Big data roadblocks will slow driverless cars until 2040, analyst says

IDC analyst focusing on autonomous vehicles says big data is one of the biggest barriers to adoption

By **Colin Neagle**, Network World | Big Data, self-driving cars

March 18, 2013, 9:43 AM — The excitement over recent advancements in autonomous vehicle technology has elicited some optimistic expectations.

Google, whose driverless car prototype has driven more than 300,000 miles without an accident, says it hopes to get the cars on the road within three to five years. Others in the industry have been more realistic in their predictions. Bill Ford, executive chairman of Ford Motor Co., says fully autonomous vehicles will be a common sight on roads in the U.S. by 2025.

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However, even that might be a stretch, according to IDC's program manager for product lifecycle strategies Sheila Brennan. Leading a new effort in the research firm to gauge the potential time to market for autonomous vehicles, Brennan says Ford and Google are both accurate in their prediction that driverless cars will be street-ready within the next few years. But she sees too many barriers, and says adoption will more likely reach the mainstream around 2040.

"I think there are a lot of regulators and a lot of privacy and security issues that need to be overcome prior to that, a lot of interoperability issues that need to be overcome," Brennan says. "And the automotive industry in general moves very slowly in many senses." Privacy, cybersecurity and safety are the first concerns that come to mind when autonomous cars are discussed. But another problem with just as much of an impact lurks around the corner, and leaves plenty of questions to be answered.

"It's extremely valuable data," Brennan says. "I can't argue that point. That data will be worth a lot, and it's still not clear, again, how the consumer will play out."

Some manufacturers have already established direct communication regarding privacy and the use of data generated by autonomous cars, Brennan says. In one case, Brennan says the manufacturer asked a driver to sign a waiver granting the manufacturer permission to use the car's data, which not only shows where the car went but how fast it was traveling, how the car's parts were operating and so on. Manufacturers are likely to stick with this process as they begin rolling driverless cars out for retail sale.

"So it's very likely automakers are going to be, when they're selling these cars, asking in this big stack of paperwork, 'sign this, sign that, here, sign your privacy away,'" Brennan says. "And that could become the standard. That could be the norm."

This, Brennan says, could go one of two ways. Consumers, especially those in the younger demographics whose social media-influenced upbringing has made them less sensitive to privacy concerns, may oblige the manufacturer's request in exchange for convenience. But at the same time, manufacturers could face a substantial opposition from privacy-minded consumers, who are only going to become more educated on the implications of big data on privacy in the years it takes for driverless cars to develop.

"I think that we might have to get really innovative in the space," Brennan says. "So it might come down to the consumer saying 'we want one third-party company that we give permission to our data, and then on a case-by-case basis we decide who gets access to it.'"

How the relationship between auto manufacturers and consumers evolves in the next decade will likely dictate how quickly driverless cars make it onto the roads. Complicating the situation is the immense value of the data. Driverless cars generate extremely detailed information on consumer behavior, which will not only be used by auto companies and insurers but also by advertisers and municipalities, Brennan says. Whether manufacturers -- or whoever ends up owning the data -- are willing to respect consumer privacy at the expense of potentially lucrative data-sharing agreements still remains to be seen.

"The level of variety and velocity and partnering that will be required to manage this level of data, and then also kind of dealing with the ownership issues, I think those are the greater challenges," Brennan says. "I think it's really more how do we partner and pull the data together in a meaningful way and deal with the partnership issues to get to that point where we can actually meaningfully look at the data and analyze it."

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