

Why a Future Ride in a Self-Driving Car Could Be a Trip to Advertising Hell

Self-driving cars are a marketer's dream come true, and a possible nightmare for passengers.

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There's nothing marketers love more than a captive audience. And people don't get any more captive than when they're sitting in a car. That's a powerful motivation for companies developing automated cars, beyond the technical innovation that has made such a vision possible.

From Google to Tesla to traditional automakers, it seems everyone today is scrambling to get in on the automated vehicle action. Even Apple is rumored to be working on a car of its own and has reportedly developed a giant virtual windshield that recognizes gesture controls to operate it.

Apple and Google, of course, already build phones that can advertise to us wherever we are, including in the car. And automakers already build cars that take us wherever we want to go, and are taking more and more control of driving along the way. So what's the big deal? Well, imagine a car that can send you a coupon for Starbucks, place your order, and drive you there to pick it up when you're in the neighborhood.

Wireless carriers such as AT&T and Sprint have made no secret of their desire to monetize your time in the car. Both have divisions devoted to selling connectivity to automakers. Their intent is to own a piece of the connection, and even the interface inside the car. Revenue from these data connections could reach \$36 billion in by 2025, according to a report by Navigant Research. Other estimates reach much, much higher: as high as \$200 billion by 2020, according to a report by McKinsey & Co.

Google, the largest advertising agency the world has ever known, is also at the forefront of developing self-driving cars. That's no coincidence. And with Google's broad ambitions and technical competence, its automated cars have a game-changing advantage over other systems: Its cars are being developed to drive in the city. Most other automated-car technologies turn off below 30 mph. (A few, such as Volvo's City Safety, operate only at low speeds.) Yet every trip starts and ends on surface streets. So if your car can't drive in the city, it can't make the trip. (Some automakers, such as Volkswagen Group and its Audi division, as well as automotive parts giant Delphi, are now also actively developing automated cars that can drive in the city. Check out this [report](#) of a near miss between one of Google's Lexuses and a Delphi prototype.)

I had a chance to ride around in the company's automated Lexus last year, and I can report that it works pretty seamlessly. These Google cars so far still had drivers on-board to assist when the car encounters unfamiliar obstacles. (Traffic cops standing in the middle of the

road holding up or waving their hands are one example Google says it had to address.) But the latest Google cars don't have a steering wheel or pedals a driver could use. They are classified as low-speed neighborhood vehicles, and can't even drive on the highway. They are already logging miles around Mountain View, Calif., near the massive Googleplex.

Traditional automakers are taking a different approach to self-driving cars; instead of the driver assisting the car, most are building systems into their cars that assist the driver but can operate autonomously only in limited situations, such as on the highway or in parking lots. Those environments are much easier for algorithms to manage than chaotic city streets.

Tesla recently announced its own automated driving system being rolled out in its Model S cars this summer called Autonomous mode, which not only allow the car to match the traffic speed, follow its lane and pass, but also allows the car to park and retrieve itself with no occupants as long as it's on private property. Perhaps it could shadow you around the mall, from parking space to parking space, to be sure it arrives outside the nearest entrance when you finish shopping. BMW recently announced a similar system on its new 7 Series. The "driving safety aids" already in many luxury cars fall mainly in this camp. They can control some driving functions in limited situations, such as steering to keep the car on the road or braking before an imminent collision. These are the active safety systems used, for example, in filming this [Hyundai ad](#). But these systems are by definition reactive. They can't anticipate the best action more than a few seconds ahead.

The next step in traditional automakers' plans to make cars think more like human drivers is to give them a better view into upcoming events, rather than being merely reactive. Wi-Fi communications between vehicles and with traffic control devices such as stoplights, crosswalks and railroad crossings are expected to bridge this gap. This so-called known as V2X (vehicle-to-vehicle or vehicle-to-infrastructure) communication will tell cars when and where to go, stop and turn.

Which device, and which other cars your car communicates with gives a very accurate picture of where you drive. And because the equipment is safety related, you can't just turn it off to avoid being tracked like you could your cell phone.

Yet V2X communication would have to be installed in a substantial majority of cars and intersections for it to work. And it takes more than 15 years for enough new cars to replace older models for this to happen. Few states and cities are making heavy investments in building new transportation infrastructure in today's political environment.

It is unclear whether Google plans to sell its own cars or sell its automated driving system to another automaker, such as Tesla, or even Apple, which is now rumored to be developing its own car.

Apple and Google have also recently released in-car versions of their mobile operating systems, Apple CarPlay and Android Auto, to bring cellphone functionality into your car's dashboard. I have experienced both systems, and while they come across as 1.0 releases, they dramatically expand the capability of cars' native in-dash infotainment systems — and

give drivers every incentive to keep their cellphones and location services enabled.

All these developments are part of a larger transformation of the auto industry from building hardware to providing services. After all, if a car can pick you up and drop you off anywhere you want, why do you need to own it? The prospect of consumers purchasing rides, rather than cars, has traditional automakers scrambling for slices of that \$36 billion to \$200 billion connectivity pie. After all, what are mobile devices, if not the ultimate mobility product? What should scare all of these groups is a new project recently announced in Japan by a mobile gaming company called DeNA (pronounced: “DNA”), which says it will create driverless taxis around the country for the Tokyo Olympics in 2020.

Ride-sharing service Uber is also partnering with Carnegie Mellon University to build ride-sharing taxis that cut out the driver altogether.

Ubiquitous driverless taxis are the end game for all these efforts. Such a system could threaten not only taxis and ride-sharing services, it could disrupt the entire transportation industry and even the very roots of the American car ownership model. If you can summon a car to whisk you anywhere you want, any time, why buy one that will sit in your driveway for most of the week?

The promise is that passengers could work, play games, watch movies, or even drink alcohol in the car. Along the way, the ad for the Cheesecake Factory could appear in the Netflix show you’re watching, and if you click on it, Netflix could place your order and the car would drive you to pick it up. The Cheesecake Factory, Netflix, Google, the automaker, and the Sprint or AT&T communication service provider could all shave off a slice of revenue from your transaction.

Perhaps more importantly, the National Highway Traffic Safety Administration estimates that automated cars could eventually save most of the approximately 35,000 lives lost, and hundreds of thousands of injuries in traffic accidents each year. The vast majority of them are attributed to human error.

Certainly there are still a lot of hurdles along the track to self-driving cars. So far only six states allow self-driving cars, although another 21 are considering legislative action. Not least among the questions to be answered is who would be held liable for an accident involving self-driving cars. (So far Google’s self-driving cars have been hit by several other drivers but have never caused an accident.)

Lawmakers also recognize consumers’ privacy concerns, and have written laws that protect the ownership of private location-based information. But only a few states have passed them, and courts can always subpoena such information anyway.

Those laws can’t come quickly enough. According to the Navigant report, 80 to 90 percent of cars will be equipped with some sort of wireless Internet or vehicle-to-infrastructure connection by 2020. Coincidentally, that’s also when Google plans to have its first truly self-driving car on the road.

Whether automated taxis develop that quickly is anyone's guess. But the implications for the safety, convenience and privacy of those captive vehicle occupants are transformative. And isn't that most of us?