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Enhancing Customer Buying Experience using MR

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Abstract: ***This study provides a general overview of the MR technology that aids consumers in improving their shopping experiences. VR, AR, and MR technologies have revolutionised the online shopping experience of customers in the modern world. To keep clients, online e-commerce websites offer a seamless brand experience. Over 75% of buyers still leave their shopping carts full without placing the order, according to statistics. The use of mixed reality holds great promise for creating satisfying customer experiences that resemble those seen in physical establishments. In order to perceive the actual and digital worlds simultaneously on a single display, mixed reality mixes augmented reality with virtual reality. This technology raises the bar for the internet market and simplifies online buying for consumers.***

Retailers may now provide customers augmented reality (AR) and virtual reality (VR) perspective of their items through the usage of mixed reality. The user may overlay the products in both their real-world and virtual environments by combining this technology into a single application. Currently, a user dons a set of mixed reality glasses with cameras and sensors. It gathers as much data about the surroundings as it can using this tool and software, basically building a digital map of the actual world. The MR technology may enhance the world with holographic content and pictures using that map.

Users of the MR glasses may view the objects they're viewing from different perspectives. In order to maximise their experience, they might then alter their own plans and deeds. The way individuals browse for things is anticipated to change as a result of this technology. eCommerce is undergoing a wave of transition as a result of mixed reality. We can anticipate seeing more of this kind of customer-enhancing technology in the future.

Keywords: Mixed Reality, Augmented Reality, E-Commerce, Shopping, MR glass, Holographic display

I. INTRODUCTION

Virtual reality, augmented reality, and mixed reality technologies, have altered a new aspect of online client purchasing behaviour. Retailers may now provide customers an augmented reality (AR) and virtual reality (VR) perspective of their items by utilising mixed reality. The sphere of education can also make use of it. Customers don't need to go to the store to view and feel the actual thing, which saves them time and money on travel. They may do it whenever is most convenient for them. They also save middlemen fees by shopping online, which they would otherwise have to pay if they went to a real retailer.

Customers should be able to seamlessly switch between a product catalogue, a fitting room, or a "see how it appears" experience, and the purchase flow. By analysing consumer behaviour signals and applying those insights across all channels in real-time, experiences should be able to link the dots between every contact. Retailers who make an investment in integrating digital experiences across shop, site, app, purchase, delivery, and support will be able to weather the coming storms and retain their clientele.

Retailers may now present clients with a virtual and augmented reality (AR) perspective of their items by utilising mixed reality. This technology may be merged into a single application that allows the user to overlay items in both their physical and virtual environments. For the time being, a user wears a set of mixed reality glasses equipped with sensors and cameras. It captures as much information about the surroundings as possible using this device and software, basically building a virtual map of the real world. MR technology can add holographic pictures and content to the world using that map.

II. LITERATURE SURVEY

Being able to satisfy clients with a variety of business and technological solutions is a top priority in today's commerce. To transform the in-store shopping experience, businesses invest in and experiment with a variety of merchandising and product marketing strategies. It is now plausible to think about how the purchase experience of customers may be enhanced from a fresh perspective with the introduction of MR Technology, AR Technology, and VR Technology as technologies available to consumers. This article describes a low-cost, consumer smart phone-based mixed reality technology that makes it possible to gamify the whole in-store shopping experience. [1].

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This study's objectives are to identify the marketing uses of augmented reality (AR) that have been created to date and to propose classification systems for those applications based on the level of augmentation, various consumption scenarios, and marketing responsibilities. A greater understanding of the dynamics of augmentation of the physical environment for commercial objectives is required in order to differentiate between customer experiences [2].

Although augmented reality (AR) has more applications in the cosmetics sector, customers don't always appear to embrace and use the technology. This is a complex problem that needs more research. The current study attempts to solve this issue by supplying the necessary understanding of the fundamental factors that influence the AR experience and how these factors could improve the actual purchasing experience for consumers. Participants in the current study were required to offer feedback on their experiences with both AR and making a purchase after trying a product on virtually. The results are clear in that they show how user satisfaction with an AR experience is impacted by that experience's interactivity, realism, usability, and immersion [3].

The usage of augmented and virtual reality technologies has grown in recent years, transforming how we interact with our surroundings. Such systems are frequently related to marketing, entertainment, health, education, and training. These technologies are increasingly being used in corporate and industrial contexts, where they may assist staff members with routine work, improve client happiness, and save expenses for organisations. This is a result of mobile and wearable technology, such as head-mounted displays, becoming more widely accepted and accessible (HMD). This study presents an innovative Mixed Reality (MR) approach to assist field workers in remote locations [4].

The variety of immersive technologies has been rapidly expanding since the first release of the first virtual reality (VR) devices that were intended for consumers. There appears to be no end to innovation in this industry, from 360° video to VR, augmented reality, mixed reality, volumetric, and computational imaging, to the advent of haptic devices that are getting more complicated. This can paralyse content producers, in their minds [5].

A. Analysis of Literature Survey

1) According to the report, AR/VR technology is bringing about change in a variety of industries, including e-commerce, medicine, and education.
2) It is used on a variety of sites, including lenskart and the Tanishq website.
3) This improved consumer experience also allows for closer interaction with the product.
4) In the world of sports, it is also helpful in enhancing athletes' abilities.

III. WORKING

The next big thing in computing is mixed reality, which will be followed by mainframes, PCs, and cell phones. For both consumers and companies, mixed reality is becoming more popular. By providing intuitive interactions with data in our living areas and with our companions, it frees us from experiences that are confined to screens. On their mobile devices, hundreds of millions of internet users have had mixed reality experiences. The most popular mixed reality options available on social media right now are mobile AR. The use of Instagram AR filters by users may not even be recognised as mixed reality experiences. Windows Mixed Reality enhances all of these user experiences with beautiful holographic human representations, incredibly realistic holographic 3D objects, and the actual world around them.

Due to the advancement of intelligent tools and systems that enable improved interactions between computers, people, and objects, the way we utilise mixed reality today is changing. The increasing connection between people and technology is crucial to mixed reality. An MR solution must be able to comprehend both the environment and a person's diverse behaviours in a given place in order to function properly and improves the online shopping environment.

In mixed reality, a variety of cameras, sensors, and usually AI-enabled technologies are utilised to process data about a location and use that data to deliver technologically improved experiences for customers. For instance, when a user starts wearing a pair of mixed reality glasses, cameras and sensors in those glasses connect to a programme that gathers more data about the environment as it can, basically building a virtual map of the product the consumer wants to experience. Via using that map, holographic content and visuals may be added by MR technology, and customers will be able to interact with the product as if it were there in front of them.

Thanks to mixed reality, online shoppers may test out products or utilise services before committing to a purchase in their own setting and at their own pace (MR). If MR is utilised to preview items, customers will be more likely to select the correct item the first time. With the help of all the sensors and displays, customers will be able to experience the actual product from the comfort of their own home, allowing them to determine whether or not it is the ideal fit for them. This technology will gather all the data and project it to VR glasses and holographic display, along with casting all the contents to the real world.

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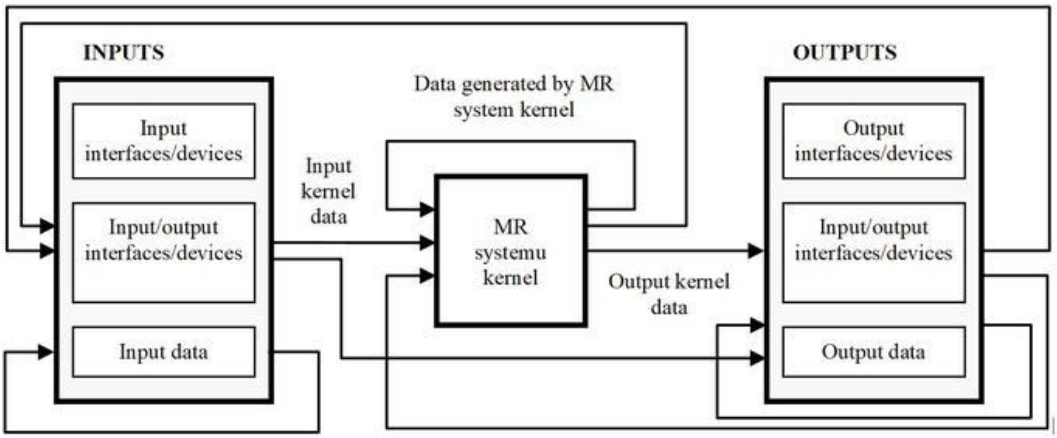


Fig.1 Architecture Diagram

IV. CONCLUSIONS

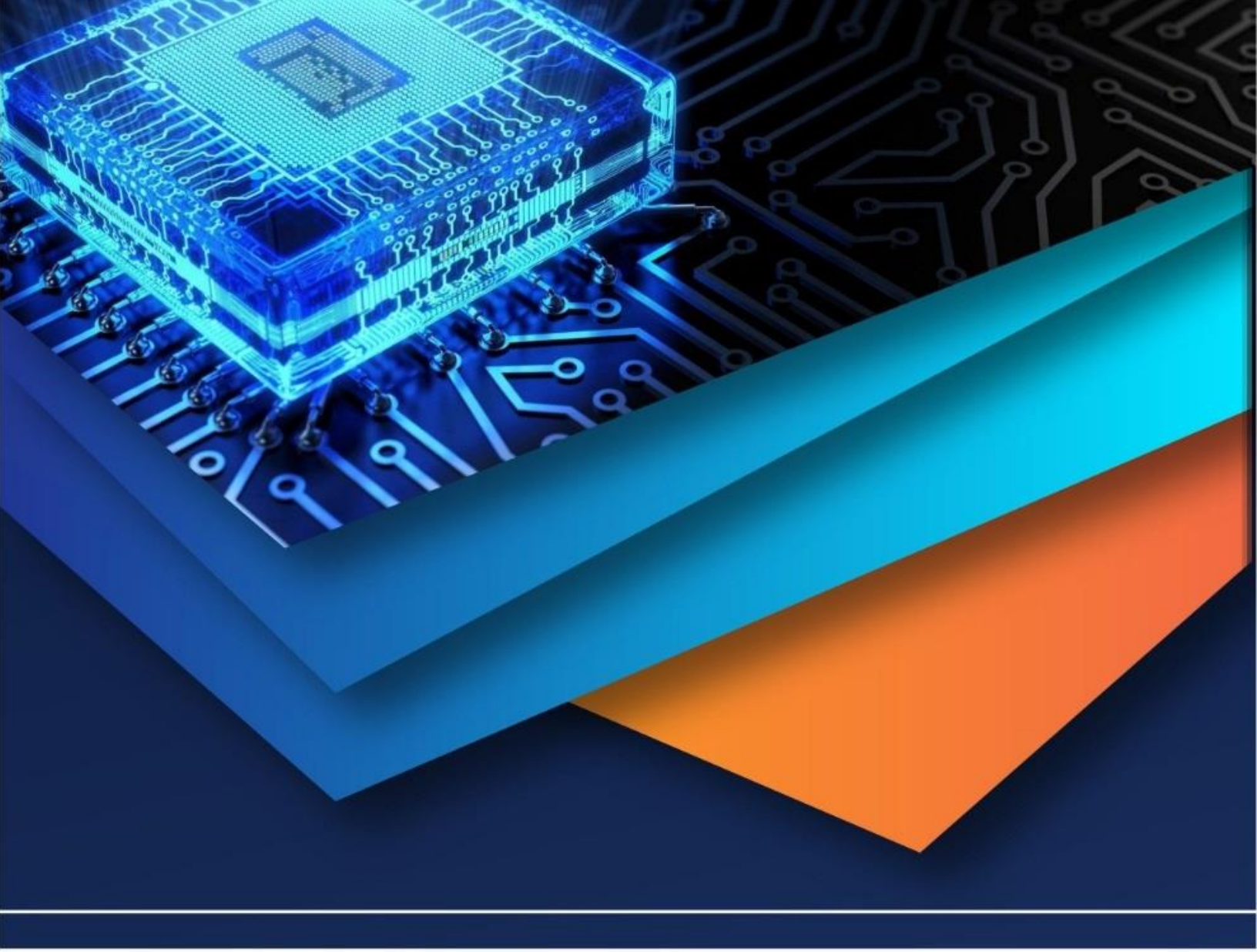
In the world of eCommerce, mixed reality is still a relatively recent development. Several well-known companies have already started using this technology to improve the way that customers purchase. Therefore, given its benefits, it can be claimed that mixed reality technology is essential for eCommerce. You must look for novel ways to connect with customers in the modern era of eCommerce, and augmented reality and mixed reality in e-commerce provide you a competitive and inventive edge. Given the times, it is reasonable to conclude that social distance has taken on a new normal, making augmented reality just as vital in 2022 as it was in 2018. Customers will have a better, more pleasurable experience thanks to mixed reality. The numerous advantages that modern technology offers businesses mean that they don't have to ignore it. But the improved engagement rates will undoubtedly increase total business revenues, which will encourage numerous businesses to provide similar services. Customers' acceptance of AR/VR/MR will take some time, as it does with many other technologies, and will aid in its global expansion. But with the current covid epidemic, we could soon witness it taking off significantly. E-commerce is expanding rapidly today and will do so in the years to come.

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