

Automotive AR and VR Market Assessment, By Type [Augmented Reality, Virtual Reality], By Application [Driver Assistance and Safety, Information and Entertainment, Vehicle Customization and Configuration, Autonomous Driving Systems, Others], By Technology [Head-up Displays, Smart Glasses, VR Headsets, Embedded Systems, Others], By Vehicle Type [Passenger Vehicles, Commercial Vehicles], By Distribution Channel [OEMs, Aftermarket], By Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Automotive AR and VR market is projected to witness a CAGR of 11.24% during the forecast period 2024-2031, growing from USD 4.56 billion in 2023 to USD 10.69 billion in 2031. The automotive industry has been significantly impacted by immersive technologies such as augmented reality (AR) and virtual reality (VR). These technologies have found diverse applications in the industry, with AR being used for car design, prototype testing, and employee training, while VR has been employed for marketing, including virtual showrooms and test drives. The metaverse concept, a virtual world with multifaceted uses, is gaining traction, and the automotive industry is exploring its potential in marketing, sales, customer service, and manufacturing. Immersive technologies are becoming vital in the automotive industry, offering innovative ways to engage customers, and holding the potential to revolutionize the sector.

For instance, technologies, including online car configurators, 3D visualizations, and

virtual test drives, bolster online sales and make the car research experience more interactive. For example, In June 2023, MG Motor India opened a digital immersive studio called StudioZ in Chennai for car buyers and enthusiasts. The studio has AR and VR experience, digital running facade, video wall configurator, and mega visualizer with AR/VR zone. The immersive digital studio aims to bring the best in technology and automobile experiences to customers.

AR-Based Head-Up Displays

The widespread adoption of AR applications across industries has led the automotive industry to utilize the technology to enhance road safety. AR-based head-up displays (HUDs) can display relevant information and alerts to drivers, improving their safety on the road. AR can also assist with automated parking, distance and speed assistance, lane-keeping prompts, and navigation, among other features. AR solutions provide drivers with active access to information, making it easier to avoid distractions from their smartphones, devices, or surroundings while driving.

AR has become an essential component of car safety features. For instance, in December 2023, the Electric Porsche Macan introduced augmented reality head-up display technology. The Porsche Macan EV is anticipated to be the 'sportiest model in its segment', as stated by the automaker. This advancement reflects the increasing integration of AR in the automotive industry, signifying a significant shift towards innovative driving experience and advanced technological features.

In-Vehicle Entertainment Comfort

In the automotive market, there's significant growth in elevating in-vehicle entertainment and comfort. AR and VR technologies are changing the driving experience by offering various entertainment options and personalized comfort features. AR HUDs provide real-time information directly to windshields, improving navigation and safety. On the other hand, VR applications cater to in-car entertainment, providing passengers interactive and engaging experiences during journeys. From virtual cinemas to augmented travel information, these technologies aim to make travel more enjoyable. As the automotive industry continues to make changes for passenger experience, the integration of AR and VR into in-vehicle entertainment and comfort systems is poised to play a pivotal role in shaping the future of automotive technology. For example, in 2023, Meta and BMW joined forces to explore the integration of AR and VR experiences in fast-moving vehicles. The partnership aims to make time spent in cars more productive, social, and entertaining. By combining Meta's AR and VR technology with BMW's

sensor data, the research has led to the development of stable 'car-locked' gaming, entertainment, and productivity experiences for passengers.

Focus on Electric and Sustainable Vehicles

A heightened focus on electric and sustainable vehicles strongly shapes the automotive AR and VR market. As the automotive industry undergoes an innovative shift towards electric mobility, AR and VR technologies play a crucial role in strengthening the driving experience for electric vehicle owners. These technologies optimize energy consumption, offer real-time data on battery performance, and provide immersive interfaces for electric vehicle users. AR and VR applications contribute to making a seamless and user-friendly transition to electric mobility, aligning with the industry's commitment to sustainability.

Growth of Virtual Showrooms

Luxury car brands and used car dealerships are adopting immersive technologies to showcase their collections remotely. Virtual showrooms allow customers to explore vehicles, step inside them, and even take virtual test drives within a virtual environment. This technology saves customers time and money by allowing them to see a VR version of the vehicle from the comfort of their homes, avoiding traveling to various dealerships. Similarly, car dealers can save overhead costs on car showrooms and demonstrations. The metaverse, or virtual reality, is revolutionizing how automakers serve their customers and is expected to have a significant impact on how motorists experience vehicles. Virtual showrooms are highly interactive and immersive environments for customers, ultimately reshaping the automotive retail experience.

Key Player Landscape and Outlook

The automotive AR and VR market is characterized by the dynamic presence of key players driving innovation in the automotive tech landscape. Companies like Microsoft Corporation and Continental AG are at the forefront, pioneering AR and VR applications in vehicles. These key players are focusing on strategic collaborations, product launches, and continuous advancements to enhance the AR and VR experiences within automobiles. The outlook for the market is optimistic, with increasing investments in research and development (R&D), aiming to bring about transformative changes in the way drivers interact with their vehicles, emphasizing safety, navigation, and overall driving experience through immersive technologies.

In November 2023, Basemark made a significant impact on the automotive AR market with its tooling and software products. The company further expanded its influence by announcing a new partnership with Luxoft, a DXC Technology company. Luxoft has joined Basemark's Rocksolid Ecosystem, a community dedicated to pioneering innovative and immersive solutions for automotive AR experiences. This partnership is expected to bring cutting-edge automotive AR solutions to the market.

For instance, in May 2022, Microsoft and Volkswagen collaborated to integrate AR glasses into moving vehicles through the HoloLens 2 project. This partnership aims to enable the use of AR technology in daily life, providing users with contextual information and 3D communication. HoloLens 2, designed for business use, offers an immersive AR experience with a wide field of view and natural interaction capabilities.

In March 2022, Porsche and the entertainment-technology start-up Holoride introduced an in-car VR experience in a moving vehicle. This innovative attraction, named Cosmic Chase, is being permanently installed at the Porsche Experience Center in Los Angeles. By integrating real-time driving data from a Porsche Cayenne, the experience provides passengers with an immersive journey through outer space, complete with synchronized sound effects and visuals. This collaboration represented a significant step in making holoride's technology accessible to a wider audience.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

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