

Factors impacting acceptance of augmented reality after Covid-19 in India

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Mobile phone in hands give you more options of shopping than the mobile phone lying in pocket. Consumers want to take the advantage of advanced technologies of their smart phones for revolutionizing their buying process (Bandara et al., 2020; Wagner et al., 2020). Augmented reality, Virtual reality, and Artificial intelligence are some of the advanced technologies of the smart phones which give evolution to the new platform for shopping, called m-commerce (Blaise et al., 2018). Globally, m-commerce was expected to touch \$3.56 trillion by 2021 (Gupta et al., 2022). M-commerce has made the life easier and provided great flexibility to the consumers (Thongpapanl et al., 2018). This flexibility and convenience are greatly supported by one of the technological advancement, Augmented reality.

Augmented reality brings wonderful experience to the consumers by transforming physical reality into a virtual reality directly into the real time environment through the display like screen or projector (Javornik, 2016). Big companies like Apple and Google have their AR enabled apps to give better experiences to the consumers. AR has changed the pattern of shopping and marketing of consumers and marketers and still it needs to be explored further (Pantano et al., 2017; Mc Lean & Wilson, 2019).

Covid-19 has changed the pattern of dealing between consumers and marketers. In terms of profit, marketers have recovered their losses after the crisis but number of physical stores declined (Dolega & Lord, 2020). Technology has changed the traditional retailing into retailing without walls like online retailing and omnichannel retailing (Caro et al., 2020).

The Covid-19 pandemic has accelerated the adoption of digital technologies, including augmented reality (AR), in various sectors, including education, healthcare, and retail. In India, AR is being used in a variety of applications, such as virtual try-on for fashion products, virtual home decor, and AR-powered educational tools. However, the acceptance of AR in India after Covid-19 is likely to be influenced by several factors, including:

Awareness and Education: Awareness and education about AR technology and its potential applications are essential to drive acceptance. India has a large population with varying levels of digital literacy, and educating consumers about the benefits and potential of AR technology will be crucial in driving its adoption.

Infrastructure and Connectivity: The availability and reliability of high-speed internet and 5G connectivity are critical for AR technology to function effectively. India is still in the process of rolling out 5G technology, and the availability of high-speed internet is still a challenge in many parts of the country. The adoption of AR technology will depend on the availability and reliability of these critical infrastructure components.

Cost: The cost of AR-enabled devices and applications is another critical factor that will impact acceptance. The cost of AR-enabled smartphones and other devices is still relatively high, which may limit its adoption in the Indian market. However, the cost of these devices is likely to decrease as the technology becomes more widespread and production volumes increase.

Privacy and Security: Privacy and security concerns are always a consideration when it comes to new technologies, and AR is no exception. Consumers will be wary of sharing personal information and data with AR applications, and it will be essential for developers to address these concerns and implement robust security measures to protect user data.

Cultural and Social Acceptance: Finally, the acceptance of AR in India will also depend on cultural and social factors. India has a rich cultural heritage, and any new technology must

be sensitive to these cultural norms and practices. Additionally, social acceptance, or the willingness of consumers to embrace new technologies, will also be an essential factor in driving adoption. In conclusion, the acceptance of augmented reality in India after Covid-19 will depend on several factors, including awareness and education, infrastructure and connectivity, cost, privacy and security, and cultural and social acceptance. Addressing these factors will be critical for developers and businesses looking to tap into the Indian market for AR technology.

Techniques used in VR

Virtual reality (VR) is an immersive technology that creates a simulated environment, usually through a head-mounted display (HMD) and other input devices. Here are some of the techniques used in virtual reality:

Head-mounted displays (HMDs): These are devices that you wear on your head to see the virtual world. They typically have two screens, one for each eye, and can be either tethered to a computer or mobile device or be standalone.

3D modeling and animation: Creating a virtual world requires modeling and animating 3D objects and characters. This can be done using software like Blender, Maya, or 3ds Max.

Spatial audio: Audio is an important part of the VR experience. Spatial audio techniques are used to simulate sound in three dimensions, allowing users to hear sounds as if they were coming from different directions and distances.

Tracking: In order to create a realistic experience, VR systems need to track the user's movements. This is done using a variety of sensors, including cameras, accelerometers, and gyroscopes.

Hand-held controllers: Hand-held controllers are used to provide input to the virtual world. These can range from simple buttons and joysticks to more complex devices with motion sensing capabilities.

Room-scale VR: Room-scale VR allows users to move around in a physical space while wearing a headset. This is achieved by using multiple sensors to track the user's position and movement.

Haptic feedback: Haptic feedback technology can be used to simulate the sense of touch in VR. This can be done using gloves or other devices that provide tactile feedback.

Eye-tracking: Eye-tracking technology can be used to track the user's gaze, allowing the system to adjust the display and focus on areas of interest.

Artificial intelligence: AI can be used in VR to create more realistic and dynamic environments. For example, AI algorithms can be used to generate natural language responses to user input, or to create virtual characters that behave more realistically.

Disadvantages of VR after Covid

While virtual reality (VR) has proven to be a valuable tool during the COVID-19 pandemic, allowing people to engage in remote activities and experiences, there are also some potential disadvantages to its increased use:

Physical isolation: One of the biggest disadvantages of VR is that it can contribute to physical isolation. As people become more immersed in virtual worlds, they may become less inclined to engage with the real world and real people around them.

Health risks: VR can cause motion sickness, headaches, eye strain, and other health issues. Prolonged use of VR can also lead to decreased physical activity, which can have negative health consequences.

Cost: High-quality VR equipment can be expensive, making it inaccessible to many people. In addition, some VR experiences require ongoing subscriptions or in-app purchases, which can add up quickly.

Addiction: Just like with any other technology, there is a risk of addiction to VR. People may become so engrossed in the virtual world that they neglect their real-life responsibilities and relationships.

Social disconnect: While VR can provide a sense of social interaction, it can never replace face-to-face communication and human touch. Over-reliance on VR for social interaction may lead to further disconnection and loneliness.

It's important to note that these disadvantages are not unique to VR and can apply to any technology or form of entertainment. However, they are worth considering as we continue to explore the role of VR in our post-pandemic world.

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