an e-commerce website states clearly that "no returns and refunds" are permitted.

Literature Review

1)Multi Product E-Commerce

Some internet portals offer nearly all product and service categories on a single website, hence they are aimed at consumers of all conceivable goods and services. The most popular examples are: www.flipkart.com/
<https://www.amazon.com/>
<https://www.shopclues.com/>
<https://sellglobal.ebay.in/seller-center/>.

iii) Apparel and beauty:

<https://www.zara.com/i> <https://www.hm.com/>
<https://www.cultbeauty.co.uk/> <https://deciem.com/>

These Indian e-commerce sites offer products and services in numerous categories, including:

- Apparel and Accessories for men and women
- Health and beauty products
- Books and magazines
- Household appliances
- Jewellery
- Gift articles
- Computers, peripherals and etc.,

2)Single Product E-Commerce:

Some Indian portals/websites deal in a specialized field.

i)Automobiles:

<http://www.indiacarservice.in/> <http://automart-india.com/>

On these websites, we can purchase and sell new and old automobiles, including four- and two-wheelers.

Advantages of automobile in e-commerce

- Buying a car online saves time
- You still get to test drive the car

Disadvantages of automobile in e-commerce

- Limited trade in value
- You may have to pay shipping fees
- You don't always get that value in person experience
- Limited financing options

ii)Real estate in E-commerce:

<https://www.indiaproperty.com/>
<https://www.99acres.com/>

Using their platform, they provide the option to buy a house altogether or lease one. They offer details on both newly constructed homes and homes that are available for sale. These websites are meant for branded clothing and beauty products only.

3)AR In E-Commerce

The auto sector was the first to advertise with the term augmented reality. The use of augmented reality in conjunction with it makes a significant advancement in e-commerce conceivable. 77% of consumers prefer to utilize augmented reality (AR) technology to preview products and differentiating factors like color, size, and style. A key idea in marketing and advertising, augmented reality (AR) incorporates computerized (digital) data or objects into the subject's experience of the real environment, typically in conjunction with other media, to reveal, communicate, or illustrate customer advantages to achieve hierarchical goals. By 2020, Augmented Reality must bring in \$120 billion in revenue, up from a market value of 640.4 million dollars in 2015.

AR is used in a wide range of industries, including manufacturing, correspondence, healthcare, retail, transportation, the military, education, gaming, and online commerce. The tool can modulate 3D objects in many locations, enabling users to interact with ease and sophisticated delivery to their own location. Organizations like IKEA and converse are utilizing augmented reality to assist clients with imagining household items in their homes progressively utilizing cell phone applications.

The buyer's apparent benefit and favourable experience can be used to explain the expansion in the development of AR applications. Measurements showing that over a billion Web users purchased goods through online retail websites in 2013 demonstrate the rapid growth of e-commerce. When it comes to implementing augmented reality (AR) technology in online businesses, Ecommerce companies must enhance their mechanical proficiency by developing 3D object models using 3D modelling software and programming tools, as well as having a strong innovative team.

Existing System

There are several existing systems on the internet and also available as a standalone system. There are existing systems like Flipkart, Amazon, Myntra etc., which are used to buy products and also users can ask doubts and give feedbacks in those applications. They primarily focus on selling only few types of products to the customers. Only few sites are giving all types of products to the customers and we customers don't know that the product is coming from which store. We can only be able to see the products and their sellers but we do not know where do they source from.

Drawbacks of Existing System:

The drawbacks of the existing system available on the internet are:

- i) We can't able to see from which stores we are buying a product. This exists as a major drawback in all the online shopping sites leading to the sellers who sell fake products or fake brands in the name of original brands at cheaper price.
- ii) It is not possible to fix our photo to see whether the particular product is good for us or not.
- iii) We can't able to see the local stores products by using this platform.
- iv) If we are going to a shop for buying some products means we want to stand in a queue to buy that product, so it takes lot of time.
- v) Some sites are hiding their return and refund policies, so that will be a major headache for the customers.
- vi) Additional shipping and handling charges are finalized while purchase of the product

Proposed System

The rise of local shops will be increased by using this platform and we can able to see the products of our local shops/stores. We're bringing out all kinds of shops in a single platform where we can able to see, search and buy the liked products. To say simply, it is a one-stop solution for all the shopaholics. In a festival time, we want to go the shop and to stand in a rush for buying some products and if we don't like the product, we will go to some other shops, so it takes a

lot of time. To overcome this problem, we have developed this platform, in this we can simply sit in our home and have a look of that product and afterwards if we like that, we can buy that product so, it makes us shopping much easier and comfortable.

Augmented Reality:

The term "augmented reality" refers to circumstances where things in the real world are supplemented with computer-generated perceptual data, sometimes including data from many sensory modalities, including vision, hearing, touch, taste, and smell (AR). Furthermore, cosmetics businesses like L'Oréal, Sephora, Charlotte Tilbury, and Rimmel provide AR-enabled applications. Furthermore, furniture shops like IKEA, Houzz, and Wayfair employ AR technology. We can use augmented reality (AR) technology to explore the nearby trails.

For example, If we are looking for a shirt to buy and we're in a confusion whether the particular shirt is good for us or not. To overcome this problem, we're using an AR technology, in that we can able to add our photo so that we can able to fix that shirt with our photo by using AR technology and now we can able to see whether the particular shirt is a best suit for us or not. So, we don't want to go to the shop and have a trail, we can simply sit in our home and have a trail of that product.

Advantages of Proposed system:

The main advantage of the proposed system is that it provides a user-friendly environment to the customers to make them happy while shopping. It also has various advantages such as

- i) By using Augmented Reality (AR) technology we can able to see whether the particular product is suitable for us or not.
- ii) By using this platform, we can able to see the list of local stores which was available in this platform.
- iii) We can also able to see the nearby city stores and we can also able to buy that product.
- iv) This will be more useful to the local stores to be familiar to everyone who are all using this platform.
- v) The main motive is to, making customers shop globally and merchant to ship globally.

vi) This would definitely help to increase the customers to shop in e-commerce.

Software Development 1)Front end

React is a free and open-source JavaScript library for creating user interfaces (also known as React.js or ReactJS). Facebook, as well as a group of independent developers and businesses, manage it. Mobile or single-page applications can be built using React as a foundation. React, however, primarily focuses on rendering data to the DOM, therefore in order to create React apps, extra frameworks for state management and routing are typically needed. Examples of these libraries include Redux and React Router, respectively.

2)Server side:

Outside of a web browser, JavaScript code may run thanks to the open-source, cross-platform runtime environment known as Node.js. In order to generate dynamic web page content before the page is sent to the user's web browser using Node.js, developers can utilize JavaScript to build command-line tools and server-side scripts. Node.js, which integrates web application development around a single programming language instead of distinct languages for server- and client-side scripts, exemplifies a "JavaScript everywhere" approach.

Express is a flexible online application framework for Node.js that offers a strong set of functionalities for both web and mobile applications. Creating a rich API is quick and simple when you have access to so many HTTP utility methods and middleware.

3)Backend:

My SQL is an open-source relational database management system (RDBMS). My SQL works with an operating system to implement a relational database in a computer's storage system, manage users, allow for network access and facilities testing database integrity and creation of backups.

4)Image Processing Using AR:

We use apps that use markers that work with picture recognition. For triggering the display of AR material, they use black and white markers. Pointing your camera at a marker anywhere in your environment will allow you to see the augmented component. The augmented object is visible as soon as the smartphone recognizes the marker, at which point an app overlays the digital data on the marker.

We utilize the software programme Unity. The world's most popular and efficient game engine is called Unity. It can be utilized to develop powerful AR apps even though it is often used to develop video games.

With a multifunctional tool like Unity, you can incorporate both cutting-edge experiences and new approaches to expand on more conventional ideas. An open-source 3D visual toolkit is called Open Scene Graph (application programming interface). App developers employ it in fields including computer gaming, augmented and virtual reality, and modelling and scientific visualization.

Conclusion

The proposed system tries to overcome the disadvantages of the existing system and also to serve the customers in an efficient manner. It will help the

customers to discover wide range of products which suits them good and they can able to buy the product from wide range of places also. Ultimately, this would undoubtedly save us time and offer a more enjoyable and practical way to purchase from home. Technology is being employed more and more to improve customers' online shopping experiences, and this trend will last for a very long time. Many individuals think that internet shopping will eventually outpace in-store purchasing because of the quick proliferation of products and services. Nonetheless, the ease of access to online shopping has led to more informed consumers who can compare prices reasonably quickly and without exerting a lot of effort. Several small businesses can now access the internet in return. In the end, both the buyer and the seller benefited from the transaction.

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