

The Era of Augmented Reality and its Impacts

Elyse Jackson

“Apple Vision Pro is the result of decades of experience designing high-performance, mobile, and wearable devices — culminating in the most ambitious product Apple has ever created.”¹ This is how Apple describes its newest innovative product that brings augmented reality to a comfortable new headset.² For the measly sum of \$3499, you too can have the power of spatial computing as you navigate through digital media.³ Like a vision of the future (no pun intended), the Apple Vision Pro is the latest in augmented reality technology following in the footsteps of devices like the recently halted Google Glasses and the Quest Pro headsets from Meta.⁴ It would appear that augmented reality is the next big thing in technological advancements, but, other than the hefty price tag, what is the cost to consumers or society as a whole should this technology become more accessible?

First, it’s important to address all the things you can do in augmented reality. Oculus Rift provides users with an immersive gaming experience that can include interactive games like *Lucky’s Tale* and *EVE: Valkyrie*.⁵ Today you can also play popular games like *Among Us* and *Five Nights at Freddy’s: Help Wanted* on devices like Meta Quest.⁶ A few years ago, you would have also been able to find myself as an eager consumer of virtual reality media. I found myself an avid user of VR Chat because of the opportunity to practice speaking Chinese to native speakers without paying or leaving my home. Because of how informal it was, I was able to learn more casual Chinese and learn about trending topics that keep my vocabulary sharp. The VR Chat experience is also unbelievably hilarious. Most users feel it to be a safe space of self-expression and connection, as a result there are multiple communities, such as the comedy club.⁷ This is a stand-up comedian environment equipped with tables and chairs, a small stage with curtains, a mic, and a stool. The group has gained enough notoriety that users can pay for tickets to attend comedian sets held by professional and up and coming comedians.⁸ My sessions, however, became increasingly short over time due to the aftereffects of being in the virtual world.

Unfortunately, as the Business Insider reports, immersive VR can have negative effects on the brain.⁹ The director of the Virtual Human Interaction Lab at Stanford, Jeremy Bailenson, stated “You’ve got many, many people, and they’re wearing it for many, many hours. And everything magnifies at scale.”¹⁰ The result is a change in the way we perceive the world.¹¹ The short-term effects include a decrease in depth perception, degradation of vision, and something

¹ APPLE VISION PRO, <https://www.apple.com/apple-vision-pro/> (last visited Feb. 6, 2024).

² *Id.*

³ *Id.*

⁴ Sascha Brodsky, *Google Glass Is Gone—Here’s Why VR Needs to Learn From That Failure*, LIFEWIRE (Mar. 20, 2023), <https://www.lifewire.com/google-glass-is-gone-heres-why-vr-needs-to-learn-from-that-failure-7368898>.

⁵ Tom Pritchard, *What is the Oculus Rift? Everything You Need to Know*, TOM’S GUIDE (Oct. 26, 2022), <https://www.tomsguide.com/reference/what-is-the-oculus-rift-everything-you-need-to-know#:~:text=The%20Oculus%20Rift%20itself%20is,whatever%20game%20you're%20playing>.

⁶ META, <https://www.meta.com/experiences/3162101440489458/> (last visited Feb. 6, 2024).

⁷ FAILED TO RENDER COMEDY CLUB, <https://www.patreon.com/FailedToRenderComedy> (last visited Feb. 6, 2024)

⁸ *Id.*

⁹ Adam Rogers, *The Vision Pro’s Scary Side Effect*, BUS. INSIDER (Feb. 11, 2024), <https://www.businessinsider.com/apple-vision-pro-experiment-brain-virtual-reality-side-effect-2024-2>.

¹⁰ *Id.*

¹¹ *Id.*

called “simulator sickness”.¹² The symptoms of this sickness includes nausea, dizziness, headaches, and general disorientation.¹³

These vexing side effects do not seem to be stopping Apple, however. In fact, the Apple Vision Pro seeks regular immersion by offering ordinary features we use in our everyday lives for work, entertainment and, school. Some of these features allow you to browse the internet, send messages, participating in video calls, making notes, create to-do lists, mediate and watch seamlessly in the virtual space all while moving between them in reality.¹⁴ Perhaps because the device interacts with your physical space, which allows you to stay present, Apple is hoping to mitigate the effects of “simulator sickness”.¹⁵ However, it may be futile.

Stanford researchers have found that our brains can adapt to changes in vision and auto correct for any distortion, but our brains face significant challenges adjusting to the kind of distortion VR creates.¹⁶ Due to something called passthrough video distortion, interacting with reality through the lens of the headset causes visual acuity problems upon removing the glasses.¹⁷ The fact is the cameras in the device do not boast the same high-resolution in which our brains are able to perceive the world.¹⁸ While the headset is on, it may be more difficult to interact with the world due to the passthrough distortion because objects that are closer to your face will end up looking larger, making certain mundane tasks much more difficult.¹⁹ When the headset comes off, researchers found they would misjudge the distance between things causing general confusion.²⁰

In addition to the health risks, one of my immediate concerns about the proliferation of augmented reality is the likely inundation of advertising that will be delivered straight into the eyeballs of users in such a way that it also obstructs the view of the environment around them. Like something out of Black Mirror, advertising media could become inescapable. There are already a myriad of complaints about how advertising has taken over and ruined sources of entertainment such as the news, tv shows, online videos, movie theaters, and streaming sites.²¹ With the advent of virtual reality, it may feel like advertisements will be integrated into our basic vision.

It is important for both consumers and innovators to be wary of the side effects of virtual reality. Consumers should be careful to take breaks from the headset and watch for changes in vision to avoid damage. Extra care must also be taken when using the headset outside of the home, as there may be safety risks due to the lower visual acuity that the headset causes while wearing the headset and after taking it off. While it may look really cool to sport a VR headset to hold a video call while grabbing coffee, sometimes it may be safer to keep the headset off. Innovators must be careful to consider all of the issues that will be presented as augmented reality becomes more common place. Responses must be swift to mitigate possible damage to

¹² *Id.*

¹³ *Id.*

¹⁴ APPLE VISION PRO, *supra* note 1.

¹⁵ *Id.*

¹⁶ Adam Clark Estes, *What Wearing Apple's Vision Pro Headset Does to Our Brains*, VOX (Feb. 1, 2024), <https://www.vox.com/technology/2024/2/1/24057024/apple-vision-pro-headset-virtual-mixed-reality-meta-oculus-spatial-computing>.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ Damien Snyder, *Ads Are Everywhere, and It's Not Okay*, LESS WRONG (Mar. 19, 2021), <https://www.lesswrong.com/posts/5obQnexq7jMJHAnE6/ads-are-everywhere-and-it-s-not-okay>.

everyday consumers. These responses can be updates to software, changes in recommendations for use, increased warnings against certain kinds of use and recalls if necessary. We have a long way to go to get a Tony Stark level of mixed reality lightweight glasses, however, what we have is a very interesting introduction that will hopefully only improve with time.