



Reimagining Financial Services Using Extended Reality (XR)

The financial services industry has adjusted its business models due to the pandemic's health and safety standards. Now, most of the financial services industry is evaluating emerging technology that can further innovate these new business models and improve the way they operate.

Imagine financial institutions offering customer services that use intelligent robots instead of human tellers. There is no physical branch, and customers visit a virtual environment to get the required service at anytime from anywhere. Or imagine complex financial data made available to customers through intuitive data visualizations on a virtual reality platform whenever required for making quick financial decisions.

This is not science fiction. The financial services industry is adopting the latest tech advances to keep up with customer expectations. The pace of technology innovations is increasing, and financial services IT (Information Technology) organizations are defining their priorities and positioning themselves to adapt as tech changes occur.

Financial services organizations are transforming their businesses by leveraging extended reality (XR) techniques with traditional interactions. XR includes all the tech tools that combine real and virtual environments, such as augmented reality (AR) and virtual reality (VR). Here we will examine some of the potential benefits and the challenges of adapting to this type of technology.

AR/VR Market Predictions and Current Usage

Both VR and AR have been around for some time. VR provides an immersive user experience in a virtual 3D environment, whereas AR enables users to overlay digital content, such as blueprints or instructions, onto real-world objects and receive visual, audio, or haptic (sensory touch) experiences from wearable technologies.

In 2016, Goldman Sachs projected that the AR/VR market would generate US \$80 billion per year in revenue by 2025.¹ That same year, Citi Research predicted that the total market could reach \$US2.16 trillion by 2035, which is also when they forecast half of smartphone users could replace their phones with AR technologies.²

XR technology is already widely used in gaming, education, and healthcare. Now the financial services industry is planning to leverage this technology to offer immersive experiences to their customers. Organizations have already started providing self-service options using robots, chatbots, and multimodal interaction-based kiosks to deliver information about products and services. Whatever new customer experiences firms choose to offer, competing in this massive new market will require taking on digital transformations that include XR technologies.

What Is Driving the Adoption of XR?

The ability to provide banking customers with XR-based experiences is greater than ever. Due to the latest innovations in mobile technology, every smart phone is now enabled with AR platforms ARKit (for Apple devices) or ARCore (for Androids), allowing nearly everyone across the globe to access.

These platforms enable a range of opportunities to interact with customers and improve internal operations. Through XR experiences, financial institutions have a greater ability to be more competitive in their markets, increased channels for cross-selling, and improved chances at customer retention.

Organizations are also using XR to help them with three tasks:

- Simplifying complex data analysis quickly
- Transforming payment systems
- Augmenting the physical branch with virtual branch services

Simplifying the Analysis of Complex Financial Data with 3D Data Visualization

Visualizing the complex data from multiple sources requires multiple screens, and sometimes it's practically impossible to view all the data at one time. AR technology solves this challenge by enabling users to view data on a virtual screen and in 3D.

For example, a few banks are using AR data visualization to improve the efficiency of financial trading by making the data available as a hologram that can be shared with others for faster and more collaborative decision making.

Each user wears an AR headset to view the information, and the AR application enables participants to analyze the data, communicate with one another, and gather additional data. In the future, we may even see the screens on trading floors replaced by 3D visualizations.

Another use case for AR is providing customers with a visualization of their credit card charges, allowing them to better understand and manage their spending patterns.

Transforming Payment Systems

When using a virtual reality application for gaming or virtual shopping, no one wants to be interrupted in the middle of a session to be prompted to make a payment. The payment system should be built into the service without creating any disruptions to provide a seamless, immersive experience.

A few financial services companies, including MasterCard, have transformed their payment systems to enable customers to make payments from within the virtual reality experience, so there are no interruptions. For example, where a customer accesses a gaming application using a VR headset, such as Oculus Quest, and would like to continue the game by purchasing additional credit points. In that case, banks can provide the interface for making a payment virtually, instead of requiring users to exit from the app.

Another example would be a virtual mall where customers can visit different shops. Inside a store, people can examine a menu of assorted products and make a payment within the virtual world. This triggers a payment authentication with a customer's account to complete the sale, and then they can continue to shop without any disruptions in the experience.

Augmenting the Physical Branch with a Virtual Branch

The traditional way of conducting a financial transaction is for a customer to visit a physical branch and meet the staff. This incurs costs for both banks and their customers. Banks must invest in the property and maintain the team and expertise, while the customer must spend time traveling to the branch office more than once as well as the inconvenience of limited opening hours. The COVID-19 global pandemic has accelerated the need for financial institutions to explore the provision of services virtually and reduce physical interactions between staff and customers.

As an alternative, financial institutes have begun to experiment with virtual branch offices using XR technology. This delivers a similar banking experience with some added benefits. Customers can use an AR/VR headset and visit the virtual branch at anytime from anywhere, and a multimodal, interaction-based avatar can provide customer service. While interacting with the avatar, customers can reach out to the customer service representative or branch manager remotely using an audio/video call whenever needed. In this virtual environment, banks can also partner with other vendors to promote joint services. For example, in a virtual branch, an area can showcase the latest offers, such as automobile or real estate property loans. This may help banks make discounted loan offers and close transactions quickly.

Marketing, Customer Education and Hiring Solutions

XR technology can also open new dimensions in a brand's marketing strategy. Customers can be engaged through virtual reality-based "gamification" platforms, educating people on financial topics as well as new products and services. This innovative marketing channel can offer a compelling way to help build connections with customers, leading to cross-selling, increased chances of customer retention, and new business opportunities.

Not only can AR/VR technology be used to provide virtual simulations of bank services with 3D visualization, but it can also help customers increase their financial know-how or learn about stock market trading. Customers can be trained easily at any time through an XR-based application rather than depending on the availability of experts within an organization.

AR and VR tech components can also bring new benefits to a financial institution's hiring practices. Using a virtual avatar, a financial services company can offer a unique recruitment experience to potential employees. With the use of natural language processing (NLP) technology, questions can be analyzed to understand the intent and context, and the response can be rendered using a text-to-speech conversion. With remote onboarding, tasks such as office tours and providing information on operating processes and work culture can be completely transformed using XR technology.

What Are the Challenges in Adopting XR Technology?

The adoption of XR technology is still lagging due to multiple challenges, such as the high cost and the technical expertise required for implementation and use. XR content creation also requires a considerable investment in effort and time. Even after content has been created, refreshing it regularly is also costly from an operational and budgetary perspective. Many projects never make it from proof of concept (POC) to production implementation due to the investments required for outcomes that are difficult to forecast with emerging technologies. However, innovations are being made to address these challenges, and major players are investing heavily in XR hardware and software, which will trigger further development and adoption of this technology.

Conclusion

XR technologies offer financial institutions the ability to transform both their customer relationships and internal operations through virtual-based services and marketing campaigns. AR and VR experiences provide customers with a range of benefits, including the ability to effectively analyze financial data and make decisions more quickly. Customers can also access virtual branches for assistance with services, ensuring they can avoid any Covid-related safety risks.

With more significant engagement opportunities within reach, institutions can increase their chances at expanding their customer base and maintaining loyalty with their current customers. Marketing campaigns can be delivered through immersive experiences and help customers gain valuable financial skills.

In order to make themselves more competitive in their markets, financial service providers should begin preparing to adopt these emerging technologies and further develop their digital customer experiences.



About the author

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Pradeep Naik (Pandurang) is a distinguished member of the Technical Staff at Wipro Technology. As a Chief Architect of the Interactive Experience (IX) practice, he is responsible for product development using AR/VR, Artificial Intelligence technology and research and innovation. Pradeep has over 28 years of professional experience in the IT Industry with expertise in Cloud, AR/VR and Artificial Intelligence technology. He is an active speaker in various forums, and has filed three patents. Pradeep is also a Vice President of the VR/AR Association Pune Chapter contributing to the AR/VR community.

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