Automotive Operating Systems - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The automotive operating systems market is valued at USD 15.42 billion in the current year and is expected to register a CAGR of 23.82% during the forecast period to become USD 44.89 billion by the next five years.

Key Highlights
-The surge in the penetration of electric and autonomous vehicles, the rise in the adoption of advanced driver assistance systems (ADAS) features in cars, and the interference of advanced technologies for enhanced user interface (UI)are anticipated to drive the market's growth significantly.
-Many connectivity-related solutions are well integrated into modern cars that primarily require Internet service, especially to perform their respective functions. Thus, a car can provide connectivity through integrated and embedded connectivity services. With the help of a smartphone or a modern connectivity device, an overall impact travel spot can be created to present Internet access to all the devices within the car. Henceforth, the increase in the field of connectivity solutions will enhance the growth of the connected cars market, which will considerably augment the automotive operating systems market's growth opportunities.
-Moreover, the automotive industry has witnessed significant advancement in-vehicle connectivity, machine learning, and ADAS, allowing vehicles to communicate with other vehicles and external devices. This connectivity offers efficient traffic management, enhances safety features, and improves the overall user experience, leading to this demand for operating systems supporting these features.
-For instance, in September 2022, Qualcomm Technologies, Inc. declared that it is operational with Red Hat, a leading provider of open-source solutions, to bring functional-safety certified (ASIL-B) Linux-based operating systems to next-generation vehicles that mainly utilize Snapdragon Digital Chassis platforms, a set of scalable and open cloud-connected platforms primarily built for automotive connectivity and telematics, digital cockpit, and advanced driver assistance.
-Furthermore, to increase their consumer base and better meet their demands across various applications, significant companies

are also investing, merging with other businesses, and investing in new projects. For instance, in February 2023, Mercedes-Benz declared it's got a new operating system, MB.OS that would start appearing on new vehicles underpinned by the company's new MMA platform. Owners would witness various crucial safety features such as road-scanning lidar, especially due to the new operating system, and games like Angry Birds and social media such as TikTok would be available on the cabin-dominating screens.
-However, factors like privacy and security-related concerns are the significant challenges the global automotive operating systems market faces, which could restrict the market's growth opportunities throughout the forecast period.
-The COVID-19 pandemic emerged as a significant factor that had a profound impact on the automotive operating systems market. It exerted enormous pressure on manufacturers' stability and financial resilience, leading to adverse effects on the market's growth. However, as most companies transitioned to remote working environments and explored advancements in automotive-related services, the demand for automotive operating systems grew in recent times.

Automotive Operating Systems Market Trends

Increase in demand for connected and autonomous vehicles along with various safety features is expected to drive the market

- The surge in the integration of advanced safety and comfort features in the vehicle, like vehicle infotainment, advanced driver assistance systems, and many others, is witnessing major growth in the market. Growing production of autonomous vehicles with integrated advanced driver assistance systems (ADAS) features in the wake of increasing awareness toward the safety and comfort of passengers, as well as various government regulations mandating safety features, are expected to drive demand in the market.
- The overall dynamics of the global automotive industry are also changing at a rapid pace. Moreover, the increasing acceptance of self-driving and automated vehicles further contributes to the total growth of the market significantly. This is anticipated to bring a broad range of lucrative growth opportunities throughout the forecast period.
- Also, due to a rise in the regulations on ADAS requirements, like mandatory installation of various systems, including parking system assistance in all cars in India, China, the United States, etc., the automakers are making various significant efforts to include these features in most of their vehicles and cars. The ADAS features, which were only available in the premium cars, are now being brought to other car segments as well. These systems are being provided as optional equipment in cars other than high-end vehicles. In recent days, these crucial features are also being provided in commercial vehicles as well.
- In July 2023, oToBrite introduced its product, oToGuard, the world's first all-in-one ADAS system for heavy commercial vehicles. With only one Texas Instruments TDA4 automotive processor, it can allow more than 10 ADAS features such as AVM, MOIS (UN R159), BSIS (UN R151), BSD, FCW/HWM/PCW, LDW (UN R130), DMS, as well as L2+ADAS perception features like ACC, LKA, and more. While augmenting the overall safety of heavy commercial vehicles, it can also comply with multiple UN regulations in just one system.
- As per LexisNexis PatentSight, as of December 31, 2022, Toyota Motor's patent portfolio included 1,823 active patent families, which made the company the world's significant owner of autonomous driving patents, whereas Baidu and Honda Motor's patent portfolio included 1,209 and 908 active patent families respectively. A rise in the total count of these active patent families is thus expected to create significant growth opportunities for the market exponentially.

North America Captured a Major Market Share

- North America is expected to dominate the market in the forecast period. It is mainly due to factors like strong and established automotive company clusters and also being the home for the world's significant technology companies like Microsoft, Google,

etc., the region has been a pioneer in regard to autonomous vehicles. Particularly in the United States, self-driving cars have already been tested and used in Texas, California, Washington, Arizona, Michigan, and various other states of the United States.
- The country has been significantly maximizing the total number of launches of autonomous car models, as well as the development of vehicle autonomous systems among the players in the entire automotive industry, over the past few years. Furthermore, it is expected to continue its overall growth rate throughout the forecast period.
- In May 2022, General Motors and Red Hat Inc., the global provider of open-source solutions, collaborated to assist advance software-defined vehicles at the edge. The companies primarily expect to extend an ecosystem of innovation throughout the Red Hat In-Vehicle Operating System, which delivers a functional-safety certified Linux operating system foundation that is intended for the ongoing evolution of GM's Ultifi software platform. This collaboration between Red Hat and GM is a noteworthy moment in the convergence of the technology and transportation industries, with Red Hat's cloud-native, enterprise-grade open-source operating system boosting the overall development of GM's software-defined vehicle programs following Ultifi's initial launch. This would allow both companies to provide customers with more valuable features reliably and responsibly in a fraction of the typical development time.
- Also, in September 2023, Google Cloud and technology company Continental entered into a strategic partnership to provide flexible, innovative, and future-oriented digital solutions for the automotive industry. The partnership would combine Continental's expertise in automotive technology with Google's data and AI technologies to build a new generation of efficient, safe, and user-focused automotive solutions. Furthermore, the two parties expect to extend their strategic partnership into additional fields of collaboration in the future, with the aim of building greater in-car connectivity and experiences for the customers.

Automotive Operating Systems Industry Overview

The automotive operating systems industry features a diverse array of key players, including Microsoft Corporation, BlackBerry Ltd, Nvidia Corporation, Alphabet Inc., and Siemens AG. These companies contribute significantly to the evolution of automotive technology and operating systems.

In July 2023, TTTech Auto, a leading provider of automotive safety software, joined forces with ZettaScale Technology, an innovator in pub/sub/query protocols, to introduce the groundbreaking Zetta Auto platform. Leveraging their respective technological strengths, these two firms are pioneering a unified communication solution for the automotive sector. Initially, their focus was on enhancing the safety, performance, and predictability of Serviced-Oriented Architecture (SOA) communication. Furthermore, Zetta Auto aims to bridge the gap in communication between cloud and microcontroller systems, addressing a critical need in the industry.

In May 2023, BlackBerry Limited unveiled the QNX Software Development Platform (SDP) 8.0, a game-changing release designed to empower automakers and IoT systems developers to create more potent products at reduced costs without compromising on security, safety, or reliability. Powered by the advanced next-generation QNX operating system, SDP 8.0 represents the pinnacle of the company's embedded OS offerings. This release maximizes the performance capabilities of the growing number of multi-core processors preferred by IoT systems developers and automakers. It reflects extensive research and development efforts that leverage BlackBerry QNX's top-notch intellectual property and extensive experience in high-performance EDGE computing.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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