

Automotive Software Market Assessment, By Application [Safety and Security, Infotainment and Instrument Cluster, Vehicle Connectivity, Powertrain, Others], By Vehicle Type [Passenger, Commercial], By Software Layer [Operating System, Middleware, Application Software], By Distribution Channel [OEMs, Aftermarket], By Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Automotive software market is projected to witness a CAGR of 8.28% during the forecast period 2024-2031, growing from USD 21.34 billion in 2023 to USD 40.33 billion in 2031. The global automotive software market is at the forefront of transformative changes, driven by an increasing convergence of technological innovations and shifting consumer demands. With vehicles becoming highly connected, the market is witnessing a surge in demand for advanced automotive software solutions. Key drivers include the growing emphasis on connectivity features, such as infotainment systems, telematics, and over-the-air updates, enhancing the overall in-car experience. The rise of electric vehicles (EVs) and autonomous driving technologies further propels the need for Sophisticated automotive software to manage complex systems and ensure seamless integration. Innovations in advanced driver assistance systems (ADAS) and the integration of artificial intelligence (AI) for improved safety and autonomous capabilities are reshaping the automotive landscape.

Additionally, the push toward smart and connected cities amplifies the demand for software that facilitates vehicle-to-everything (V2X) communication. As the industry undergoes a digital transformation, collaborations between traditional automakers and



tech companies, along with a focus on cybersecurity to protect connected vehicles, are critical components influencing the trajectory of the global automotive software market. The market's evolution is not only redefining driving experience but also laying the groundwork for the future of mobility.

For instance, KPIT Technologies revealed a comprehensive software technology roadmap for software-defined vehicles (SDV) at CES 2023 in January 2023. The roadmap includes technological solutions that address three major areas: establishing the E/E infrastructure and technology stack, bringing scale to production through technology, and enabling data and application upgrades through the cloud.

Rapid Technological Advancements

The market is experiencing rapid technological advancements, propelling the automotive industry into a new era. Innovations, such as ADAS, autonomous driving capabilities, and connected vehicle solutions, are reshaping the driving experience. Software-driven functionalities, including real-time data analytics, predictive maintenance algorithms, and over-the-air (OTA) updates, are becoming integral. The integration of AI and machine learning (ML) enhances decision-making processes, contributing to improved safety and efficiency. As electric and hybrid vehicles (H/EVs) gain prominence, sophisticated software solutions help manage powertrains for optimal performance. The swift evolution of automotive software underscores an industry-wide commitment to delivering smart, connected, and sustainable mobility solutions, defining the future of the automotive market.

For example, In December 2023, Renesas Electronics Corporation, a leading provider of advanced semiconductor solutions, unveiled a new cloud-based development environment aimed at simplifying the software design process for automotive AI engineers. The newly launched platform, AI Workbench, is an integrated virtual development environment that empowers automotive AI engineers to design, simulate, and fine-tune their automotive software, all within the cloud. This initiative is set to accelerate the development and evaluation of automotive AI software, contributing to the creation of safer, smarter, and more sustainable vehicles.

Growing Emphasis on Connectivity

The automotive software market is witnessing a growing emphasis on connectivity, marking a transformative shift in the automotive landscape. The rise of connected cars has become a focal point, with consumers increasingly demanding seamless integration



of smartphones, advanced infotainment systems, and real-time data connectivity. Automotive software plays a pivotal role in facilitating this connectivity, enabling features such as telematics, remote diagnostics, and over-the-air (OTA) updates. As vehicles become more connected, manufacturers and software developers are innovating to enhance user experiences and safety through connected vehicle technologies and unlock new possibilities for smart mobility solutions. This trend reflects the industry's commitment to shaping a future where vehicles are not only autonomous but also intelligently connected.

Transition To Electric and Autonomous Vehicles

The global automotive software market is undergoing a transformative phase, driven by the industry's transition to electric and autonomous vehicles. As H/EVs gain traction, sophisticated software solutions are vital for managing electric powertrains, optimizing battery performance, and enhancing overall efficiency. Moreover, the advent of autonomous driving technologies rely heavily on advanced automotive software, enabling features like sensor fusion, decision-making algorithms, and communication protocols for safe and efficient autonomous operation. This shift is reshaping the software landscape, emphasizing the need for intelligent solutions that navigate the complexities of electric power management and support the evolving requirements of self-driving vehicles, marking a pivotal moment in the automotive industry's evolution.

For example, Volkswagen began its first autonomous vehicle test program in Austin, United States, in July 2023. VWGoA anticipates a commercial launch of autonomous driving vehicles in Austin by 2026.

Focus on Over-The-Air Updates and Cybersecurity

The automotive software market is placing a significant focus on two crucial aspects: over-the-air (OTA) updates and cybersecurity. The adoption of OTA updates is becoming increasingly prevalent, allowing manufacturers to update vehicle software, introduce new features, and address potential security vulnerabilities remotely and efficiently. This capability enhances the longevity and functionality of vehicles, providing a seamless way to keep software current. Simultaneously, the escalating connectivity in vehicles raises concerns about cybersecurity. With an emphasis on protecting connected vehicles from potential cyber threats, the automotive software market is actively investing in robust cybersecurity solutions, ensuring the integrity, privacy, and security of the software systems that power modern vehicles.



In September 2023, Airbiquity and Tessolve collaborated to enable telematics gateways with OTA and data logging solutions, aiming to facilitate connected vehicle development and production. This partnership introduces integrated solutions that promise enhanced connectivity, real-time updates, and predictive maintenance capabilities, ultimately contributing to the creation of safer, smarter, and more connected vehicles for the future.

Key Player Landscape and Outlook

The market is characterized by the dominance of key players shaping its landscape. Companies, such as Bosch and NVIDIA Corporation, are at the forefront, contributing cutting-edge solutions for connected cars, autonomous driving, and enhanced user experiences. These industry leaders focus on strategic collaborations, mergers, and acquisitions to expand their technological capabilities and market presence. The outlook for the automotive software market reflects a continued emphasis on innovation, with a surge in demand for ADAS, in-vehicle infotainment, and cybersecurity solutions.

In February 2022, TTTech Auto, a leading provider of automotive safety software, raised USD 285 million (EUR 250 million) in a funding round from two prominent investors: Aptiv PLC and Audi. The investment breakdown includes Aptiv investing USD 228 million, whereas Audi is increasing its existing stake by USD 57 million. This latest funding round, along with a valuation of more than USD 1 billion, highlights TTTech Auto's strong position in the rapidly growing auto tech industry.

In June 2023, BlackBerry Limited announced that its BlackBerry® QNX® software is now integrated into over 235 million vehicles globally, marking a year-over-year increase of 20 million. This software is recognized as the most secure and safetycertified embedded software in the automotive industry, and it is trusted by leading OEMs and Tier 1s, including BMW, Bosch, Continental, Dongfeng Motor, Geely, Honda, Mercedes-Benz, Toyota, Volkswagen, Volvo, and others. BlackBerry QNX provides foundational software for current vehicles and the future of software-defined vehicles, covering digital cockpits, ADAS, infotainment systems, and domain controllers.

In November 2023, Andes Technology, a leading supplier of high-efficiency, low-power 32/64-bit RISC-V processors and a founding premier member of RISC-V International, and Vector, a specialist for software and automotive electronics development, announced a collaboration aimed at advancing automotive software solutions with the RISC-V architecture. This partnership combines the expertise of two industry leaders, enabling the development of integrated automotive solutions that combine AndesCore[™]



Safety-Enhanced (SE) RISC-V processor series and Vector's MICROSAR Classic basic software. The collaboration is expected to accelerate innovation and time-to-market, ultimately contributing to the advancement of automotive software solutions.



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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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