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The State of

# EXTENDED REALITY

In an Experience Economy

## A Mid-Year Outlook

On the next big bet from the tech world

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# Introduction

Today's customers are digitally savvy, demanding, and value driven. They expect brands to be proactive, offer personalized solutions, and be sustainable in their practices. Given the increasing acceptance of a **hybrid world**, it's no surprise that companies are moving towards creating superior digital experiences across an **omnichannel** setup.

Users have witnessed a pandemic for more than 2 years now, and are clamouring for an **enriched experience** that goes beyond the 2D outlay a laptop or mobile can provide.

With this demand for improved CX and the rapidly evolving digital infrastructure, **extended reality (XR)** has gained tremendous interest from technology and business leaders in equal measures.





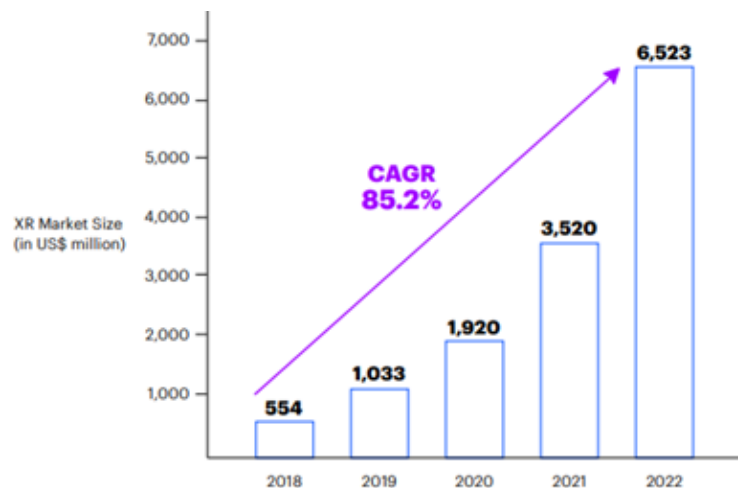
# Market Overview

The pandemic has helped accelerate the development of emerging technologies that are more cognizant of modern-day challenges.

XR brings together humans and computer-generated graphics for digital interactions. It can be defined as the superset of technologies like mixed reality, augmented reality, and virtual reality. And, by bringing these technologies to the fore, we are potentially unlocking an entire spectrum of opportunities across both the real and virtual worlds.

According to the latest report by Emergen Research[i], the global XR market is expected to reach a market size of **USD 1,246.57 Billion** at a steady **CAGR of 24.2% in 2027**. While North America continues to be the largest market for the technology, the next growth spurt will be driven by the **Asia Pacific region**. Closer home, the **Indian market** continues to see fast adoption and growth in the XR market.

**Fig 1: The Indian Market for XR takes off**



Source: Accenture Report: Virtual is the new reality



# Key Growth Drivers



## Increasing demand for realistic and immersive user experiences

India has the largest youth population (18-29) in the world, which is more than 261 million people. As the generations which have been digitally native from the word go, turn into decision makers, the high demand for quality experiences will drive greater XR adoption.

## Saturation of existing channels

The saturation of content in existing channels during the pandemic has caused digital fatigue.

The time spent by a user on their screen has increased exponentially, but most digital channels continue to offer blasé visual graphics which no longer excite the end consumer.

Users want an **omnichannel experience** that allows them to **interact with brands across multiple digital touchpoints**. Metaverse provides an opportunity for brands and users to interact by mashing virtual and real environments together. Bloomberg estimates that Metaverse is already valued at more than 800 BUSD[iii]







## Change in consumer mindsets and acceptability

According to a study conducted by Poplar, globally, **75% of consumers expect their retailers to now offer an AR experience.** Further, the rise of Metaverse has been augmented by the rise in Web 3.0 applications like NFTs and Cryptocurrency. The global transaction volumes for NFTs is expected to grow from 24 mn in 2022 to 40 mn in 2027[iv].

Testament to its widespread acceptance, in India, which is already the largest investor market for cryptocurrency, NFT trade is trading at similar levels as the crypto market.

## Cheaper costs of hardware

As the technology becomes more widespread, the cost of hardware and software needed is decreasing. This makes it more accessible to a wider range of people and businesses. Reliance Jio has launched its version of the VR headset called Jio Glass. Further, **VR headsets in India are available from starting prices as low as \$50.**



## Improved technology infrastructure

In UK, the research on **6G technology** has picked up the pace. Countries in the Middle East region show more than 90% digital penetration. And, **India recently conducted its 5G spectrum auction** to begin providing the service to consumers. All across the world, the technology infrastructure required to support an XR-driven future has been growing. Faster speeds and greater connectivity help blur the lines between the physical and virtual worlds.





# Rise of the Indian Customer

In 2021, India had **1.2 billion** mobile subscribers, out of which **750 million** were smartphone users.

Given the high digital literacy trickling down to the Tier 2 and Tier 3 cities, the appetite for adopting newer technologies remains high.

In India, the adoption of extended reality continues to be led by AR and VR technologies.

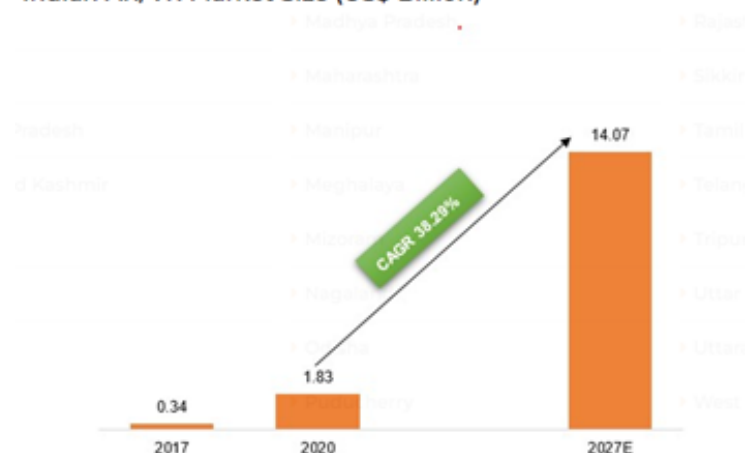
According to Research and Markets<sup>[ii]</sup>, the **total market size of AR/VR in India is expected to advance at a CAGR of 38.29% to US\$ 14.07 billion by 2027.**

This is fueled by the Jio revolution, increasing investment in digital infrastructure and the low cost smartphone penetration, which is expected to go from **54% in 2020 to 96% in 2040.**

As telecom companies start providing 5G services by 2022-23, the digital infrastructure required to support such high-quality experiences will get a further boost.

**Fig 2: Indian AR/VR Market Explodes**

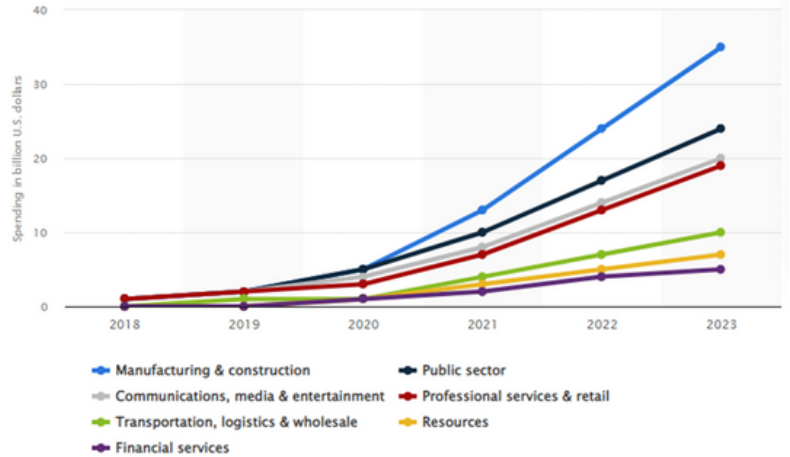
Indian AR/VR Market Size (US\$ Billion)



Source: Research & Markets Report

# Business Adoption of XR

Businesses need to understand the opportunity that the XR market presents today. Whether it is employee productivity, or, customer experience, stakeholders are open to adopting AR/VR technologies.



Source: Statista 2021, Market Spending on XR Technologies Worldwide from 2018-2023

Industry leaders need to tap into the benefits and differentiation that having an AR experience can provide. A reluctance to do this would invite the risk missing the bus to disruptive new entrants more attuned into the consumer needs. With customer loyalty waning away faster than ever before, companies can no longer afford to be reactive in their offerings.

While the maturity rates are not the same in all industries, some show greater inclination than others in their quick adoption. One can divide these into B2B and B2C segments.



**A common misconception is that investments in XR are limited to consumer applications. When in fact, industrial spending overtook consumer spending in 2019 by 3x.**



# XR Use Cases in the B2B Segment

Spends in industrial usage are primarily aimed at improving the business processes, and reducing costs and manpower required.

Industries such as **Oil and Gas, Financial Services, and Manufacturing** have shown a proclivity towards faster adoption. And, have invested in capabilities to support their vision.

**The business applications which have seen favourable traction across these industries include -**



## Reducing cost and risk of training new workforce

Employees in traditional industries require a long period of training time to learn the complex machinery involved. Further, this comes at both high cost and risk. Given that these industries are looking at training a younger workforce, this timely intervention helps companies save huge costs, ensure safer environments for the trainees, and help reduce errors.

**Hindustan Petroleum[vi], an oil & gas giant, has set up an XR facility at its Petroleum House Learning Centre. It provides an interactive and simulated environment to practice field situations in functions such as refinery and depot. It's helping address the challenges of traditional training methods that are fraught with difficulty, and risks and come at a huge expense**

## Offering personalized services for better customer engagement



Providing personalized assistance can go a long way in building long-lasting relationships with customers. Whether it is with guided product tutorials through a VR environment, previewing products through an AR app before purchase, or remote assistance through mixed reality. Such digital touchpoints can help improve customer satisfaction.

**As per IBM's[viii] report, the Financial Services industry is expected to have the highest spending in XR for improved customer engagement. The market is estimated to grow at a CAGR of 133.9% in the next decade, with a keen interest in higher brand recall through XR.**

**Banking mogul Citi developed its HoloLens Holographic Workstation which helped its advisors in the visualization of complex financial models. The same technology could also be extended to clients, using visual elements to explain decisions better.**

## Improving workplace transformation through a collaborative hybrid environment

XR enables teams spread geographically to collaborate better. Whether it is remote conferencing for discussions or building digital twins of new products, XR helps supervisors and experts step in from remote locations as the need for guidance arises.



# XR Use Cases in the B2C Segment

Modern consumers demand empathy and personalization. They can, and will leave a brand that doesn't provide quality digital experiences. XR provides an opportunity for brands to extend their customer touchpoints beyond the standard channels, and in effect increase their brand recognition and recall.

Industries such as **Healthcare, Gaming, Education, and Travel** have emerged as early adopters of XR

Some of the applications in these industries include –

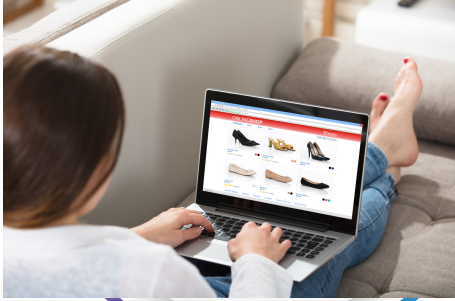
## Improving Patient Engagement in Healthcare



Remote Patient Monitoring has taken off post Covid thanks to the ease it provides in disseminating healthcare to distant patients. As the wearables market continues to surge, the telehealth industry can leverage XR to provide emergency care, VR-focussed physiotherapy, and pain management.

**VR focussed organization SnowWorld[ix], developed with over 2 decades of research by Hunter Hoffman and David Patterson, helps patients with acute pain management. It redirects patients from their acute pain to simulated environments where they are focused on meaningless tasks such as throwing snowballs. Burn patients have shown 35-50% lesser pain when immersed in this experience.**





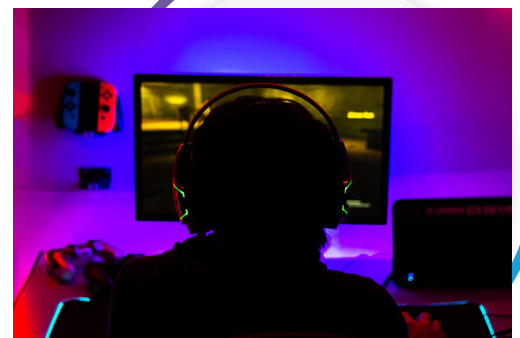
## Enabling an Omni-Channel Customer Journey through Experiential Retail

Before the pandemic, the retail sector was ripe for an overhaul. Physical stores had begun **experimenting with omnichannel systems** and eCommerce. However, now brands are embracing new applications of XR to assist the customer buyer journey.

**In India, home decor brands Urban Ladder and Fenesta use AR to help customers visualize how pieces of furniture will appear in their house setup. Globally, companies such as Nike use AR VR in their physical stores to allow customers to understand their supply chain and get a more detailed insight into how their chosen product has been created.**

## Building a sensory experience in the world of Gaming

The **XR spending on gaming is expected to rise to \$18 billion by 2023**. High-quality graphics and immersive visual experiences have led the user engagement in recent years. Now, with transformative hardware becoming common in households to companies developing haptic feedback technologies for the next level of immersive experience, this industry continues to drive the mantle on XR adoption.

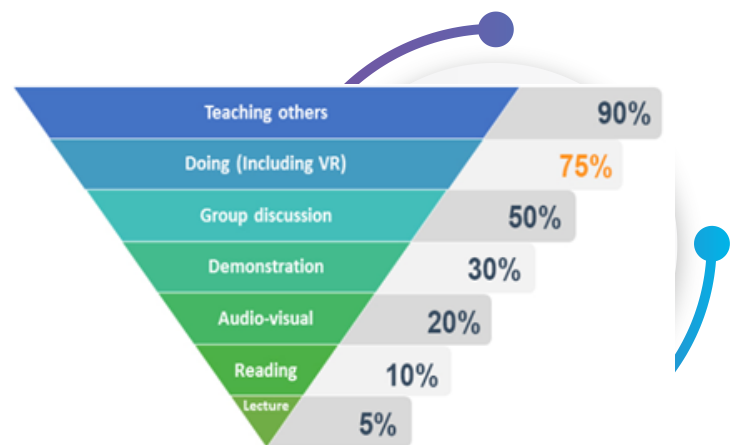


Headsets such as Oculus Quest 2 sold over 15 million units in just 20 months of its launch. In India, 70% of the AR/VR market is attributed to the hardware segment. We have Reliance Jio's Jio Glass which seeks to disrupt the industry.

## Creating Deeper Learning Focused Education

The National Education Association of the United States found that learning through VR training led to a **75% retention**, as compared to 20% through audio visual tools[x].

Providing immersive learning experiences and practical application through simulations help students learn and retain concepts more effectively.



Indian ed-tech major, Byjus acquired the blended learning platform Osmo[xi] in 2019 to develop gamified experiences for children to gain hands on learning for academic and co-curricular activities.

# Core Challenges

# 1

## Ensuring Data Privacy and Security

Building a personalized experience and virtual environment will require several details from users. Companies that capture such sensitive data will need to have **create or deploy robust security systems** to ensure the safety of this data. Further, users will need to be sufficiently convinced that their data will not be monetized by the companies.

## Optimizing Tech for Sustainable User Health

Prolonged exposure to virtual environments, using the clunky hardware, and **dissonance from reality** can cause health issues to the end user. From feelings of nausea and disorientation in the short term to **lifestyle challenges** such as vitamin deficiency and eye sight soreness, the road to safe adoption for XR still remains distant.

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## Securing the Digital World Against Cyber Attacks

Cybersecurity has been marked as the **#1 technology concern** as the world moves towards greater digitalization. **Cyber bullying and scams** have been rampant in the last 2 years. Building the legal expertise to govern citizen in the new environment and evolving tech landscape requires nuanced handling.





# The future looks promising

Extended reality is a driving force of the experience economy. Whether it is understanding the insurance risk profile of your family members through an AR app, improving health and fitness through VR based esports or facilitating hands on learning for children, XR firmly instils the customer at the centre of its universe.

As hyper-personalization continues to drive loyalty in the market, businesses will leverage the efficiencies that XR can offer for greater success.

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[iii]**Bloomberg Report, Metaverse may be \$800 billion market, next tech platform**, <https://www.bloomberg.com/professional/blog/metaverse-may-be-800-billion-market-next-tech-platform/>

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# About Mantra Labs

**Mantra Labs** is a global experience engineering & consulting firm that builds intelligence-driven solutions and delivers digital-first customer experiences for global enterprises. With its 250+ skilled and passionate technologists, having delivered 100+ projects around the globe the company specializes in solving real-world front & back-office challenges faced by Insurance & InsurTech companies. Mantra has worked with some of the World's leading Insurers like SBI General Insurance, Religare, DHFL Pramerica, Aditya Birla Capital and AIA Hong Kong.

Mantra Labs is also a recognized **InsurTech100** company deeply involved in developing technology solutions for business-specific problems with several strategic technology partnerships including MongoDB, IBM Watson and Nvidia.

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