

Financial planning will soon incorporate virtual reality

Xin Wang^{1, *}

¹ University of Delaware, Newark DE 19707, USA

*Corresponding author: wangxin@udel.edu

Abstract. Even before the epidemic, more and more people were making use of technology to assist with their financial planning. The financial planning business has been fast to adapt to the new standard, and as a result, many organizations now offer remote services and virtual meetings. The technology behind virtual reality (VR) is still in its infancy, with HTC, Oculus, and Sony producing the majority of the most popular VR headsets now available. Virtual reality currently has a wide range of applications, but one particularly promising one is in the field of financial planning. Virtual Reality is useful for financial planning, and it has many benefits for customers. It has been used in gaming, health-like simulations, and product demonstrations. The research will discuss, the demographics that appeal to virtual reality, the applications of virtual reality, and how financial planning can benefit from the technology.

Keywords: Virtual Reality; Financial planning; Consumer behaviour; Corporate training.

1. Introduction

People's adoption of technology sped up because of the crisis. The shift to virtual meetings is analogous to the world of financial planning. Even after returning to the workplace, customers are more open and often initiate an online encounter. A shift is happening where people now see benefits to holding meetings online. In addition to helping prevent the spread of a viral epidemic, technological advances have made its use more convenient. Financial planning involves a lot of personal interactions and the use of various software tools. The pandemic has forced the industry to re-evaluate how they do business and how it can better serve its clients. Consumer behaviour towards convenience and technology has been forever changed, and the financial planning industry will have to adapt or risk becoming irrelevant. The use of technology in financial planning has been on the rise even before the pandemic.

Portfolio management software, client portals, and automated investment platforms have been gaining popularity in recent years. The pandemic has accelerated this trend as people are now more open to trying new things and are less hesitant to trust technology with their finances. The financial planning industry has quickly adapted to the new normal, and many firms are now offering virtual meetings and remote services. This is a great way to continue serving your clients while protecting their health. Virtual reality (VR) technology is still in its early stages, with the most popular headsets being from HTC, Oculus, and Sony. While there are many applications for VR, the potential for its use in financial planning is significant. There are several potential applications for VR, including in the realm of personal finance. Due to its wide client-based benefits for customers and financial advisers, virtual reality is quickly becoming the standard in financial planning.

2. Consumer Behaviour and Virtual Reality

As fully immersive VR systems hit the mainstream market, businesses are keen to learn more about how customers act while making purchases in the medium. High-immersion VR settings can significantly alter consumer choosing behaviour compared to online purchasing due to their ability to generate a compelling illusion of realism to the senses [1]. Customers in high-immersive VR are less price-sensitive and more open to trying new things. Their surroundings may influence customers' actions more in highly immersive settings than in less engaging environments. This suggests that virtual reality can help support behaviour shifts in consumer sectors to less intense situations [2]. Examples include research showing that showing a video in virtual reality (VR) leads to more positive

consumer behaviour than showing an identical film on a desktop computer. Therefore, the future of market research may see an increase in the use of VR to study consumer behaviour.

3. Capable Application of Virtual Reality

3.1 Virtual Reality Can Improve Customer Service with Service Providers

3.1.1 Client interaction

There are a few keyways that VR can be used in financial planning. The first is client interaction. In the past, most interactions between financial planners and clients were done in person. This allowed for a more personal connection and understanding of the client's needs. The use of virtual reality can assist financial advisors in becoming more convincing and aggressive. According to Bardi, "Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience"[3]. Users can participate with the technology designers' creation of the virtual world, which offers a more multisensory experience than watching television. Not only is virtual reality implemented in VR games, but it has also shown promise in other domains. Therefore, effective communication is a critical target in utilizing virtual reality capabilities. Communication with the client is a number factor in creating lasting relationships. With stiff competition in every industry, having better ways to communicate with customers gives companies a leg up on their competition[3]. A growing number of individuals are becoming aware of the significance of financial planning, and VR attracts a significant percentage of clients to the field of financial planning. As a result, economic zones need to enhance their capabilities and equip themselves with instruments that are more effective in order to keep their existing customers and attract new ones.

Customers will be assisted in the formulation of a plan through financial planning, which will include all aspects of their finances, including retirement, savings, and investments, and will reduce the likelihood of adverse outcomes. It's similar to getting ready for a trip in that you can encounter roadblocks along the way, like losing your job or having to pay a lot of money, but if you plan ahead carefully, you can get where you need to go without too much trouble[4]. Virtual reality offers real-time personal interaction with customers, which is impossible with other methods. Research maintains that customers may strongly identify with a company that first listens well and satisfactorily handles their issues and needs. According to a study, up to 70% of people will do business with the company again if they feel that the customer service is excellent[5]. Customer service is critical to business success, particularly in banking institutions' financial planning services.

3.1.2 Corporate training

Another way that virtual reality can be used in financial planning is through corporate training facilities. New employees must be adequately trained on their software and products. In the past, this was done through boring lectures and PowerPoint presentations[6]. Also, most financial planning companies rely on in-person training for their employees. With VR, employees can be placed in a simulated environment where they can learn the ropes fun and interactive. This will help to engage employees and make the learning process more enjoyable. In addition, VR can be used to teach financial planning concepts to customers[7]. As a result, customers will be more interested in and knowledgeable about the company's offerings. There are many ways to use virtual reality to make a persuasive presentation. Financial advisors can use VR to explain developments in a way that is easy for customers to understand[6]. They can also use VR to show customers how the products work and how they can benefit from them. Additionally, VR can be used to create a simulation of the customer's financial situation. This will help to show the customer how the products and services offered by the financial advisor can help to improve their financial situation.

Virtual reality is increasingly being used in institutional settings, such as schools and universities, to facilitate learning. The use of such tools in corporate training is already being used by several businesses. Many Fortune 500 firms, like Boeing, UPS, and Walmart, are incorporating VR into their employee training and development programs. UPS employs virtual reality headsets from HTC Vive

to raise safety consciousness amongst drivers. Morris claims that "you can train people faster" and that "people learn faster" in a virtual reality setting. People will be able to acquire new knowledge and abilities more quickly, which will boost business productivity. As the market leader in virtual reality (VR) training, Walmart has implemented VR in 220 of its Walmart Academies across the United States. With the help of almost 17,000 Oculus Go standalone headsets, workers can better themselves by gaining knowledge about cutting-edge technologies. Incorporating VR into their training program led to a 15% boost in passing rates at Walmart's assessments[8].

According to Tyson Foods, "their VR-based overall safe operation awareness program has resulted in a 20 percent year-over-year decline in accidents and illnesses"[8]. Businesses don't just rely on VR, though; they use a wide variety of other technologies as well. When it comes to installing the airplane's power lines, Boeing prefers to use augmented reality since it gives specialists hands-free, engaging 3-D blueprints. Since Virtual Reality has so many uses in the business world, it should be considered a new resource in the realm of financial management[7]. And it's not just a theory; virtual reality is already being used by certain businesses in other sectors, with promising implications for the future of the economy.

3.2 Data Visualization

As the financial business grows increasingly sophisticated and there is increased data to evaluate, traders rely increasingly on the ability to display data to aid in making meaningful choices on financial planning. Virtual reality improves the experience's quality and reduces the time and effort required to process massive datasets. For instance, Oculus VR created and produces the Rift virtual-reality headset, which does data analysis in the cloud. In addition, users can easily manipulate their data file in "an immersive 3D augmented world" using only their headphones[9]. It would be beneficial for the financial planner to use an Oculus Rift headset to process and evaluate data for financial planning purposes.

In addition, virtual reality can also help with data visualization by providing a realistic view of what the data looks like. For example, suppose a financial planner was trying to visualize how a particular stock might look over time. In that case, they could use virtual reality to create a three-dimensional store representation. This would allow the financial planner to understand better what the data looks like and how it changes over time. Virtual reality can also be used to create simulations of different scenarios. For example, if a financial planner wanted to see what would happen if they invested in a particular stock, they could make a simulation of that stock using virtual reality. This would allow the financial planner to see what the potential outcome of their investment might be. Salesforce has developed a 3D immersive environment using Oculus Rift for data analysis. Oculus Rift's technology has also been utilized by Fidelity Labs, a division of Fidelity Investments. Fidelity Labs created an application called "Visualize Your Portfolio," which allows users to view their investment portfolios in virtual reality[9]. Stock portfolios have been rendered a 3D city in a virtual world named "StockCity," allowing investors to fully immerse themselves in the information. The application is still in its early stages, but it has already shown to be a valuable tool for visualizing data.

Moreover, although data visualization is a powerful tool for financial planning, it has limitations[10]. One of the main limitations is that it can be difficult to understand complex data sets. Additionally, data visualization can also be limited by the available amount of data. For example, if a financial planner is trying to visualize a dataset with only a few data points, it might not be constructive. Another limitation of data visualization is that it can be challenging to see the relationships between different variables. For example, suppose a financial planner is trying to understand how two variables are related. In that case, they might have difficulty seeing the relationship if the data is not displayed clearly. Virtual reality's enhanced immersion and interactivity can be used to compensate for these shortcomings.

When it comes to data visualization, virtual reality can be useful thanks to tools like heat maps. Heat maps are a type of data visualization that uses color to represent different values. For example,

if a financial planner wanted to see how two variables were related, they could use a heat map. The heat map would show the relationship between the two variables using different colors to represent different values[10]. This would allow the financial planner to see the relationship between the two variables. Virtual reality can also be used to create simulations of different scenarios. This would allow the financial planner to see the potential outcome of their investment might be.

3.3 Benefits of Virtual Reality

The applications for Virtual Reality are vast. Firstly, VR can provide a more robust virtual experience and explanation to clients. Trust Bank, headquartered in Martin, Kansas, thinks virtual reality can aid consumers with money management, as reported by Adarlo[11].

A minimal savings rate, for instance, could lead to a filthy and sick society in the future. A higher rate of saving, however, will result in a more plush and sophisticated setting in which people can live. Having this information readily available aids with retirement planning[11]. It's an excellent resource for teaching clients about budgeting and setting goals for the future.

The second advantage of virtual reality in education is that it can be used to train new advisers with challenging simulated settings and customer interactions in VR[11]. Fidelity Labs has created Cora, a virtual "financial agent," based on research conducted by Adam Schouela "[11]. Cora can provide a wide range of financial services to customers and help advisers train for different types of customer meetings. For example, if an advisor is meeting with a customer for the first time, they can use Cora to practice the meeting. The advisor gets a feel for what the customer might be like and how they should act in the meeting. Additionally, if an advisor is meeting with a difficult customer, they can use Cora to practice dealing with the customer. As a result, a financial advisor can be better prepared for the meeting and understand how to deal with the customer.

3.4 Customer Demographics that VR Appeals To

When making financial projections, it's important to include a wide variety of clients. Customers of all ages, from children to retirees, make up Virtual Reality's large customer base. Teens and twenty-somethings are more open to trying out cutting-edge equipment since they are more curious and have more experience with virtual reality gaming. A deeper examination of the data collected by the Pew Research Center reveals that 92% of Youngsters own cell phones, and 85% of Generation X are between the years of 37 and 54 in 2019[12]. However, older adults can also enjoy virtual reality. A virtual reality experience can be used in a number of ways to help clients and advisers alike. Customers will be shown real-life instances of what to expect if they do not have enough money saved for healthcare following retirement via Virtual Reality[11]. Cora is helpful for seniors because it can be adapted to their level of cognitive ability. 2015 research on aging states, "the population of older adults (age 65 and older) in the globe is expanding at an unprecedented rate." This is supported by Virtual Reality for an Aging Society, which argues that VR is a promising tool for assisting the rising population of the elderly[13]. As a result, the society will seem increasingly small and confining to the growing number of elderly people who are unable to travel or even move freely. Even so, Virtual Reality can provide access to the kinds of imaginary destinations to which these individuals have long aspired, such as beaches and concerts. Customers of all ages are enjoying the many advantages of virtual reality. So, it's clear that the use of VR technology in retirement planning is essential as the elderly population continues to grow.

3.5 Challenges

Virtual reality skeptics argue that the general public isn't ready for personal finance in VR yet, hence the technology is doomed to fail. Mr. Jakotowicz cites driverless automobiles as an example of an area where people feel uneasy despite the fact that the vast majority of studies have shown that they are safer and more efficient than cars operated by humans[14]. There may be parallels between the resistance to adopting new technologies, such as Vr Technology and self-driving cars, despite their potential benefits. Clients may feel unease when VR is employed in personal finance.

Consequently, I concur that the fact that many people are resistant to trying out new technologies, such as autonomous vehicles, is a significant obstacle to Virtual Reality.

Financial institutions, however, are already making use of VR, and they include BNP Paribas, Citibank, and Wells Fargo. Macheel cites BNP Paribas as the initial illustration. Customers of this financial institution can perform a visual verification of their account and data[15]. Using artificial intelligence and other cutting-edge techniques, Citibank creates a variety of dynamic, interactive virtual products. Wells Fargo is the final bank standing. A virtual reality headgear, an elevated touch interface, and a teleconferencing system have all been in use within this institution for the past decade. In addition, the vast majority of people have already tried virtual reality games, which may bode well for widespread acceptance. As a result, attentiveness as a whole may be an issue, but many financial institutions are still attempting to address this.

4. Conclusion

To summarize, virtual reality is beneficial to the process of financial planning and offers a wide range of advantages to customers. On the other hand, Virtual Reality has a significant obstacle in the form of a lack of public acceptance in the field of financial planning. My hypothesis is that if the issue of poor public responsiveness could be resolved, a greater percentage of individuals will make use of virtual reality in the process of budgeting their finances. Consumers as well as money managers stand to benefit from the use of virtual reality. It offers business training centre in addition to catering to a large number of clients in the financial services industry. As a result, Virtual Reality is a valuable tool that ought to be utilized in financial planning. Regardless of its problems, such as lukewarm reception from the public, such as will be solved in the future. This emerging technology, known as virtual reality, needs additional time to investigate and accept. According to the findings of this study, virtual reality must be applied to the process of financial planning, and many industry professionals believe that virtual reality will play an important role in the economy of the future.

References

- [1] Meißner M, Pfeiffer J, Peukert C, et al. How virtual reality affects consumer choice. *Journal Of Business Research*, 2020,117: 219-231.
- [2] Taufik D, Kunz M, Onwezen M. Changing consumer behaviour in virtual reality: A systematic literature review. *Computers In Human Behavior Reports*, 2021, 3, 100093.
- [3] Bardi J. What is virtual reality? Marxent, 2019.
- [4] Chang J. What is financial planning? Northwestern Mutual, 2017.
- [5] Taufik D, Kunz M, Onwezen M. Changing consumer behaviour in virtual reality: A systematic literature review. *Computers In Human Behavior Reports*,2021, 3, 100093.
- [6] Martins B R, Jorge J A, Zorzal E R. Towards augmented reality for corporate training. *Interactive Learning Environments*, 2021: 1-19.
- [7] Bucea-Manea-Țoniș R, Andronie M, Iatagan M. e-Learning in the Era of Virtual Reality. In *The International Scientific Conference eLearning and Software for Education* (Vol. 1, pp. 363-369). " Carol I" National Defence University, 2018.
- [8] Morris C. Why Walmart and other F500 companies are using virtual reality to train the next generation of American workers. *CNBC*, 2018.
- [9] Rudenko E. Augmented reality is shaping the future of finance, 2018, *VentureBeat*.
- [10] Olshannikova E, Ometov A, Koucheryavy Y, Olsson T. Visualizing Big Data with augmented and virtual reality: challenges and research agenda. *Journal of Big Data*,2015, 2(1): 1-27.
- [11] Adarlo S. VR makes a comeback. *Financial Planning*, 2018, 48(8): 1.
- [12] Vogels E. Millennials stand out for their technology use, but older generations also embrace digital life. *Pew Research Center*,2021.
- [13] Virtual reality for an aging society. *WordPress*, 2018.

- [14] Virtual Reality: the next big thing in financial management? Senior financeadvisor, 2018.
- [15] Macheel T. How banks are using virtual reality. Tearsheet, 2017.