



THE UTILIZATION OF VR TECHNOLOGY IN BUSINESS

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ABSTRACT

THE UTILIZATION OF VR TECHNOLOGY IN BUSINESS

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Abstract

Digitalization is the key to success in all aspects of life, including business. Adapting to this digital age will be a great benefit. Initially, globalization has made all people in this world connected, technology facilitates interaction between people in carrying out all kinds of activities. Then it was developed more sophisticated as we know it as Industry 4.0, where it changed the pattern of people in activities such as shopping, working, traveling and other activities. In its development, technology always paves the way for something to be more efficient and effective without having to spend more energy, thoughts and money. Virtual reality or VR is one answer to how technology can cut all the costs involved in operating a business and reaching a wider market. At first this technology was focused on providing more experience for people in playing games. But over time, VR is developed so that its utilization becomes wider, one of which is in business. On this occasion, the writer in this paper will explain what virtual reality is, discuss how VR is developing now and explain how bright the prospect of using VR is in the business sector. How now many companies around the world have started to use VR in operating their business.

Keywords: Digitalization, business industry, Industry 4.0, virtual reality, technology

INTRODUCTION

Technology and information industry development in this era are the main contributor upon how various things developed rapidly. What is called as the *Industrial Revolution 4.0* is able to change all aspects of people's lives from behaviour patterns, lifestyles, how people shop to meet their needs, work methods and financial transactions, business opportunities with various complexities of adaptation and transformation of life experiences in the daily activities of people around the world. Forbes contributor Bernard Marr explained that industrial revolution integrates cyber technology and automation technology. the fourth industrial revolution will take what was started in the third with the adoption of computers and automation and enhance it with smart and autonomous systems contained by data and machine learning.¹

For several years, VR has become an interesting technology to see its development in the technology industry. in an article written by Jonah Vanian mentions that Facebook currently has spent 3 billion dollars on VR development, including Mark Zuckenburg's decision to buy a VR oculus in 2016 of 2 billion dollars, one of the prestigious start-ups that developed VR technology.² And not only Facebook, some big companies like valves, HTC also allocated billions of dollars in funds for the development and production of VR in a big way to gain a fairly large market share, despite the fact the absence of a strong VR application ecosystem development. the game, which is the only strength of the VR market power; but still, in the end, there has not been a game breakthrough that has so convinced the market.³

but over time, especially the current world condition where the pandemic is a big problem that the world had to face as it is screwing up the wheels of the global economy. we inevitably have to adapt so we can continue to run the business and economy for the sake of being able to continue living. innovation is needed especially in order to adapt to the new norms which are widely echoed, therefore on this phenomenal basis, virtual reality (VR) offers solid

¹ Marr, Bernard. *What is Industry 4.0? Here's A Super Easy Explanation For Anyone* <https://www.forbes.com/sites/bernardmarr/2018/09/02/what-is-industry-4-0-heres-a-super-easy-explanation-for-anyone/#65ac7479788a>

² Nick ,Mike Isaac. (2017) Mark Zuckerberg, in Suit, Testifies in Oculus Intellectual Property Trial. Taken from: https://www.nytimes.com/2017/01/17/technology/mark-zuckerberg-oculus-trial-virtual-reality-facebook.html?ref=business&_r=1

³ Cortese, AJ. (2019) HTC to Focus on VR Development Instead of Hardware in Future. taken from: <https://pandaily.com/htc-to-focus-on-vr-development-instead-of-hardware-in-future/>

options for video calls and those who adopt them can decide to maintain virtual communication as a long-term strategy without having to hold physical contact.

Tony Parisi in his book titled *Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web, and Mobile* explained that Virtual reality (VR) is the medium with tremendous potential, the ability to be transported to other places, to be fully immersed in experiences, and to feel like you're really there present. Opens up previously unimagined ways to interreact and communicate⁴.

This is in line with the biggest advantage of the media that we can experienced, which is its ability to make individuals feel as if they are in the same space together, without having to go for travel and having more costs to do it. Therefore, in this paper the author will explain regarding the utilization of VR in business.

VR: the trend and why it is important for business

VR's big goal is to deceive the five human senses so that the user can believe he is in a real environment. VR technology has become quite cost-effective to be commercially viable and is increasingly being applied to a variety of circumstances and to many people. In 2015, the trend of VR was quite popular but there are some obstacles that need to be addressed that time such as the technical limitations in power, image resolutions, communication bandwidth (data communication). Other issues which need to be addressed include users, interaction, user effects, technology and most important thing, the cost.

As the time goes by, those issues were gradually solved that more effective and cheaper technology could be applied as Today, businesses and consumers believe that it is very important to see and experience things that cannot be physically present. In addition, they believe in imagining layers of virtual data into real-world environments, creating deeper and more significant experiences. Therefore, technology for VR is utilized to solve it.⁵

VR is expected to become an important technology in the future. It is hoped that the VR industry will surpass \$ 1 billion by the end of this year and will be a staggering market of

⁴Parisi, Tony. 2015. *Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web, and Mobile* 1st Editio. Page- 2

⁵ Nabil alih sahih in the journal titled "review of virtual reality trends (previous, current and future diretions) and their applications, technologies and technical issued. Journal of engineering and applied science

\$ 150 billion by 2020. Nearly 80% of leading technology companies have invested in VR and this number will only continue to grow. The game industry has become the most popular domain, which uses VR, but the technology is no longer limited to this industry. We will see a huge increase in the use of VR by various other industries, such as real estate, business, marketing, etc.⁶

How does VR work?

“Virtual reality is able to effectively blur the line between reality and illusion, granting us access to any experience imaginable”.

- Jeremy Bailenson, *Experience on Demand: What Virtual Reality Is, How It Works, and What It Can Do*⁷

Before stepping further into the discussion of virtual reality utilization for business, let us see how this technology works so that we could know how essential this for the development of business industry is. VR headsets use what is called a combination of lenses and LCD screens to create a deep illusion. The resulting 3D stereoscopic images mimic how our eyes naturally work together to see the world. Unlike images that appear on a TV or computer screen arranged in a frame or screen boundary mounted there, images on VR wrap you up, giving you a more natural 100-degree field of view.

The head tracking system senses the movement of the wearer and changes the image. So, let say if you are in an Old Trafford stadium of Manchester and wanted to look around, see the stands on the opposite side, you just have to turn your head to the side to see other parts of the stadium. Kevin Powel in his article also said that there are many features that can be improved in order to add a more interesting experience. like embedding text or comments that explain the sides in the video⁸.

⁶ *Virtual Reality And Its Impact On Business* <https://www.flatworldsolutions.com/IT-services/articles/virtual-reality-impact-on-business.php>

⁷ Jeremy Polin, *Experience on Demand: What Virtual Reality Is, How It Works, and What It Can Do*

⁸ Stuart & parker (2017) *How Virtual Reality is Transforming the Business of Selling Homes*. Retrieve from: <https://www.struttandparker.com/knowledge-and-research/how-virtual-reality-is-transforming-the-business-of-selling-homes>

VR Utilization in Business

In this section, the author will discuss some business industries that had applied the virtual reality (VR) and utilized them in order to gain advantage and benefit from running their business, there are various of business industries that already utilized VR, however in this case, the author will pick some big industries to be discussed that they use VR in their business operation and mentioned the company and explained in brief how their strategy and mechanism they applied in using VR to operate their business.

How VR is used in the Property Business

VR has revolutionised the selling process for luxury properties, particularly for off-market properties and overseas investors. With virtual reality, distance doesn't matter. You can offer the same experience to a client in London and a client in Hong Kong. The core job of a real estate agent is to help the seller get the highest selling price in the shortest time possible. Many realtors and homeowners see a home staging with furniture and decoration as a core part of the sales process, considering that it can help increase the impression of a prospective buyer about the home. Realtors are beginning to embrace technological advancements such as virtual reality in staging.⁹

Virtual reality (VR) has been used in many other domains but is increasingly being used in real estate space as a tool to help prospective home buyers tour homes and imagine themselves in the houses. With a VR headset, prospective buyers can move around a house and get a feel for how the space flows and the rooms link together. They can explore all the decorative details that may be missed on a photograph and get a much better idea of room sizes and ceiling heights¹⁰

One of the start-up that run business property and utilizing VR is the Chinese start-up named Beike. During the pandemic of Covid 19 where china used to be the epicentre of the virus, many industries are struggle so hard to survive. This condition urged them to create the innovation until they came up with the idea by using VR in selling houses. they have developed VR to let potential buyers and renters take virtual 3D tours of homes and apartments on the

⁹ Brenner, Alexander, (2017) *Virtual Reality: The Game Changer for Residential Real Estate Staging through Increased Presence*

¹⁰ Ibid

market. With almost 4 million houses currently available on its VR platform and 660 million people using it, the platform that they used also enables homebuyers to sign contracts and complete transactions online without having to go to the store or exhibition.¹¹

However, what is interesting is the fact that “Virtual reality isn’t intended to sell houses,” Kevin explains. “It’s more about streamlining the process and affirming leads. If someone comes into the office to use the VR headset or have experienced the model online and still wants to view the property, it’s likely they’ve got a strong interest in buying.” Another source also told that Although staging does not appear to impact the sale price of the home, agents, homebuyers, and homeowners all incorrectly believe that staging will indeed increase the price of a home.¹²

VR utilization in automotive industry: selling through VR experience

Some car dealer-company also started to use VR to enhance their profit and expanding their market. One of them is Vroom, a used car retailer and e-commerce company based in New York City that provides consumers to buy, sell and buy cars online. Vroom has created a virtual reality showroom that allows users to see car models from the comfort place of their homes. The shopping experience allows users to use HTC Vive, review and test their favourite vehicles.¹³

Another cases, the car comparison website, Car Wow, recently launched the 'Delivery and Disinfection' initiative, which allows dealers to promote their remote services, including home test drives, virtual tours using VR, and contactless purchases. The idea of launching this initiative was based on An independent survey of 1,000 motorists carried out on March 17 showed that despite the coronavirus crisis there is still a strong appetite among people to change their cars, with 54 per cent intending to change theirs in the not-too-distant future, and that figure leaping to 70 per cent in Greater London¹⁴

¹¹Junfeng, zheng. (2020) *How are VR and live streaming helping China's housing market during the epidemic?* <https://news.cgtn.com/news/2020-03-05/VR-and-live-streaming-help-China-s-housing-market-during-the-epidemic-OCdBBO7SCI/index.html>

¹² Lane, M. A., Seiler, M. J., & Seiler, V. L. (2015). The Impact of Staging Conditions on Residential Real Estate Demand. *Journal of Housing Research*, 24(1), 21–35.

¹³ Vroom Set to Reach \$1 billion in Car Sales with VR Showroom <https://www.startbeyond.co/blog/vr-car-sales>

¹⁴ Carwow launches 'Delivery & Disinfection' remote-buying service to allay coronavirus fears and boost sales derived from: <https://cardealermagazine.co.uk/publish/carwow-launches-delivery-disinfection-remote-buying-service-allay-coronavirus-fears-boost-sales/188097> accessed in 4 may 2020

VR for Retail business

Some retail companies started to use VR and AR. VR users provide detailed patterns about which areas or products attract the attention of existing visitors. This allows retailers to test and improve the appearance, signage and layout of their stores to maximize the experience and expenditure of consumers. VR also allows buyers to explore products in a way that is similar to life. In 2016 Ikea launched its Virtual Reality Kitchen Experience in Australia to help customers discover kitchen features and imagine how they would feel in their own home. The Swedish retailer is using HTC's Vive headset for the Ikea VR Experience, which will allow potential customers to build their own kitchen and even walk around it.¹⁵

Conclusion

in the end, digitalization will be an obligation for each of us to understand, in this era all kinds of physical contact as much as possible to be reduced, all kinds of costs such as energy, time, as much as possible to be minimized in doing all kinds of activities such as shopping, attending an event and meetings and other things. VR technology has the ability to be able, it can be said to deceive our five senses, make us as if we were somewhere. in business, how customers look, feel, experience, will be important before they finally decide to buy, or make him believe that the item is worth more. This VR will be very important for business development, not only to convince many customers to buy a product, but also make them feel from what they see and feel, that this item has high value and is very worth it to buy. however, there are several things that still need to be resolved in the utilization of VR in the business sector. The cost still quite pricey and the connection problem also need to be addressed. Some countries were quite prepared to face the all new fastest internet connection like 5.0 G. but some countries still find it difficult to catch up to. This also affecting the expansion of the market for their products to be sold.

¹⁵ IKEA is bringing virtual reality to its Australian stores, <https://www.businessinsider.com.au/ikea-is-bringing-virtual-reality-to-its-australian-stores-2016-4>

REFERENCES

BOOK:

Bailenson, Jeremy. (2018) *Experience on Demand: What Virtual Reality Is, How It Works, and What It Can Do*. Published by W. W. Norton & Company; 1 edition (January 30, 2018)

Claudia, Timothy,. 2019 . *Augmented Reality and Virtual Reality: The Power of AR and VR for Business (Progress in IS)* Springer; 1 edition (February 19, 2019)

Parisi, Tony. 2015. *Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web, and Mobile 1st Edition*. Published by O'Reilly Media; 1 edition (November 20, 2015)

JOURNAL:

Brenner, Alexander Julian, "Virtual Reality: The Game Changer for Residential Real Estate Staging through Increased Presence" (2017). CMC Senior Theses. 1471.
http://scholarship.claremont.edu/cmc_theses/1471

Lane, M. A., Seiler, M. J., & Seiler, V. L. (2015). *The Impact of Staging Conditions on Residential Real Estate Demand*. Journal of Housing Research, 24(1), 21–35.

Nabil, sahih. (2018) in the journal titled “*review of virtual reality trends (previous, current and future directions) and their applications, technologies and technical issued*”. Journal of engineering and applied science February 2017

WEBSITE:

Carwow launches ‘Delivery & Disinfection’ remote-buying service to allay coronavirus fears and boost sales derived from: <https://cardealermagazine.co.uk/publish/carwow-launches-delivery-disinfection-remote-buying-service-allay-coronavirus-fears-boost-sales/188097> accessed in 14 may 2020

IKEA is bringing virtual reality to its Australian stores, <https://www.businessinsider.com.au/ikea-is-bringing-virtual-reality-to-its-australian-stores-2016-4> accessed in 13 may 2020

Junfeng, zheng. (2020) How are VR and live streaming helping China's housing market during the epidemic? <https://news.cgtn.com/news/2020-03-05/VR-and-live-streaming-help-China-s-housing-market-during-the-epidemic-OCdBBO7SCI/index.html> accessed in 13 may 2020

Vroom Set to Reach \$1 billion in Car Sales with VR Showroom taken from: <https://www.startbeyond.co/blog/vr-car-sales> accessed in 13 may 2020

VIRTUAL REALITY AND ITS IMPACT ON BUSINESS taken from: <https://www.flatworldsolutions.com/IT-services/articles/virtual-reality-impact-on-business.php> accessed in 14 may 2020

Stuart & parker (2017) *How Virtual Reality is Transforming the Business of Selling Homes*. Retrieve from: <https://www.struttandparker.com/knowledge-and-research/how-virtual-reality-is-transforming-the-business-of-selling-homes> accessed in 13 may 2020

Marr, Bernard. *What is Industry 4.0? Here's A Super Easy Explanation For Anyone* <https://www.forbes.com/sites/bernardmarr/2018/09/02/what-is-industry-4-0-heres-a-super-easy-explanation-for-anyone/#65ac7479788a> accessed in 12 may 2020

Nick ,Mike Isaac. (2017) *Mark Zuckerberg, in Suit, Testifies in Oculus Intellectual Property Trial*. Taken from: https://www.nytimes.com/2017/01/17/technology/mark-zuckerberg-oculus-trial-virtual-reality-facebook.html?ref=business&_r=1 accessed in 12 may 2020

Cortese, AJ. (2019) *HTC to Focus on VR Development Instead of Hardware in Future*. taken from: <https://pandaily.com/htc-to-focus-on-vr-development-instead-of-hardware-in-future/>