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Self-driving Cars Market Forecasts to 2030 – Global Analysis By Component (Hardware, Software, and Other Components), Propulsion, Level of Autonomy, Vehicle, Application and By Geography

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Abstracts

According to Stratistics MRC, the Global Self-Driving Cars Market is accounted for $31.52 billion in 2024 and is expected to reach $76.41 billion by 2030 growing at a CAGR of 15.9% during the forecast period. Self-driving cars, also known as autonomous vehicles, are equipped with advanced sensors, cameras, and artificial intelligence to navigate and operate without human intervention. These vehicles rely on sophisticated algorithms to interpret data from their surroundings, making real-time decisions to ensure safe and efficient travel. They can detect obstacles, follow traffic rules, and adjust routes dynamically. As technology continues to evolve, self-driving cars promise to revolutionize transportation by enhancing safety, reducing traffic congestion, and providing mobility solutions for everyone.

Market Dynamics:

Driver:

Demand for enhanced mobility and convenience

Autonomous vehicles offer the promise of effortless travel, allowing individuals to reclaim time spent behind the wheel. These vehicles can improve accessibility for people with disabilities or those unable to drive. Furthermore, self-driving cars can optimize traffic flow, reduce congestion, and provide more efficient transportation options. The integration of autonomous vehicles into ride-sharing services adds another layer of convenience, making transportation more accessible and user-friendly.

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Restraint:

Data security and privacy concerns

Large volumes of data gathered from several sensors and communication networks are essential to autonomous cars. This data is crucial for the car's operation but also poses risks if mishandled or breached. Cybersecurity threats and potential data misuse can undermine public trust in self-driving technology. Ensuring robust data protection measures and addressing privacy concerns are essential to gain consumer confidence and support for the widespread adoption of autonomous vehicles.

Opportunity:

Rising fuel efficiency

The goal of autonomous cars is to minimize needless braking and acceleration, optimize driving habits, and maintain efficient speeds. By lowering overall fuel consumption and emissions, these features help to increase fuel efficiency. Greener transportation options are being pushed in tandem with international initiatives to address climate change and advance sustainable practices. Self-driving car usage is anticipated to rise as fuel economy becomes more important, due to both economic and environmental advantages.

Threat:

Job displacement concerns

The automation of driving tasks could lead to job losses in industries reliant on human drivers, such as trucking, taxi services, and public transportation. The potential impact on employment raises ethical and economic questions that need to be addressed. Policymakers and industry leaders must find ways to mitigate the negative effects of job displacement through retraining programs and new job opportunities in the evolving automotive and technology sectors.

Covid-19 Impact

The COVID-19 pandemic had a mixed impact on the self-driving car market. Supply chain disruptions and economic uncertainties slowed down production and

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development1. However, the pandemic also highlighted the benefits of autonomous vehicles, such as contactless delivery and transportation for essential workers. Companies adapted by focusing on software development and remote testing1. Overall, the pandemic underscored the potential of self-driving technology in enhancing safety and efficiency.

The hardware segment is expected to be the largest during the forecast period

The hardware segment is expected to account for the largest market share during the forecast period, due to its critical role in the functioning of self-driving cars. Advanced sensors, cameras, and LiDAR systems are essential components that enable autonomous vehicles to perceive and interpret their surroundings accurately. As the technology matures, investments in hardware development and production are anticipated to grow, reinforcing the segment's dominance in the market.

The hybrid vehicles segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the hybrid vehicles segment is predicted to witness the highest growth rate, due to their dual power sources and improved efficiency. Hybrid self-driving cars can switch between electric and conventional fuel modes, offering greater flexibility and extended range. This versatility makes them an attractive option for consumers seeking eco-friendly and cost-effective transportation solutions. The increasing focus on sustainability and the growing availability of hybrid models are expected to drive the segment's rapid expansion.

Region with largest share:

During the forecast period, Asia Pacific region is expected to hold the largest market share, due to its significant investments in autonomous vehicle technology and infrastructure. Countries like China, Japan, and South Korea are leading the way in research, development, and deployment of self-driving cars. The region's robust automotive industry, coupled with government initiatives to promote smart transportation, supports the market's growth. Additionally, the high population density and urbanization in Asia Pacific create a strong demand for efficient and innovative mobility solutions.

Region with highest CAGR:

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Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to its strong technological base and supportive regulatory environment. The U.S. and Canada are home to many leading tech companies and automotive manufacturers driving advancements in autonomous vehicle technology. The region's focus on innovation, along with public-private partnerships and investment in smart infrastructure, accelerates market growth. The adoption of self-driving cars in ride-sharing and logistics services further boosts the market's expansion in North America.

Key players in the market

Some of the key players profiled in the Self-Driving Cars Market include Toyota Motor Corporation, Tesla, BYD co., ltd., Volkswagen Group, Ford Motor, General Motors, Mercedes-Benz Group Ag, BMW Group, Hyundai Motor Group, Nvidia Corporation, Robert Bosch Gmbh, Continental AG, ZF friedrichshafen AG, Denso Corporation, Magna International Inc., Nxp Semiconductors, Renault Group, Aisin Corporation, and Hitachi Automotive.

Key Developments:

In February 2025, TOYOTA GAZOO racing launches evolved GR Corolla in Japan. TOYOTA GAZOO Racing (TGR) has started accepting orders for its evolved GR Corolla, a model that leverages insights gained by competing in motorsports.

In December 2024, Volkswagen AG –with its brands Volkswagen Passenger Cars, Volkswagen Commercial Vehicles and Group Components and employee representatives have concluded a joint agreement entitled 'Zukunft Volkswagen' after intensive negotiations

Components Covered:

- Hardware
- Software
- Other Components

Propulsions Covered:

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Internal Combustion Engine (ICE) Vehicles

Hybrid Vehicles

Electric Vehicles

Hydrogen Fuel Cell Vehicles

Other Propulsions

Level of Autonomy Covered:

Level 0 (No Automation)

Level 1 (Driver Assistance)

Level 2 (Partial Automation)

Level 3 (Conditional Automation)

Level 4 (High Automation)

Level 5 (Full Automation)

Vehicles Covered:

Passenger Vehicles

Commercial Vehicles

Other Vehicles

Applications Covered:

Ride-Hailing & Robo-Taxis

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- Personal Mobility
- Public Transport
- Freight & Logistics
- Other Applications

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China

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India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

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- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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