



Metaverse: The Future of (Virtual) Reality

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Abstract: -

The purpose of **Metaverse the future of virtual reality** is that future of our life that will change our living style as the technologies that we are using today and technology in future will be different it will include Virtual reality, Augmented reality, Block Chain, XR technology. The concept of the metaverse can be also expressed in the parallel universe where all digital and social media will be integrated and in below study there is detailed overview given about the metaverse and how it will be working in the future. Along this there is explanation of Virtual reality (VR) and augmented reality (AR) with its advantages and how it is going to increase the usage of its in next 5-7 years. Augmented Reality (AR) improves users experience it layers reality layers visual noises, effects and other sound effects on real world on other hand Virtual Reality (VR) will help us to experience visual realities in real world and in future metaverse will allow to develop online place more multidimension user interaction than current technology allows. Users in metaverse will be able to immerse themselves in an environment where the digital and physical worlds collide rather than only watching digital material.

KEYWORDS: - Metaverse, Virtual Reality, Augmented Reality, Block Chain, XR Technology

Introduction: -

The metaverse is one of the most exciting landscapes in the new world of Web3 metaverse itself will serve both as a tool and a product of market research. **Surveys, interviews, and even ethnographic recordings can be done virtually, taking all real-world processes into augmented reality.** Screening and verification of data will again be the primary concern to maintain authentic data. (Mishra et al. 2020)

Education is one crucial field for society and economy were core implementation methods remains unchanged and orbiting around content transmission, classroom, and textbooks despite numerous technologies. Currently there is an intense race to construct the interior, protocols, and standards to govern the metaverse (Han and tom Dieck 2019).

The metaverse will allow the companies to create their own world that represents the brand which no video, advertisement, words, or image would do. Each world can be unique and can create a fully immersive experience for customers. (Loureiro et al. 2021)

The metaverse will provide more immersive and attractive advertisement than traditional marketing does. Metaverse will help the digital marketing to create its own space which will take on a (whole Mittelstaedt et al. 2020)

New look of market and it will also help the companies to reach its customers in new and decentralized ways. Traditional marketing tools like TV and print advertisement will become obsolete in time and new digital marketing tools will take over all this which will make the work of the people much easier (Mishra et al. 2020)

The good thing of the metaverse is it appeals to anyone no matter their age, occupation, country or gender. Especially if you want to attract the GEN-Z and millennials, metaverse marketing is now a must-have strategy for your business. (Lee et al. 2020)

Metaverse which is the future of the world and the technology will help thousands of companies to change their working condition. With the introduction of AR & VR which will make more practical and physical contact of the world which will lead to the growth of virtual reality or world (2021).

Review of Literature: -

VR (VIRTUAL REALITY)

VR is the use of computer-generated 3D environment that the user can navigate and interact with, resulting in real-time simulation of one or more of the user's five senses and mainly by three elements that characterize VR are 1) visualization, where users have the ability to look around with the help of a head-mounted display 2) Immersion, suspension of belief and physical representation 3) interactivity, degree of control over experience usually achieved with sensors. (Singh & Lee, 2009)

Two common words found within the VR research are Virtual Environments and Virtual worlds. The experience of the VR is being immersed in the virtual environments and these terms are also used in the virtual environment, tourism, education even though the essence of their study discusses the concept of that characterizes VR and the term virtual reality is never used by the author as they use the technical term virtual environments.

Virtual worlds are described as the persistent virtual environments, open 24/7, and enabling people represented by avatars. One of the most active virtual world platforms is Second Life, an internet-based virtual world where avatars socialize, network and create their open virtual spaces (Huang et al., 2016)

Second Life boasts 36 million residents and with more than 1 million active users monthly. In 10 years, transactions within the virtual world economy amounted to USD 3.2 billion (Linden Lab, 2013). The rise in popularity of virtual world has not gone unnoticed in the tourism industry with Sweden, Maldives, Estonia, Serbia, this all having virtual embassies, hospitality organization (Wyld, 2010)

Second Life requires much money in acquiring land, embassies and virtual campus, buying land as skin to renting storage space on their servers with more land costing more money this means these embassies, virtual hotels and financial outlays in Second Life is worth investment, this all gives growth in virtual world tourism (Mura et al. 2016)

AR (AUGMENTED REALITY)

AR can generally be defined as the enhancement of a real-world environment using layers of computer-generated images through a device. It is believed that AR is the part of VR. AR and VR are related, and it is valid to consider the two concepts together. In the same paper on mixed realities, AR and VR should be

viewed as lying on different ends of reality-virtuality continuum where one end consist of solely real-world objects and other end consist synthetic objects (Guttentag,2010)

AR adopts a different approach towards physical spaces, it embeds digital inputs virtual elements into physical environment, so it enhances it. It is specially mergers the physical with the virtual world. The end outcome is a spatially projected layer of digital artifacts medicated by devices examples smart phone, tablets, glasses, contact lenses etc. Moreover, AR can also be implemented in VR headsets with pass-through mode capability by displaying input from integrated camera sensors (Wyld,2010)

The most widely used augmented reality applications and software work seamlessly on smartphone. they help users to access a digital augmented world in few simple processes. All they need to do is to switch on their smart phone cameras, view the world around them on the phone screen and depend on the AR app to enhance the experience of viewing the real world (torn Diack ,2016).

Today, a plethora of devices can support AR and the list is constantly growing. This includes screens glasses handy devices and head-mounted display. It is evolved as one of the fastest expanding XR technologies and major reasons for this is widescale accessibility. The technology is so widely used that at present one can easily find big volume of consumers having a tool giving to AR right in their pockets (Han, 2016)

Ever since the growth of augmented reality technology, there are discussion on different types of digital augmentation reality that can be explore. The different of AR are 1) Marker- based AR ,2) Marker less AR,3) Superimposition -based AR,4) Projection-based AR 5) Location- based AR

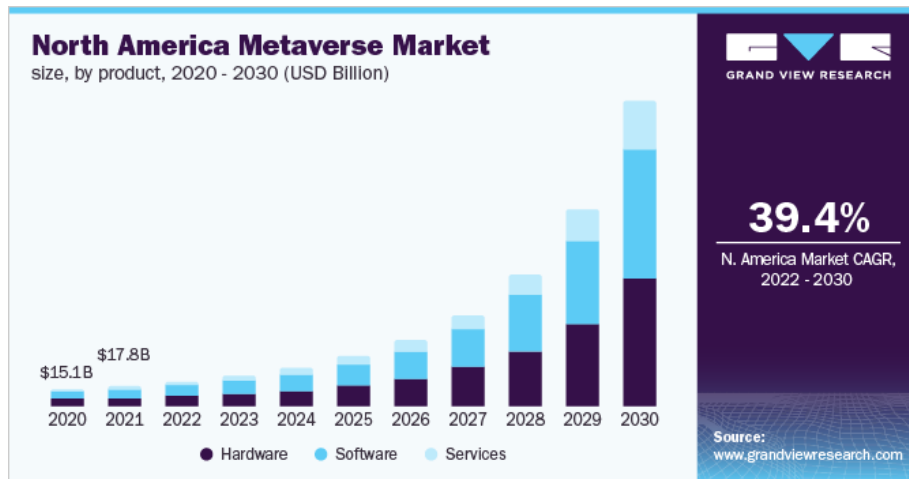
AR & VR INTERPLAY

As a technology, the metaverse would combine different aspects of AR and VR The space and time on a metaverse app would appear like the real world. When we interact in the physical world visual, auditory, and dynamic exchange happen the metaverse platform is believed to make a similar experience possible in the digital world to facilitate digital collaboration.

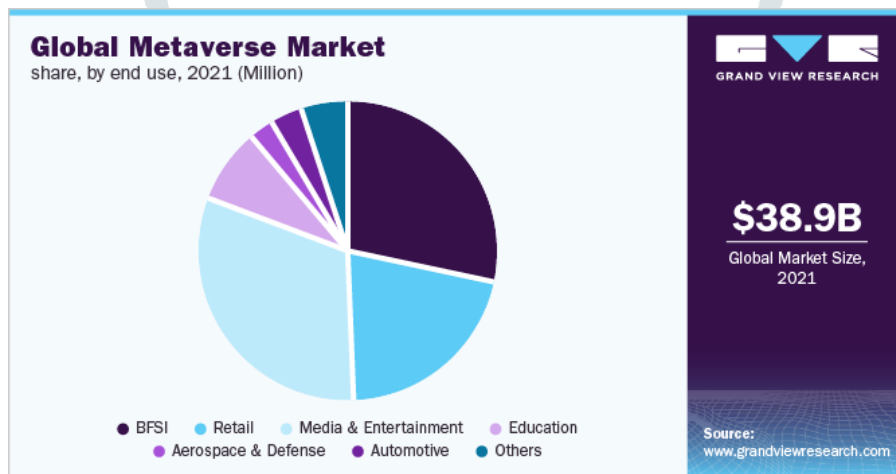
RESEARCH METHOLOGY: -

The metaverse itself will serve both as a tool and a product of market research. **Surveys, interviews, and even ethnographic recordings can be done virtually, taking all real-world processes into augmented reality.** Screening and verification of data will again be the primary concern to maintain authentic data. This research is qualitative research 93 documents were accessed in the Web of Science database, 1560 different sources and a totally of 1855 different references were used in 93 documents. It has been seen that related studies have been carried out by 155 different authors, 29 different countries, and 96 different organizations. Which helped the people to find their own interest as metaverse is very large topic and most of the people believe in fast technology and metaverse. The metaverse is a kind of imagined world with immersive digital spaces that increases ,allowing a more interactive environment in educational setting .The metaverse is the expansion of the synchronous communication that embraces an effective number of users to share different experiences .empathy is at core of human centred design and design thinking being able to put oneself into someone else shoes truly immersing into the subject matter , discovering the actual issues to be solved is crucial to successful problem finding and problem solving. Virtual reality also includes various methodology like assignment phase, analysis phase, creation phase, testing phase etc.

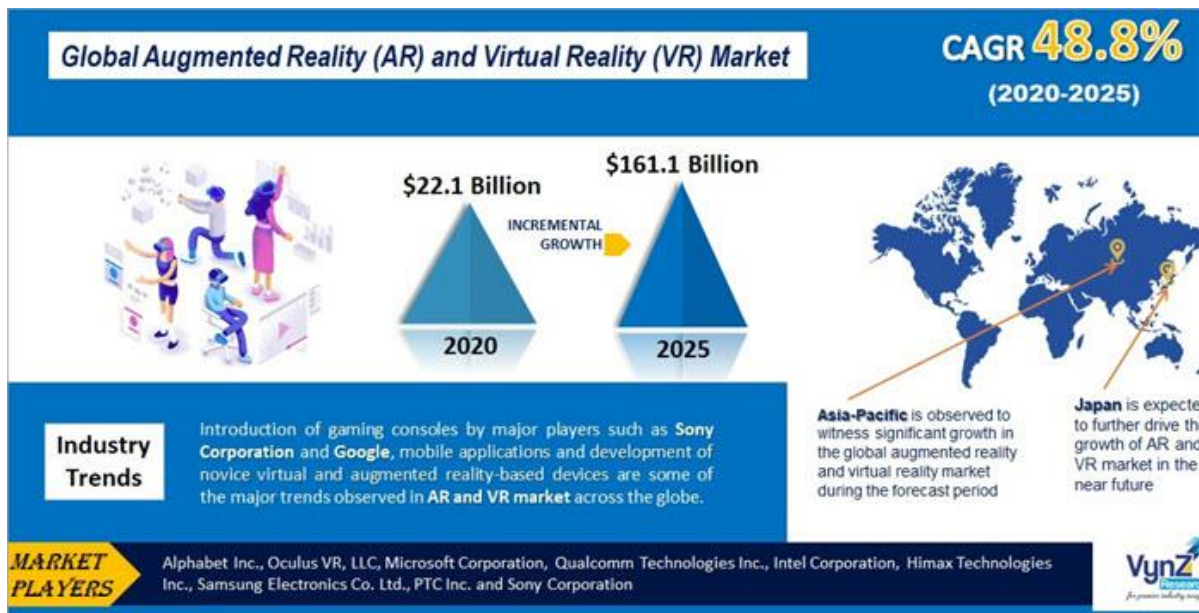
ANALYSIS AND DISCUSSION: -



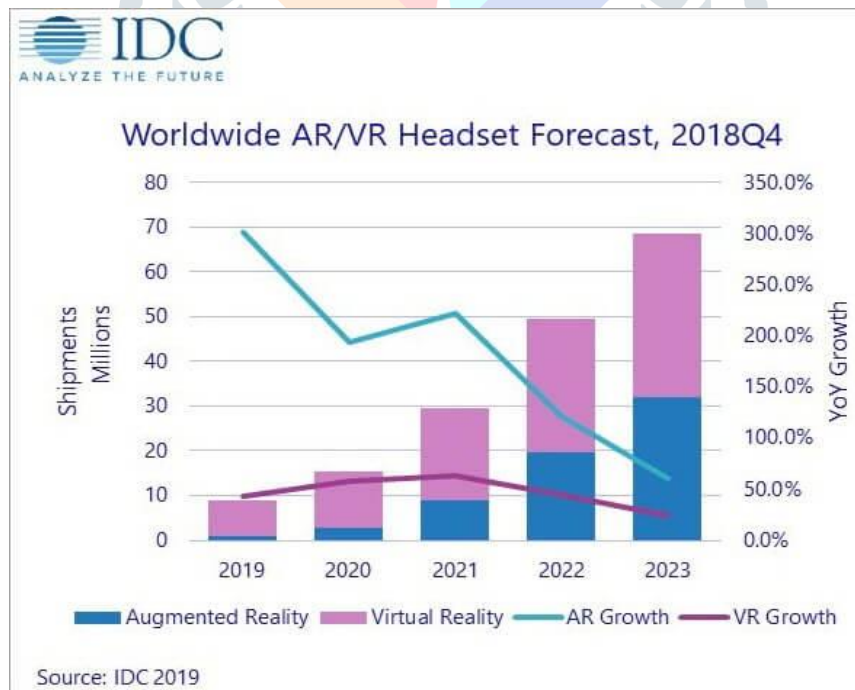
The above trend shows that the market of metaverse rise to 39.4% by 2030 as compared to the trend shows in year 2020. Major factors expected to drive the revenue growth include a growing focus on integrating digital and physical worlds using the Internet, increasing Momentum



The above trend shows, due to increase in the gaming industry the media and entertainment zone section is quite large and it is assumed that the revenue is around 31% of all other section. It was the platform's largest in-game concert. Based on end-use, the global market for metaverse is divided into Banking, Financial Services, and Insurance (BFSI), retail, media and entertainment, education, aerospace and defence, automotive, and others.



The above trend shows the huge difference usage of AR and VR in 2020 and 2025 which will be going to change the life as it is increase of 48.8% and also there is large difference in their revenues and by the end of 2025 the market of AR and VR will be accepted by large population and it will be in increasing manner.



The above trend shows us the usage of AR and VR since 2018. According to the image the use of virtual reality is huge because the hardware which is used is generally large as the graphics are very high which are used in headset while playing the games.

Now let's talk about the advantages of AR and VR: -

First one AR and VR teaches creates rich, immersive, and interactive environments for users' inspiration is most important reasons companies hire VR and creates brand for their company and taking VR into consideration it will increase standard of technological forefront and in the same way AR gives users to published content that they augmented. The main advantage of AR and VR is that it creates such values through personalized content and new business model.

The quality of AR and VR content brings your product presentation in such a way that it looks like another level according to me it is the best way to represent your products or service which will attract the customers to try and experience new product in new ways which will create emotional connection with the product.

Virtual Reality and augmented Reality are one of most trending channels for creating brand awareness as they have their own personalized characteristic of social media platform, yet customers can experience this in an immersive and interactive way from their own perspective. With the help of AR and VR brands can strongly build their online presence by harnessing the power.

Augmented and Virtual Reality solutions integrate analytics of the web and the social media which provides the real value in understanding your users' preference and behaviour. Once the deep analytics is done then there are endless opportunities

CONCLUSION: -

The metaverse is marketing a rapid entry into our lives with the current technology developments. People's desire to share experience and the life of society will increase with this virtual reality worlds. Privacy and security threats are examined, and authentication mechanisms are compared in this study. Biometric authentication is strong but biometric data must keep secure. Multi-model authentication seems the most reliable method of all. Authentication does not seem to have been sufficiently over emphasised in the context of VR. The issues of how the authentication process can best be integrated into VR environments and how it can work for the users while wearing VR glasses should be considered. The combination of eye-gaze knowledge and information-based authentication in this area promise a future. There is a need for more detailed studies on the concept block chain and smart contract based decentralised techniques can be used to enhance the integrity of data and ensure the artificial techniques are being used as it should. It seems that the world of the Metaverse is now clearly coming. This world can harbour both benefits and harms as expected. Just as social media has good and bad sides, the metaverse also has good and bad sides. The hotspot is the usage area. Of course, these issues will be discussed in many scientific studies. Despite the increasing interest of researchers about the metaverse, there are few explanatory and comprehensive studies about a metaverse in the literature. However, it is thought that this situation will increase especially in recent years with the developments in blockchain technology, sensor technology, the advancement of augmented and virtual reality technologies and at end we can say that metaverse, AR, VR is only the future of coming years, and this will also change the whole world once everyone starts using it.

REFRENSSES: -

- 1) Kutanoglu, P., Akdik, B., & Kara Arslan, E. (2022, September 14). *Security of Virtual Reality Authentication Methods in Metaverse: An Overview*. arXiv.org. Retrieved October 15, 2022, from <https://arxiv.org/abs/2209.06447>
- 2) *Metaverse Market Size, Share, Trends, Analysis and Forecasts By Vertical (BFSI, Retail, Media and Entertainment, Education, Aerospace and Defence, Manufacturing, Others), Component Stack (Hardware, Software, Services), Region and Segment 2022-2030 - Market Research Reports & Consulting | Global Data UK Ltd.* (2022, October 6). Market Research Reports & Consulting | Global Data UK Ltd. Retrieved October 15, 2022, from <https://www.globaldata.com/store/report/metaverse->

[market-analysis/?utm_source=google&utm_medium=ppc&utm_campaign=18500058876&gclid=CjwKCAjw7p6aBhBiEiwA83fGuoyTIKpBF4MfgtkISTIlwVeo2q4hk3XWR0-jR9kuUvzMgGfDXdfWshoCPgUQAvD_BwE](https://www.jetir.org/analysis/?utm_source=google&utm_medium=ppc&utm_campaign=18500058876&gclid=CjwKCAjw7p6aBhBiEiwA83fGuoyTIKpBF4MfgtkISTIlwVeo2q4hk3XWR0-jR9kuUvzMgGfDXdfWshoCPgUQAvD_BwE)

- 3) an, D. I. D., Bergs, Y., & Moorhouse, N. (2022, March 15). *Virtual reality consumer experience escapes: preparing for the metaverse - Virtual Reality*. SpringerLink. Retrieved October 15, 2022, from <https://link.springer.com/article/10.1007/s10055-022->
- 4) *Metaverse: the future of immersive training | Emerald Insight*. (2022, April 1). Metaverse: The Future of Immersive Training | Emerald Insight. Retrieved October 15, 2022, from <https://www.emerald.com/insight/content/doi/10.1108/SHR-02-2022-0009/full/>
- 5) DAMAR, M. (2021, December 31). *Metaverse Shape of Your Life for Future: A bibliometric snapshot*. Metaverse Shape of Your Life for Future: A Bibliometric Snapshot. Retrieved October 15, 2022, from <https://dergipark.org.tr/en/pub/jmv/issue/67581/1051371>
- 6) N Amanullah, M. F., & Mulki, M. (2022, April 14). *Know More Metaverse as The Technology of The Future | International Journal of Research and Applied Technology (INJURATECH)*. Know More Metaverse as the Technology of the Future | International Journal of Research and Applied Technology (INJURATECH). Retrieved October 15, 2022, from <https://ojs.unikom.ac.id/index.php/injuratech/article/view/6915>
- 7) *(Virtual Reality Based Metaverse of Gamification, n.d.)*
Full Citation: *Virtual Reality based Metaverse of Gamification*. (n.d.). Virtual Reality Based Metaverse of Gamification. Retrieved October 15, 2022, from <https://ieeexplore.ieee.org/abstract/document/9753727/>
- 8) ARİN, N. G. (2021, December 31). *A Content Analysis of the Metaverse Articles*. A Content Analysis of the Metaverse Articles. Retrieved October 15, 2022, from <https://dergipark.org.tr/en/pub/jmv/issue/67581/1051382>
- 9) Mystakidis, S. (2022, February 10). *Encyclopaedia | Free Full-Text | Metaverse*. MDPI. Retrieved October 15, 2022, from <https://www.mdpi.com/1492130>
- 10) Heng, R., Wu, N., Chen, S., & Han, B. (2022, January 30). *Will Metaverse be NextG Internet? Vision, Hype, and Reality*. arXiv.org. Retrieved October 15, 2022, from <https://arxiv.org/abs/2201.12894>