

Detours on the road to self-driving cars



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DESPITE THE HYPE, IT COULD BE DECADES BEFORE YOUR CAR DRIVES YOU

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CTW FEATURES

While most auto industry insiders and observers believe that self-driving cars eventually will rule the roads, there's still no timeline as to exactly when we'll all be able to just sit back and enjoy the ride.

For their part, the industry analysts at the Boston Consulting Group in Boston, Massachusetts, see a rosy future, with self-driving cars accounting for perhaps a quarter of global sales by 2035 (assuming a lack of major glitches and delays along the way). Taking the driver out of the equation – human error is said to be at the root of 90 percent (or more) of all collisions – pundits predict autonomous vehicles could prove to be so accident-free they could eventually drive auto insurance carriers out of business.

Consumers, on the other hand, seem less enthusiastic about giving up the wheel anytime soon. Despite the gradual acceptance of semi-autonomous features like adaptive cruise control (the latest such systems can even operate at stop-and-go speeds), lane keeping systems (to keep the car centered within highway lane markers) and forward collision auto-braking (to prevent or reduce the severity of collisions), a recent survey conducted by Kelley Blue Book in Irvine, California, found that 75 percent of consumers don't think they'll ever own a self-driving car.

Younger motorists might see a rosier future than their elders in this regard, but they're still not overly enthusiastic about autopilot cars. A market research study conducted by J.D. Power in Westlake Village, California, determined that only 41 percent of Gen-Xers and just 23 percent of Baby Boomers say they trust self-driving technology.

"Acceptance can be increased with exposure over time and experience with automated technologies," says Kristin Kolodge, executive director of driver interaction & HMI (human/machine interface) research at J.D. Power. "But trust is fragile and can be broken if there is an excessive number of incidents with automated vehicles."

Drafting workable regulations and standards governing self-driving cars likewise remain a big hurdle to fully autonomous vehicles, with industry representatives and politicians recently calling for the federal government to establish an overriding set of rules to avoid a hodge-podge of state legislation that could delay the technology's development.

As if legislative and legal issues weren't difficult enough to overcome, according a just-issued report authored by Nidhi Kalra and Susan M. Paddock for the Rand Corporation in Santa Monica, California, it could take decades of controlled testing before automakers will be able to conclusively demonstrate that autonomous cars are as safe – or safer – than human motorists under a full range of circumstances.

In fact, the report warns it may be nearly impossible to demonstrate the reliability of self-driving cars with any certifiable degree of precision. "Even if the safety of autonomous vehicles is low – hundreds of failures per 100 million miles, which is akin to human-driven injury and crash rates – demonstrating this would take tens or even hundreds of millions of miles, depending on the desired precision," according to the Rand report.

And that could be just a start. "For low failure rates – 1 per 100 million miles – demonstrating performance to any degree of precision is impossible – requiring billions to hundreds of billions of miles."

Running the math a bit further, Kalra and Paddock determined it would take approximately 5 billion miles of testing to demonstrate that the failure rate of auto-piloted cars is statistically lower than those with human drivers. "With a fleet of 100 autonomous vehicles test-driven 24 hours a day, 365 days a year at an average speed of 25 miles per hour, this would take about 225 years ... (which is) an impossible proposition if the aim is to demonstrate their performance prior to releasing them on the roads."

So don't expect to give up your driver's license any time soon.