Impact Of Augmented Reality (AR), Virtual Reality (VR) In Customer Service

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Abstract— Augmented Reality (AR) is a technology that layers digital information on the user's real-world settings. Virtual Reality (VR) is a computer-generated simulation in which users can physically act in an artificially created 3D environment thanks to electronic equipment. The physical presence of a user is digitized, giving him the feeling of experiencing this virtual world in a physical way. VR represents the total immersion of a customer into a new digital world whereas AR is the overlaying of digital features onto reality to create an augmented perception of the world. According to Statista, the global AR and VR market will reach $296.9 billion U.S. dollars in 2024. AR Technology within the industrial and manufacturing industries stood for the largest revenue share of 24,3% in 2021 and is expected to continue dominating the market forecast period. These technologies enhance accessibility, convenience, and engagement, fostering a CX-first culture that prioritizes customer needs and preferences. The result is improved customer satisfaction, loyalty, and retention in the competitive (Banking, Finance, Service and Insurance) BFSI landscape.

Indexed Terms- AR, VR, 3D, digital, virtual, BFSI

I. INTRODUCTION

In today's hyper-connected world, customers have many more ways to learn about and purchase products and services than they have had in the past. This omnipresence of products and services through growth in mobile technologies and internet facilities, user experience has become one of the key areas of competitive advantages among brands. Coupled with customer decreasing loyalties and fast dissolving barriers to switching product and services, a superior customer experience is being seen as a key business metric. In fact, delivering a great customer experience has now become top strategic priority for most business and ranks only third after price and quality. An industry study has found that 74 percent of senior executives believe that customer experience impacts the willing of a customer to be loyal advocate of the brand. Companies are looking at out-of-box solutions to provide the best immersive experiences, and harnessing the power of Augmented Reality and Virtual Reality is one of the ways. In such an environment, we take an extensive look at how various firms are looking to transform the customer experience through the use of AR/VA technologies, the growth prospects AR/VR promises in the next few years and various use cases for the same.

But what is this AR?
From the point of view of buyers:
AR or augmented reality is how buyers can visualize the product in context to their surrounding environment. AR allows the buyers to have a virtual experience of owning and using the product much before making the actual purchase.

From the point of view of sellers:
Augmented reality is a novel way of engaging with customers by providing a customized product experience in 3D. Also, it provides a contactless user interface to prospective product buyers, delivering them real-time interaction. It occurs between the real and virtual worlds through accurate 3D virtual and real objects.

By definition:
"Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory."

Augmented Reality (AR) is a technology that layers digital information on the user's real-world settings.

Users typically interact with AR through a device, such as a Smartphone or AR glasses, that displays this digital overlay. Some of the leading AR apps available include Snap chat's filters and Pokemon Go, both of which seamlessly combine digital and real-world elements.

Smartphone or Tablet: By using your device's camera, AR applications can track your position and orientation, superimposing digital content in real-time. Head-Mounted Display (HMD): HMDs project digital images onto your eyes, allowing you to see both the real world and digital content simultaneously. A prime example of this technology is the HoloLens.

Projectors: Projectors are used to display digital images on real-world surfaces, creating large-scale AR experiences.

What is Virtual Reality?

Virtual Reality is a computer-generated simulation in which users can physically act in an artificially created 3D environment thanks to electronic equipment. The physical presence of a user is digitized, giving him the feeling of experiencing this virtual world in a physical way. VR is supported by visual and auditory signals, as a result of which you take place in a simulated reality.

When using Virtual Reality (VR), individuals wear headsets that cover their eyes and ears, blocking out the physical environment. They are fully immersed in the virtual world and can often interact with it using specialized controllers or gestures. VR replaces reality with a digital simulation and thus brings you a transformative experience.

Why VR needed?

1. Helping Customers Make Informed Decisions

The way customers shop has been changing on a massive scale for the last few years. The digital environment means that we do much of our shopping online these days. However, there are some parts of the shopping experience that are hard to replicate in a digital environment. It's difficult to try on a new outfit or imagine what a kitchen might look like when browsing a website.

VR introduces a new kind of shopping experience, intended to help customers make better decisions. You can step into a virtual fitting room and try on a new dress before spending any money. Companies like Ikea also allow users to build their own virtual kitchens to imagine what their finished project will look like.

2. Differentiating Brands

VR also has the potential to differentiate brands and help them stand out from the competition. Today, the decisions clients make about who to buy from are often based on the experience they can expect from a specific company. VR allows for an immersive experience where consumers can interact with people and items as if they were standing in a store.

The use of immersive experiences improves your chances of turning customers into loyal advocates, by helping to build a relationship between your company and your clients. VR gives customers a highly realistic experience which we can relate to on an emotional level. Marketers can develop thrilling and exhilarating VR interactions, and these lead to stronger connections between brands and their target audience.

3. Reduced Buyer's Remorse

Virtual reality could tackle the problem of buyer's remorse once and for all, in both the B2B and B2C environment. A great customer experience requires your customer to feel as though they're getting the right amount of value for their money. The ability to try items on before you buy them and test the performance of different equipment in virtual reality can reduce the risk of buyer's remorse.

Companies from virtually every industry can use VR to minimize the risk of bad experiences for their clients, and thus reduce negative reviews too. Travel agents can allow users to check out a location before booking a trip. Automobile manufacturers have the option to place their customers inside a car for a "virtual" test drive. The options are endless.

4. Better Post-Sales Customer Service

Customer service departments are going through a rapid period of evolution, particularly, following the pandemic of 2020. Companies now need to work harder than ever to serve their clients in a digital

environment. This has led to the rise of chat bots, virtual assistants, and self-service tools, but also to the use of VR in post-purchase support too.

In a VR environment, companies can send engineers to interact with customers, and show them how to fix common problems, without asking them to wait for a physical call-out. Virtual Reality demonstrations can show users how to set up new technology, and onboard them into the platform without the need for a human agent. VR systems can even help with things like troubleshooting common problems, as a replacement for the standard instruction manual.

5. Opportunities for Customer Success

Aside from simply helping customers deal with problems that may arise after they purchase a product or service, a VR solution can also improve the chances of your customers getting the best possible results from their investment. Companies can build training experiences within VR which show users how to access the most valuable features of a new piece of equipment in exciting ways.

Example

Sephora, the leading global beauty retailer, is a prime example of a successful business that has effectively integrated AR (Augmented Reality) and VR (Virtual Reality) technology to enhance the beauty shopping experience for its customers. Sephora has implemented AR-powered virtual try-on features on its mobile app and website. Customers can use their Smartphone's camera to try on various makeup products virtually, such as lipsticks, eye shadows, and foundation shades.

This AR try-on experience allows customers to see how different beauty products look on their faces in real-time, helping them make more informed purchase decisions without having to visit a physical store. Virtual try-on minimizes the need for in-store sampling, streamlining the shopping process and increasing convenience for Sephora's global customer base.

Why companies adopting AR/VR technologies?

VR represents the total immersion of a customer into a new digital world whereas AR is the overlaying of digital features onto reality to create an augmented perception of the world.

1. Training employees for improved customer understanding and experience

Human interaction and understanding is a big part of customer service. Many people want to speak to a knowledgeable person when browsing products, making a purchase, or lodging a complaint. This makes the training you give your service agents critical.AR apps can deliver that experience without a staff member having to physically handle every item. AR models can replicate a real product so you can train your staff in a fraction of the time.AR can make training quicker and more efficient.

2. Removing uncertainty from purchase decisions.

The ecommerce market's estimated worth was over $25 trillion in 2019. Despite that, there's still a significant drawback to shopping online: consumers can't physically assess and examine a product before purchasing it.

For example, the IKEA Place app lets users 'place' furniture in their home with just their phone or tablet.

3. Offering advice or adding value via interactive packaging.

AR's impact on customer service isn't limited to the pre-sale process. In fact, the most exciting uses of AR come at the point of sale. One of the best examples of this is the concept of interactive packaging. Interactive packaging gives customers a more engaging and valuable experience via AR. Customers can point their phone at a product's packaging and see compelling visuals.

Heinz, for instance, has used interactive packaging to deliver useful, practical insights. Way back in 2011, the condiment brand used AR to give customers a range of recipes using tomato ketchup.

4. Presenting try-as-you-buy experiences.

At the point of sale (POS), AR delivers a two-pronged benefit. You can leverage the tech at this point in the buyer journey to offer 'try-as-you-buy' experiences. This can help you boost sales because the apps help overcome customer objections.

The easiest way to explain how these AR apps work in practice is with an example. L'Oréal's, 'Style My Hair' app is one of the best around as it lets users give themselves virtual makeovers. A customer considering whether to buy a particular hair dye can see how it will look before purchasing.

5. Identifying and reporting product faults or malfunctions.
Reporting product faults can often prove tricky for many customers. Often, customers won‘t understand a product well and will struggle to explain what’s gone wrong to a customer service agent.
6. Providing self-service support.
AR can help customers avoid customer service staff altogether. Lots of businesses are using AR for self-service support after a purchase is made. Using an AR app, customers can point their phone at a product and get an in-depth self-service overlay.
Mercedes, for instance, has leveraged AR in its Ask Mercedes virtual assistant. Through the assistant, drivers can scan an element of their vehicle and have its functionality explained to them. They can also ask questions about any problems or faults in its operation. Combined with an AI chatbot, the AR element of the assistant makes it much more user-friendly.
7. Contactless shopping:
Some fashion retailers, such as Gucci and Tommy Hilfiger, are using AR to provide an added layer of interaction for customers to experiment with products. Augmented reality features are embedded into retail apps, which allow customers to digitally superimpose garments and accessories onto themselves using the camera on their Smartphone device.

Augmented reality overlays digital information onto the physical world to create a mixed-reality experience. Virtual reality, however, places users in an entirely digital environment that completely shuts out the real world. Both technologies are providing unique benefits.AR and VR are changed customers interaction with businesses and products. This creates a more engaging and immersive experience. AR allows customers to overlay computer-generated images onto real-world views. This allows them to visualize how products would look within their environment. This feature is very useful for customers purchasing furniture, accessories and fashion products. VR provides customers with a fully virtual experience in which they can see and feel products and services.

Factors that Affect AR/VR Customer Experience
Tech Compatibility: Some devices may not support AR. Not everyone has the latest gadgets, so not everyone can enjoy the AR features.

Tricky to Use: Yes, if it’s not designed well, it can be confusing. People might find it difficult to understand or use, leading to frustration.

Privacy Worries: AR applications often require access to personal data. This can raise concerns regarding user privacy. As a result, people want assurances that their personal information is being protected.

Internet Dependence: AR heavily relies on the internet. If your connection is weak or lost, the AR experience can get disrupted, making it less enjoyable.
Too Much, Too Fast: Overloading the features without a clear purpose can confuse users. Too many things happening at once can overwhelm your customers. Also, it’s possible they might become unsure of where to focus or what to do.

What are the tools and software that enable AR and VR?
There are many tools available to you online that can be used to develop AR and VR-based applications. However, you need to consider the kind of product you wish to market to decide which software you should use. For example, your choice will vary depending on whether you want to develop marker-based apps or location-based apps, etc. So, you must choose the correct AR/VR software development kit (SDK) for your needs.

Vuforia. Vuforia is one of the highest-rated AR SDKs that frequently feature on lists of the best SDKs on the market. There are several products under Vuforia, including Vuforia Engine, Studio, and Chalk. The added advantage of this SDK is that it allows the creation of both marker-based and markerless augmented reality applications. Marker-based apps are those which need to scan a physical marker like a barcode or a tag to trigger an AR experience.

Wikitude. Wikitude is an SDK that can be used to develop location-centric AR experiences. It allows users to integrate geolocation and cloud recognition software into the app. Wikitude allows 3D location, image recognition, and tracking. It also enables video overlay and can be used on smart glasses.

Apple ARKit. Apple’s ARKit was introduced back in June 2017, along with the launch of iOS 11. Since it

has been tailor-made for Apple devices, it can be used to create apps for iPhones and iPads as long as they have an A9 processor or better. It is an extremely versatile tool that allows developers to create applications that allow for 2D image detection and tracking, recognition and placement of 3D objects, facial tracking, and detecting planes.

Unity 3D. Unity 3D is a tool used to create VR environments accessible to professionals and amateurs alike. Its popularity and intuitive display make it easy to learn, and its vast array of 2D and 3D assets saves time and effort in creating new characters and landscapes.

Unreal Engine 4. Unreal Engine is the preferred SDK for most professionals to build games and VR simulations. The software ensures high-quality graphics with advanced and realistic features. It also has a reliable store of assets that includes animations, plugins, live training, and blueprints that you can access to build your VR environment. Despite its highly advanced features, Unreal Engine is supported on several platforms such as Windows PC, Mac OS X, iOS, Android, Linux, and HTML5. It is also compatible with Head-Mounted Devices like Oculus Rift, HTC Vive, Gear VR, and Google VR.

The future of AR and VR

There are many different reports speculating what the global AR and VR market will reach within the upcoming years. According to Statista, the global AR and VR market will reach $296.9 billion U.S. dollars in 2024. AR Technology within the industrial and manufacturing industries stood for the largest revenue share of 24,3% in 2021 and is expected to continue dominating the market forecast period.

While VR is consciously growing within the gaming industry, AR is mostly leveraged in the Industrial and Enterprise sector, for on-site advancements and digitalization. Also, many companies try to fit AR into their process chain of Industry 4.0.

What is mixed reality?

In order to understand all these concepts, it is also necessary to mention mixed reality. This is a technology that combines elements of virtual reality and augmented reality to create a more immersive and realistic interaction experience. In mixed reality, virtual objects and the real world coexist and integrate with each other in real time.

Mixed reality uses devices such as headsets, glasses or screens to superimpose virtual objects on the real world. These objects can interact with the real world and with other virtual objects in the same scene, allowing for a more interactive and realistic experience.

An example of a mixed reality application would be a game where players can interact with virtual characters and objects in a real world. They can also be used in industry to create virtual prototypes of products and see how they would look in a realistic environment.

CONCLUSION

In conclusion, by adopting AR and VR technologies in the BFSI industry, organizations can create immersive, interactive, and personalized experiences for their customers. These technologies enhance accessibility, convenience, and engagement, fostering a CX-first culture that prioritizes customer needs and preferences. The result is improved customer satisfaction, loyalty, and retention in the competitive BFSI landscape. Every forward thinking marketer must bring a healthy curiosity and willingness to experiment and adjust their content and marketing strategies to take best advantage of this energetic, wild and wonderful new ecosystem. Marketers, business owners and fundraisers and others challenged with creating persuasive digital marketing campaigns must embrace AR/VR and discover new ways to develop creative, engaging, effective and memorable messages.

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