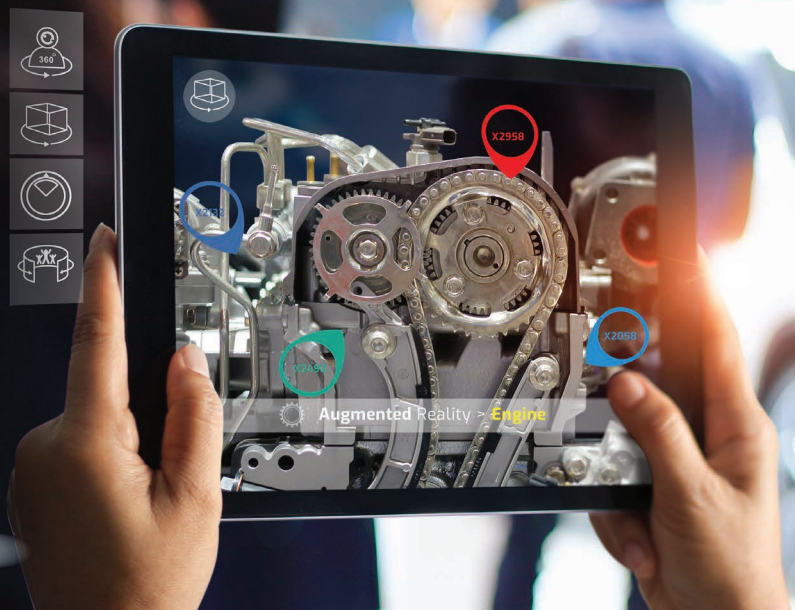


Immersive Technologies in Manufacturing Industry



Customer Experience (CX) is the battlefield for brands. Differentiated CX is core to improving and retaining customer loyalty. Mindtree, with its deep digital expertise, has been at the forefront of helping enterprises deliver enhanced and contextual experiences to their end clients.

User Experience is undergoing a **tectonic shift** in terms of how customers perceive and interact with the digital world. The shift in perception augmented by AI and interactive technologies like **Augmented Reality (AR)**, **Virtual Reality (VR)** and **Mixed Reality (MR)** is driving multisensory and multimodal user experiences. This unleashes new possibilities to transform interactions throughout the customer experience & industry 4.0 touchpoints.

Overview

In Manufacturing Industry, Immersive technologies especially augmented reality and Mixed reality is poised to solve a remarkable number of problems and that is why “Smart Manufacturing” sector is forecasted to grow at 15% CAGR, reaching \$150 Billion by 2022. Immersive experience powered by artificial intelligence is fundamentally changing the way consumers perceive and interact with the physical and digital world. From facility management to training talent on niche skills, from quality assurance to real time remote expert assistance Immersive technologies are creating endless new possibilities across verticals in the space of Manufacturing.

Where can one use this?



Prototype



Sales & Marketing



Customer Experience



Training



Service & Operations

How are we positioned?

With physical and virtual worlds converging, Mindtree is well-positioned to help clients, rapidly unlock value from their immersive technology business use cases

Technology Essentials

True immersive experience is an amalgamation of various technologies like AR VR MR, Computer Vision and Artificial Intelligence (AI).

Category	Tools/Activities
3D Content Authoring	Blender or Maya 3D Modeling UV Unwrapping Shading & Texturing Skinning, rigging Animation Unity shading & texturing Lighting, Baking, Rendering
Game Engine / IDE	Unity 3D Xcode(iOS), SceneKit Android Studio, PyCharm - Python Dev Visual Studio, Sceneform Unity Editor and Unity Engine Compositing VFX Interactions Integrating AI Voice Integration Sound Integration Cloud Integration
Augmented Reality SDK	Gimp, Photoshop Vuforia Vuforia Expert capture - AR Instructions Vuforia Studio - Author and publish AR Apps Vuforia Engine - Advanced computer vision, calibrated performance and cross platform Vuforia Chalk - Remote ARCore - Android AR Kit - iOS Hololens Full feature AR App Development Integrating SDK's Platform specific modification Camera Scene Capturing Advanced Scene Processing Display – Rendering Effects Positional and Orientation Tracking Screen flooding Object / Image Tracking
Mobile App Development Frameworks	Native App Development Frameworks: Android SDK iOS SDK Cross Platform Development Frameworks: Xamarin Ionic / Cordova React Native Flutter Appcelerator UI Design Animations API integrations DB handling Plug-in integration Deployment
Hardware Technologies	True Depth camera (iOS) Depth sensing camera Gyroscope and accelerometer BLE Using point cloud for environment understanding and face tracking Device Motion Control Integrating with peripheral devices
Artificial Intelligence (AI) & Computer Vision (CV)	TensorFlow, PyTorch, Keras, TuriCreate, OpenCV, Apple computer vision, Microsoft Vision, Vuforia Model Target Generator Natural Language Processing (NLP) Engines - Microsoft (LUIS), Amazon (Lex, Alexa), Google (Dialogflow), RASA, Mindflow, Salesforce Einstein, SAP Leonardo Training of Models Object detection Face shape detection Edge Detection Model Detection Creation of TF Lite Model and Core ML Conversational Interaction

Possibilities

				
Prototype	Sales & Marketing	Customer Experience	Training	Services & Operations
Digital Twins Collaborative Design Design Review	Digital Catalogues Augmented Marketing Ads Shared AR Based Selling	Virtual Walkthrough Product Customization Augmented User Manuals	Simulation Training Product Training Expert Coaching Facility Equipment Training Safety Product Training Expert Capture	Remote Expert Assistance Service Manual Instructions Augmented Assembly Instructions Augmented Quality Assurance Service Inspection Instructions

Benefits

By implementing the possibilities here are the potential benefits

			
Low-cost visualization of high cost asset	Brand Differentiation	Efficient Equipment Maintenance	Quality Assurance
			
Increase Worker Productivity	Reduce shutdowns and downtimes	Lower Operational Costs	Upskill Workforce





Our Experience

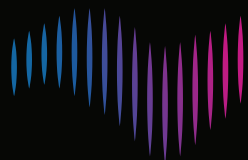
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