

## Innovations in the Automotive Steer-By-Wire System Market A Path to \$5.8 Billion, Globally, by 2031 | says AMR

WILMINGTON, NEW CASTLE, DE, UNITED STATES, December 6, 2024 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled, "Automotive Steer-By-Wire System Market," The automotive steer-by-wire system market was valued at \$2.7 billion in 2021, and is estimated to reach \$5.8 billion by 2031, growing at a CAGR of 8.5% from 2022 to 2031.



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Automotive steer-by-wire is a specially designed technology which is designed for its application in new & advanced vehicles which has the capability to increase the performance of the vehicle. Automotive SbW system installed in a vehicle eliminates the mechanical steering column installed in a vehicle & introduces the sensor & module based steering system within the vehicle thus increasing the efficiency of the vehicle. Numerous companies such as JTEKT Corporation, HL Mando Corp., Nexteer Automotive & others have been introducing SbW system to their vehicles which reduces the overall weight of the vehicle & at the same time increases the efficiency of the vehicle.

Moreover, the steer-by-wire technology installed in a vehicle uses electronic control system, which enables the driver to control the direction of the vehicle through electronic signals & sensors. This technology offers several advantages such as better handling, reduced vehicle weight, increased fuel efficiency, and greater design flexibility of the vehicle.

The rising concerns about vehicle safety & efficiency, increase in the need for ADAS, and rise in adoption in electric & autonomous vehicles supplements the growth of the automotive steer-by-wire market across the globe. However, high maintenance costs and hesitation towards the adoption of SbW system hinder the market growth. Conversely, superior driving experience,

increase in demand for more advanced & efficient steering systems in the automotive industry, and assistance offered by steer-by-wire systems to disabled & elderly people are anticipated to provide lucrative opportunities for the growth of the market across the globe.

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For instance, in September 2019, Canoo, the Los Angeles-based company, launched its first model, Canoo autonomous vehicles. It is equipped with a combination of steer-by-wire and advanced driving assistance system (ADAS) that reduces the overall weight of the vehicle as well as offering more responsive & smoother driving experience and more interior space for the vehicle. Similarly, in October 2021, Toyota introduced its first electric car, the bZ4X. This car features new steer-by-wire system, which enables lock-to-lock angle set approximately 150°, thus eliminating the need to change the grip when operating the steering wheel and reducing the burden on the driver when turning, in parking lots and on winding roads.

The integration of steer-by-wire systems has resulted in significant improvements in vehicle safety and efficiency. For instance, in July 2022, ZF introduced its advanced steer-by-wire technology for the front axle. According to the company, this new, advanced steer-by-wire technology provides comfort and safety features, such as autonomous emergency evasive parking or maneuvers in confined spaces. Furthermore, these systems can be used to enable features such as lane departure warning and collision avoidance, which can help prevent accidents and improve vehicle safety.

In addition, steer-by-wire systems can improve vehicle efficiency by reducing the amount of power required for steering. Traditional steering systems are designed to provide a physical connection between the steering wheel and the wheels, which can result in a significant amount of energy loss. By using steer-by-wire systems, automakers can reduce the amount of power required for steering, resulting in improved fuel efficiency and reduced emissions. Heavy-duty trucks require significant power to operate, and fuel efficiency is a major concern for fleet operators. By integrating steer-by-wire systems, automakers can reduce the weight of the vehicle and improve the efficiency of the steering system, thereby resulting in significant fuel savings.

For instance, in September 2022, ZF introduced its advanced new electric power steering (EPS) system for trucks, coaches, and city buses. The EPS has been prepared for steer-by-wire and up to level 5 autonomous driving. Thus, the demand for steer-by-wire systems in the automotive industry is driven by safety concerns, fuel efficiency, and driver experience.

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Based on component, the steering actuator segment held the highest market share in 2021, accounting for around one-third of the <u>global automotive steer-by-wire system market revenue</u>. This is due to the fact that, steering actuator have an increased application in vehicle steering

system. However, the angular sensors segment is expected to dominate the market in terms of revenue and projected to manifest the highest CAGR of 10.0% from 2022 to 2031. The angular sensor is a critical component in automotive steer-by-wire systems, providing the necessary feedback to the electric control unit (ECU) to control the steering actuator and ensure safe and efficient steering.

Based on propulsion type, the internal combustion engine (ICE) segment held the highest market share in 2021, accounting for more than half of the global automotive steer-by-wire system market revenue. This is due to the fact that ICE vehicles require a power steering pump to provide the necessary hydraulic pressure for the steering system. However, the electric segment is expected to rule the roost throughout the forecast period and is projected to manifest the highest CAGR of 10.7% from 2022 to 2031. The growth is attributed to the increased inclination of electric vehicles equipped with advanced components across the globe.

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Based on region, Asia-Pacific held the highest market share in terms of revenue in 2021, accounting for more than half of the global automotive steer-by-wire system market revenue, and is likely to dominate the market during the forecast period. The growth is attributed to an increase in demand for more advanced & efficient steering systems in the automotive industry. However, the Europe region is expected to witness the fastest CAGR of 10.0% from 2022 to 2031, owing to surge in the adoption of automotive steer-by-wire system in new vehicles has launched in this region.

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