**Virtual Reality Investigation**

Intro

In recent years virtual reality commonly known as VR has been hyped as the next step in gaming. It also has many other uses outside of gaming like movies, tourism, medical and education to name a few. But today we are going to focus on it’s gaming applications and what the future looks like. So It was only in the year 2016 VR finally made its breakthrough into mainstream technology with companies like Facebook (Oculus Technology) and Sony (PlayStation VR). With the introduction of this technology, media, industry experts and gamers have been trying to determine whether VR is going to become the gaming platform of choice or eventually die out in the years to come. There are countless articles and reports online that have been analysing this topic over the last 5 years. While its popularity is trending upwards it still has a long way to go. For example, recent statistics from one of the articles we found (eftm.com) states there is over 3 billion people worldwide identified as ‘gamers’, with almost half being PC gamers. VR headsets sold amounted to around 3.7 million in 2017, 6 million in 2019, 6.4 million in 2020. VR users also increased from 1 percent to 2 percent of the total users of Steam in 2020. But you also need to factor in the other common consoles from Sony, Microsoft, Nintendo and other companies, plus mobile gamers, that take up another considerable chunk of the gaming pie. These numbers clearly indicate a massive gap to cover before VR can reach ‘console of choice’ status. As gamers you always seek the next big experience in the industry and the more immersive the better. VR has the potential to offer some of the best experiences in gaming but it only services a niche fanbase now, it’s current limitations and disadvantages need to be overcome first. These main points that need to be addressed to see VR compete in the gaming space are cost, convenience, medical side effects and content.

Cost

So, the current console market has price ranges of $500 - $750 for the latest Xbox Series and PlayStation 5, with Nintendo Switch coming in at $300 - $550, decent PC’s can range in the thousands of dollars depending on how high performance you want it to be, PC’s obviously being capable of doing so much more than just gaming. The major VR companies in the industry are charging between $400(PSVR) - $1000(HTC Vive Cosmos) for the headsets, which is going to be an additional cost for your PC or PlayStation. It is also worth mentioning that VR is heavily intensive on a PC and you will require a highly spec’d PC to run VR games decently. Altogether this is a substantial amount extra to pay on top of your gaming device for something that is still early days and struggles from various limitations that we elaborate on soon. But as with all technology over time, the performance gradually increases, and the price continues to drop when the newer version release. Unfortunately for VR, the price point needs to drop considerably and having it bundled with a console and games at an affordable price would provide more incentive for newcomers. No one wants to pay through the roof for a niche product with multiple constraints.

Convenience

Anyone looking to purchase a VR headset must also be mindful of the space they have to use that headset in. Most devices recommend two square metres of movement space to avoid potentially bumping obstacles or otherwise harming yourself – which can be quite a lot for most Aussie homes. Game design needs to be factored in for this limitation, your game can’t lead users into moving around the house to the point where they run into walls or other objects. This means the user will lose the convenience of just cramping a desk with a PC in the corner of your room or hiding the console in your entertainment unit and sitting on the couch. With the added factors of cords going everywhere(potentially) and the general set up is more difficult than a simple plug and play console. If there are interruptions while playing, simply pausing a game to answer a door becomes a chore when removing headsets and gear then having to put it all back on and immerse yourself back into the game. Compared to simply hitting the pause button and getting out of your chair. Technological advancements need to be optimised in this area to gain mass appeal. The head unit needs to be light, durable, have solid battery life and completely wireless. Whether it is associated with a controller like PlayStation or special controllers for your hands it needs to be simple to pick up and play. Some VR headsets do an okay job of this already (e.g. the Oculus Quest is completely wireless but lacks graphical power compared to other systems) but when it comes to gaming and appealing to the majority, the easier the better.

Medical Side Effects

The biggest issue that plagues a lot of VR players, are the medical side effects that come with using the devices. It is common for players to become physically ill, resulting in nausea, eyestrain, and other side-effects. While in VR, your whole body is engaged in a way unlike anything in traditional games. Recommended play time is around 1 hour with a 15-minute break to move around and reset yourself. To start with, the headset needs to fit different head sizes and shapes, it needs to remain comfortable for long stretches, including the lenses themselves, which must be considerate of user’s eyes in regard to sensitivity and potential damage from prolonged usage. For many, the most common problem is “VR Sickness,” a term adopted by developers and players to describe the various afflictions caused by playing VR games. Nausea, dizziness, disorientation and a number of other motion-sickness related symptoms are common with many VR users and this is exacerbated by the nature of virtual reality: The player’s eyes tell their brain they are walking, while their body tells them that they are still. You can experience this in everyday life, such as when you read a book in the back of a car. Game developers are still experimenting while building VR games, mostly using trial and error in an attempt to expand on game mechanics and design that will minimize VR sickness and feel good to play over extended periods of time. This limitation is probably the biggest hurdle that needs to be overcome to draw in popularity to VR gaming, if people try VR and become ill after playing then the likelihood of them coming back or spending money on the product is going to diminish significantly.

Content

When you combine all the user complications in the VR space we have just spoken about, it becomes difficult for game developers to invest time, money and resources into making a VR game. For example, Half-Life: Alyx saw over 40,000 concurrent Steam users at launch, which is only a fraction of popular game like “PUBG” which at one point had over 3 million concurrent users. With the severe lack of user engagement compared to more traditional gaming experiences it’s hard to convince game developers to produce more content to push the technology into more hands. Why make a VR game when you could make a normal PC/Console/Mobile game and earn 5 - 10 times the profit? E.g., VR game spending still accounts for just a small fraction (0.4 percent) of the $130.6B revenue generated by gaming hardware and software makers in 2020. This issue leads to the general lack of content in the VR space. If the other constraints mentioned earlier (cost, convenience and medical side effects) can be optimised to the point where they are no longer a glaring downside to the VR platform then developers will be more inclined to start producing more games for VR. Unfortunately, until this happens the risk to reward for developers to invest in VR games is too high for many to pursue.

Closing Statements

So far, we have focused on the negatives that go with VR gaming and demonstrated why these things need to be improved to launch VR gaming forward. There are a number of good reasons why developers and companies should keep working to produce better hardware and software to fix these issues and make the whole experience better, easier and more affordable. Potential seems to be the key word when talking about the future of VR and some VR games already do a great job of creating a superior experience to standard PC or console equivalents. Games like Beat Saber, Microsoft flight simulator, Star Wars squadrons all offer objectively better experiences in VR. Having the ability to look around the cockpit and over your shoulder in dog fights on squadrons is a lot better than the traditional TV experience. You can check out Angry Joe’s YouTube review of Star Wars Squadrons for further detail on comparing the experiences. Partnering these games with a joystick, steering wheel and other relevant peripherals and you have some the most realistic experiences in gaming. The possibilities are endless with VR and not just for gaming, the future genuinely looks exciting and makes you wonder what they could achieve in 5 – 10 years and beyond. One my personal favourite ideas for the future would be to see a VR headset combined with Augmented Reality, enabling the user to play a game through the headset but still see everything in the real world, allowing you to move about freely and not run into objects. For example you could play Pokémon Go or The Witcher: Monster Slayer but instead of on your phone you play with a headset and hand controllers in the real world. Obviously this concept would require technological advances but I think it could be something amazing if done right.

<https://eftm.com/2021/03/does-virtual-reality-have-a-future-in-gaming-207232>

<https://www.washingtonpost.com/video-games/2021/02/04/virtual-reality-future-games/>

<https://techstory.in/is-vr-the-future-of-gaming/>

<https://www.statista.com/topics/2532/virtual-reality-vr/>