Autonomy's Roadkill: The Path to Driverless Cars Will Be Strewn with the Carcasses of Big Industry

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Automakers and tech companies alike seem to be pushing us toward an autonomous future in which streamlined, sustainable-bamboo-trimmed robotic taxis and luxury cruisers zip within inches of one another as they reel around turns and through crowded metropolises like pulses of light beamed through fiber-optic cables.

The bots won't crash as often as humans, but that doesn't mean they'll be infallible. The high-profile hacking of a Jeep Cherokee last summer calls attention to a particularly scary - vulnerability in an interconnected web of self-drivers. And it's not hard to imagine far bleaker worst-case scenarios: All vehicles make an immediate hard left when Doctor Evil presses CTRL+L, and so forth. But long before we reach that level of dystopia, autonomous vehicles will prove to have their own negative social impacts. Here are a few:

JOB LOSS

At the University of Oxford in England, the Oxford Martin School's Programme on the Impacts of Future Technology recently predicted that computerization would eliminate nearly half the jobs in the U.S. over the next 20 years. Autonomous vehicles may soon replace human drivers to our north. Development companies working Canada's oil sands plan to lay off thousands of off-highway mining-truck drivers by the end of the decade in favor of automated trucks that render human operators unnecessary. When autonomy expands to on-road services here in the U.S., some 200,000 taxi drivers and 3.4 million truck drivers will be at risk. Daimler, which owns the truck brand Freightliner, is already testing autonomous big rigs. In an interview with a German newspaper early last year, board member Wolfgang Bernhard predicted that production of such trucks is only "two, three years away."

MUNICIPAL REVENUE

City governments have long relied on revenue from parking fees and traffic citations. Researchers at the Brookings Institute point out that a driverless fleet obeying the letter of the law will cut into the billions that miscreants currently pay into public coffers. There's a pattern of slow governmental reaction here, says the Brookings team. "If you look at services like Uber and Lyft, most industries and local governments viewed them as passing fads when they first entered the marketplace," says Kevin Desouza, senior fellow for the Center for Technology Innovation at Brookings. "By the time they reacted, it was way too late and they were playing catch-up."

Merely streamlining parking, his team notes, can starve these revenue streams. In 2013, smartphone-operated parking meters, while good for consumers, led to a $6 million decrease in ticket revenue in Washington, D.C., alone. It's not impossible to rethink taxes and fees, but establishing new ones when old ones are obsolete is a difficult political undertaking. Not many voters favor new taxes or fees, even if the old ones have gone away.

Concept 26: A Dystopian Utopia

The auto industry's solution for distracted driving is to allow the person in the front-left seat to text or email unencumbered by vehicular responsibility. Named for the time, in minutes, of the average American commute, **Volvo's Concept 26** is a look at how the driver's experience might change when he or she transitions to chief passenger. In addition to a drive mode, it has two autopilot settings that rearrange the driver's furniture. In the optimistically named "create" mode, the seat and center console slide rearward, physically separating the driver from the controls—but not the centrally mounted tablet, which follows him rearward so he can do all the creative things one does on a tablet, but mostly create work emails. In "relax" mode, the steering wheel retracts, a cowl closes over the instrument panel, the driver's seat reclines, a leg rest deploys, and the passenger's-side dash rotates upward to reveal a 25-inch screen—ostensibly so you can relax while watching *Pixels*, but really so your boss can claim that 26 minutes for teleconferencing.


DRIVE


CREATE


RELAX

INSURANCE INDUSTRY

Testing has shown that computers, which make few mistakes, are safer drivers than humans, who make plenty. That should mean lower accident rates in the future, a benefit to everyone. But while they're protecting drivers from catastrophic financial loss, insurers do a pretty brisk business. And they, too, will be adversely affected by the expected reduction in accidents.

KPMG, an insurance auditing company, released a report last summer that says, "The conversion to autonomous vehicles may bring about the most significant change to the automobile insurance industry since its inception." Fewer accidents implies lower premiums, and for insurance providers, less revenue. KPMG says the $200 billion the auto-insurance industry collects in private and commercial premiums per year could end up shrinking by more than 60 percent. "There will be winners and there will be losers," says Jerry Albright, principal of KPMG's Actuarial and Insurance Risk practice. "There will be fewer companies than there are today. The question is, who will survive?" (Don't feel too bad for your insurer; see "Ensuring Wrath," below.)

MAXIMUM OVERDRIVE

Last spring, Freightliner was granted a license to test autonomous semis on public roads in Nevada. It joins Audi and Google, among

others, though no other vehicle matches the terror factor of a sentient tractor-trailer.

MANUFACTURING

As driverless vehicles take root, futurists see autonomy reshaping the country as completely as did the automobile itself. Brian Johnson, director of equity research at Barclays Capital, says that autonomous vehicles shared across family and community lines will displace much of the current fleet of privately owned cars. Annual auto sales in the United States could decline by as much as 40 percent, and there would be a 60-percent drop in the total number of vehicles on the road. Driverless vehicles, using the same sort of technology that today connects Uber drivers with people needing rides, could be used to their maximum potential instead of sitting idle most of the time, as the majority of vehicles do today. Johnson predicts that Ford and GM, which have factories all over North America, will have to cut production by more than half as conventional vehicles cede the roads to autonomous ones.

Johnson, the Brookings researchers, and others all gravitate toward the conclusion that a major shift in the way we get around is on its way. The details—legal, social, and otherwise—will have to be figured out. Brookings' Desouza says a lack of preparedness and an unwillingness to accept autonomous vehicles will be the main reasons things won't go smoothly. [*Guilty as charged—Ed.*] KPMG's Albright agrees, pointing out that executives and government leaders would need to adapt to an economic shift that's already in the works. "Change is going to happen," he says. "It's going to come sooner than most people think."

Ensuring Wrath

A damning report released last year by *Consumer Reports* revealed that auto insurers use Big Data to learn their customers' credit histories and spending habits, relying more on those factors than driving history to determine premiums.

Insurance regulations, practices, and costs vary from state to state, but CR compiled more than 2 billion price quotes from every ZIP code in the country, finding consistently unscrupulous practices nationwide. In Florida, for example, a motorist with a clean driving record and excellent credit would pay an average annual premium of $1409. The same driver with a poor credit rating would pay $3826. Even with a drunk-driving conviction, a driver with excellent credit would pay an average of just $2274.

It gets worse. In a practice called "price optimization," insurers gradually hike customers' rates if Big Data indicates that they're unlikely to notice or look elsewhere for a better deal. If you're someone who never complains and tolerates unexplained rate hikes, you'll almost certainly

pay—unless you live in California, Florida, Maryland, Ohio, Vermont, or Washington, states that currently ban the practice.

Consumer Reports called credit scoring a tax on the poor, pointing out that people who can't afford high premiums often go without protection against financial calamity. The National Association of Mutual Insurance Companies defended the industry thusly: "Low-income consumers already spend more on alcohol and tobacco products or audio and visual equipment and service than they pay for auto insurance." The Consumer Federation of America, an advocacy group, refuted that claim using figures from the federal government's most recent Consumer Expenditure Survey. By adopting such vitriol as a stance, insurers don't need *CR* to damn them. They're doing just fine themselves.