

SMART DRIVING CARS



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5th edition of the 5th year of SmartDrivingCars

Friday, March 3, 2017



[Buffett has an interesting theory about why self-driving cars will hurt the insurance industry](#)

E. Gurdus, Feb 27, "The self-driving car business could become a major threat to insurance companies when the technology hits the market, billionaire investor Warren Buffett told CNBC's "Squawk Box" on Monday.

If autonomous vehicles prove to be safer than regular cars, insurance costs will plummet, and by the time roads are filled with self-driving cars insurers like Geico will have taken a serious hit, Buffett said...

"If I had to take the over and under [bet] ten years from now on whether 10 percent of the cars on the road would be self-driving, I would take the under, but I could very easily be wrong," he said...." *[Read more](#) Hmmm...Really shouldn't go against Buffet; however, he's going to be smiling all the way to the bank. I just don't see how the premise implies Geico takes a serious hit. I tell everyone that I don't understand insurance. I guess I just don't understand insurance. :-)*

*I suspect that by **cars** he means cars + light trucks for which there are about 250M currently registered in the US with 38% being greater than 10 years old. Assuming these basic numbers remain roughly constant: of the 155M vehicles sold in the next 10 years, 25M or 16% would need to be 'Self-driving'. Since we are starting from a zero base with zero production, we are going to need to be upwards of a 30% adoption rate in the 10th year in order to have populated 16% of the fleet through that year. So, I agree with Warren wrt '**Self-driving**': "I would take the under, but I could very easily be wrong" Wrt '**Safe-driving**, I would take the over, because the early numbers are attainable, especially if Insurance comes on board. Wrt '**Diverless**': No way unless they are manufactured by a non-traditional entity that is totally disruptive in years 8, 9 and 10. Alain*



[Infrastructure: No Specifics on Infrastructure, but Reforms Can Pave the Way](#)

M. Seargent, Mar 1, "Although Trump's speech did not yield many hard details, it's clear that enacting a "new program of national rebuilding" to fix the nation's "crumbling" roads, bridges, tunnels, airports, and railways continues to be a priority for him. (It must be noted that federal data show that the real state of [highways](#) and [bridges](#) is solid and is improving)...When it comes to fixing the nation's infrastructure, he can keep his promise by seizing the opportunity and taking a [better road](#) to restoring American infrastructure..." [Read more](#) *Hmmm...Awaiting the details, but the Heritage recommendations for US DoT in the next 10 years in the appendix of [Blueprint for Reform](#) (p 85, 130) aren't encouraging. The private sector is going to have to do it.* *Alain*

GOVERNING

THE STATES AND LOCALITIES

[Despite Trump's Infrastructure Pledge, Governors Expect Little Federal Spending](#)

S. Leavenworth, Feb 28, "President Donald Trump said again Monday that he was preparing to spend big on infrastructure. But even as he spoke, administration officials and congressional leaders were telling governors to expect little new federal investment in roads, bridges, transit systems, dam repairs and other water works. Instead, the administration and congressional leaders plan to take a more incremental approach of spurring public-private partnerships _ such as toll roads _ by loosening environmental reviews, removing other red tape and possibly approving new tax credits. While some governors say private projects will provide little help in repairing their aging infrastructure, others say they will be forced to embrace the fiscal reality.... [Read more](#) *Hmmm...As with any national system, there is cross-subsidization throughout the network. Some segments are blessed with enormous volumes, others, not so much. Using tolls instead of gas taxes to achieve that balance seems to simply be asking for problems from the heaviest player: interstate commerce (trucking) and the tourism industries. Seems as if there are better fights to fight. The gas tax is simple and it exists. Lowering it wont feel like a tax cut and tolling seems to impact everyone.* *Alain*

Forbes

[Waymo's Uber Lawsuit May Be Start Of A Google Patent War](#)

a. Ohnsman, Mar 1, "Google's self-driving car project that began in 2009 is well known as the incubator that kickstarted a multi-billion dollar race to perfect this 21st automotive technology. Along the way, it also helped Google amass hundreds, perhaps thousands, of patents covering every aspect of software, hardware and on-road behavior for automated vehicles. The blistering lawsuit filed against Uber and its Otto driverless truck unit by Alphabet Inc.'s Waymo alleging trade secret theft, based on alleged actions by a former Google engineer now at Uber, also makes clear that the company intends to aggressively protect that patent trove and big head start...

Google has never revealed how much it's invested to master self-driving cars,*Hmmm...In it less than 10 years; couldn't have spent more than \$100M in any year. So way less than \$1B;*

probably less than \$0.5B. What a bargain for... A cursory review by Forbes shows that Google has been granted 260 U.S. patents that specifically refer to autonomous vehicles (including some for aerial drones) and 176 patents that reference designs and usage for LiDAR. Given many years of work by Google Maps and Alphabet's machine learning and robotics teams at its X skunkworks facility, presumably its intellectual property goes far beyond patents that clearly relate to self-driving cars. ... "Right now, what those DMV figures tell you is they are in a class by themselves," Alex Lidow, CEO of EPC... "[Read more](#) *Hmmm...We can't be Volkswagonish about IP or anything we do wrt SmartDrivingCars. Let's all behave. It is still very early and there is enough value and benefit for everyone here. Alain*

THE DRIVE [Watch This Tesla Autopilot 2.0 Fail Terribly in a Model S](#)

M. Guy, Feb 28, "For well over a year, the Tesla Autopilot system has been the controversial standard-bearer of autonomous driving technology. Using a combination of RADAR and software that is all but bulletproof, its capabilities have won over skeptics and fanboys alike and kept Level 1 to 3 heavyweights like Mercedes and BMW on their toes.

Which is why YouTube videos like this one, in which the "Scott S." takes his Model S with HW2/AP2 and updated with the software build 17.5.36 out for a drive at night, in dry weather on a windy road. According to his description, he has autosteer and traffic-aware cruise control (TACC) engaged on his local loop road. And yet the car seems to be struggling to maintain the lane, despite a clearly marked double yellow and consistent curbing on the right side of the road.

Tesla still leads the field in ADAS (Advanced Driver-Assistance Systems), and the cloud-based AI that Tesla is developing will eventually mitigate the dangers demonstrated so clearly in this video. Until then, Tesla folks: hands on the wheel please. [Read more](#) *Hmmm...Mike, wise advice. Alain*

THE WALL STREET JOURNAL.

WSJ

[Self-Driving-Truck Startups Race to Take On Uber](#)

T. Higin, Mar 2, "... While much of the autonomous-vehicle attention has centered on the race to embed the technology in everyday cars—...—is ripe for change.

The industry is struggling to find drivers, regulations governing working hours are squeezing profits, and some artificial-intelligence experts believe computer brains can more easily master highways than complicated city streets. "It's an industry that has clear need, where there is a substantial driver shortage, particularly of drivers that are experienced who are safe and talented," said Alex Rodrigues, a 21-year-old robotics expert, last week. He was sitting in the back of a royal blue Peterbilt truck, retrofitted by his company, San Francisco-based Embark, with two laser sensors and cameras to test self-driving software on public roads in Nevada and on a closed course in California.

[Embark](#) and fellow startups Starsky Robotics and Drive.ai all emerged in the past week with details about their plans. Their engineers, bearing top artificial-intelligence pedigrees, are

seeking a way to replace drivers in commercial fleets...[Read more](#) *Hmmm...Certainly to improve safety, substantially reduce liability expectations, extend hours of service and greatly improve the driver's work environment. :-) But to remove the driver from the class-8 truck... Not going to happen in anybody's investment cycle! Alain*

AP

[INFLUENCE GAME: GM bill is self-driving and self-interested](#)

J. Lowy, Feb 23, " WASHINGTON (AP) -- With states seizing the initiative on shaping the future of self-driving cars, General Motors is trying to persuade lawmakers across the country to approve rules that would benefit the automaker while potentially keeping its competitors off the road. The carmaker denies trying to freeze out other brands, but legislators in four states say GM lobbyists asked them to sponsor bills that the company's competitors contend would do just that. The bills set a blueprint for the introduction of fully self-driving cars that are part of on-demand, ride-sharing fleets, but they must be owned by an automaker..." [Read more](#) *Hmmm...One needs to be very careful here. Self-driving is NOT Driverless. It is also not Safe-driving. Safety is achieved with Safe-driving (Automated Collision Avoidance) and doesn't need Self-driving (ability to at times take hands off wheel and feet off pedals). Unfortunately Self-driving doesn't sell (as Volvo knows all too well) and Warren Buffet doesn't believe in it. However, GM knows Self-driving will sell, especially to 1%ers ([notice Cadillac ads during Oscars](#)). Driverless, which give consumers reason to not buy cars is GM's worst nightmare . Alain*

The New York Times

[Building a Road Map for the Self-Driving Car](#)

N. Boudette, Mar 2, "...“If we want to have autonomous cars everywhere, we have to have digital maps everywhere,” said Amnon Shashua, chief technology officer at Mobileye, ..." *Hmmm...Maybe not!?!? "...The reason digital maps are so important is that even the most advanced sensors, like radar and cameras, are not enough to enable a car to navigate a **chaotic and changing** world safely enough..." [Read more](#) *Hmmm...but maps can't contain the **chaotic and changing** (other cars, bicycles, pedestrians...) because they're **chaotic and changing!** Sensors and their intelligence have to do the **chaotic and changing**. Since these sensors have to do the **hard part: chaotic and changing**, they might as well also do the **easy part: recognize the signs, and lane markings (which need to be on all the roads that we drive today because we don't have the maps in our brains)**. What am I missing???* Alain*

THE VERGE

[Peugeot's Instinct concept car is its vision of an autonomous near-future](#)

A. Toor, Feb 27, "...“In the future, maybe you will have cars that can be only autonomous, and it will be forbidden to drive anymore,” says Matthias Hossann, head of concept car and advanced design at Peugeot. “But this **transition will be very long**, and what we wanted to illustrate here is part of this transition, because this will take time.”...Hossann said that unlike previous concept

cars, the Instinct was designed from the inside-out. The idea is that drivers will be able to choose how much control they want to cede to the car — there are two self-driving modes and two active modes — and that the car, in turn, will be able to adjust its driving based on data collected from connected devices....[Read more](#) *Hmmm...The transition will be very long and in the mean time, we'll be buying these things from the legacy manufacturers. Alain*



[Automaker Geely calls on China to relax mapping rules to speed self-drive development](#)

J. Spring, Mar 2, " Chinese automaker Geely [GEELY.UL] called on the government on Thursday to loosen strict controls on mapping, saying current rules in place for national security reasons risk inhibiting the development of self-driving vehicles...." [Read more](#) *Hmmm...Long overdue. Alain*



[Self-driving Nissan car takes to Europe's streets for first time](#)

C. Pitas, Feb.28, " Guided by cameras and radars, and negotiating traffic and roundabouts, a self-driving Nissan car took to the streets of London on Monday for the Japanese company's first European tests of an autonomous vehicle. Traveling at up to 50 miles (80 km) per hour and moving from local streets to a major multi-lane road, the modified Nissan LEAF electric car showcased the kind of technology many hope to be the future of travel.

It also recently announced changes to allow for a single insurance policy to cover motorists driving conventionally and in autonomous mode, as it tries to get regulations in place to encourage the uptake of driverless cars from 2020..." [Read more](#) *Hmmm...Doesn't seem like such a big deal. It is 'only' Self-driving and it is novel for the UK, so great. But what is all of this about having insurance to pay for the losses that we cause? Alain*



[Ford wants drones to join forces with self-driving vans for faster deliveries](#)

A. Sulleyman, Feb 28, "Ford has revealed its 'Autolivery' concept for what it calls the 'city of tomorrow', and envisions a future in which packages are delivered to houses by self-driving vans and drones...." [Read more](#) *Hmmm...Driverless-vans Yes! Drones & Self-driving-vans...not so much! Alain*



[A Fascinating Glimpse at How We'll All Carpool in 2027](#)

L. Stinson, Feb 28, "...A new project from acclaimed design firm Ideo presents one of the most compelling visions to date of an autonomous, ride-sharing future. It places the car at the center of a new marketplace, one where owners of an autonomous vehicle can toggle between ride sharing, car sharing, and private use. Drivers can choose to ride solo or offset the cost of their car by picking up passengers or renting it to others. The passengers, too, can reduce the price of their trips by agreeing to run errands for the owner.

Ideo's concept envisions what happens when private vehicles become a public resource. "We're encouraging car manufacturers to start thinking about this notion of designed interiors that facilitate really seamless sharing," says Danny Stillion, a partner at Ideo, who leads the Future of Automobility project..." [Read more](#) *Hmmm...Maybe??? However, they won't be owned by consumers, so why design them for their ownership???* Alain



[Estonia Allowing a Number of Self-Driving Cars on the Streets Starting Today](#)

Press release, Mar 2, "...the testing of self-driving cars is allowed on the streets and roads of Estonia. There is an additional condition that the car must also have a driver who can take control of the car if needed.

Kadri Simson, Minister of Economic Affairs and Infrastructure said that self-driving cars are an exciting transport solution for the future which humans and regulations should get adapted to gradually. "One of Estonia's keys to success over the years has been the emergence and implementation of innovative solutions. Self-driving cars as means of everyday transport need to advance, while ensuring the safety of all road users," added Simson. According to Pirko Konsa, the head of the group of experts on self-driving vehicles created under the Government Office last autumn, Estonia as a small and flexible country has the opportunity to be first in applying new solutions, and the local entrepreneurs could become the first to export this know-how to international markets..." [Read more](#) *Hmmm...Estonia, welcome to the club! :-)* Alain

Some other thoughts that deserve your attention



[New Jersey Area Rising Around Transit Hub Lacks One Thing: Its Hub](#)

N. Corasaniti, Mar 2, "All the ingredients for a bustling downtown transit hub here are coming together: new townhouses, restaurants and big-box stores sit just off the busiest rail corridor in the country, as trains whiz by every 10 minutes or so. Bulldozers, backhoes and scattered mounds of dirt offer evidence of more to come. A large banner over a nearby highway with an illustration of a train declares: "Shop. Dine. Ride. Live."

There is just one piece missing from this rosy picture: any evidence of a train station.

On the longest stretch of passenger rails in New Jersey without a stop, the proposed station would address a glaring need, providing public transit to a bustling area and easing congestion on chronically gridlocked highways. An elevated rail track that is part of the project could funnel more commuter trains to New York City..." [Read more](#) *Hmmm...Maybe??? Even with a train stop, it will need a 'last-mile' distributor which would be perfect for existing low-speed driverless shuttles such as [Easy Mile](#), [Navya](#), [AutoKAB](#), [2GetThere](#), [Local Motors](#), ...* Alain

On the More Technical Side

<http://orfe.princeton.edu/~alaink/SmartDrivingCars/Papers/>

Half-baked stuff that probably doesn't deserve your time



Driverless cars are coming to Charlotte — but light rail transit will still play a big role

A. Dunn, Feb 28, "We first reported on [this story last week](#). ...But one key element is left out of the plan: How the transportation industry is evolving. [A transportation expert told the Observer](#) that "fixed-route transportation won't make any sense in 10 or 15 years." If he's right, the three new light rail lines would be a \$6 billion waste of money.

We actually had this very conversation in the Agenda office early last week. Driverless cars will one day be ubiquitous, and sooner than you would expect. Uber doesn't have a \$68 billion valuation for nothing. Does a massive, expensive light rail plan still make sense in that kind of environment? ...

Yes, we'll still need transit in a driverless future. I see light rail continuing to play a vital role in moving around Charlotte well into the future....The CEO of Charlotte Area Transit System sounds like he agrees...." [Read more](#) *Hmmm...Paul, did you make it out of town alive? And they expect to do this without Foxx @ DoT and the possible scraping of the FTA? Alain*



Chevy is the first major car company with unlimited LTE data

S. Dent, Mar 2, "Chevrolet's latest OnStar LTE plan would be every smartphone user's dream, if it wasn't confined to cars. Starting March 3rd, Chevy owners can get unlimited 4G data, including an OnStar WiFi hotspot, for \$20 a month, prepaid..."[Read more](#) *Hmmm...What is the over/under on how many car crashes this 'advancement' will cause? :-/ Alain*

C'mon Man! (These folks didn't get/read the memo)



Tesla Autopilot crash caught on dashcam shows how not to use the system

F. Lambert, mar 2, "Earlier this week, a Tesla Model S hit a barrier on the highway near Dallas, Texas. The driver, who fortunately wasn't injured, first blamed Tesla's Autopilot for the crash.

We now have footage of the accident and it actually shows a situation that the Autopilot probably shouldn't be expected to be able to handle, at least not yet. Ultimately, it serves as a reminder not to trust the system without paying attention. ...

Fast forward to 3 days later. Another Redditor on the Tesla Motors subreddit found footage of the accident taken from the dashcam of a vehicle following the Tesla during the event. The footage shows that the Tesla needed to merge or change lane in order to avoid the barrier – something the Autopilot should never be left to do without the driver intervening...

What is also clear from the footage is that the design of the road here is quite awful since even the driver in the vehicle with the dashcam almost hit the barrier and there presumably wasn't any driver assist at play in this case...." *Hmmm...How is it that with all of the \$\$\$\$ that are being spent to do the construction, there aren't the funds to buy and apply paint to clearly mark lanes. C'mon DoT!!*

"What potentially didn't work is the 'Forward Collision Warning' feature since the driver claims that there was no warning. Some would assume that Automatic Emergency Braking (AEB) should have kicked in, but it's actually not designed to engage if there's an alternative and in this case, the vehicle wasn't supposed to brake in order to avoid the barrier – it could have been even more dangerous considering a vehicle was close behind and there was traffic to the right of the vehicle.

Tesla explains what the feature does:

"AEB does not engage when an alternative collision avoidance strategy (e.g., driver steering) remains viable. Instead, when a collision threat is detected, forward collision warning alerts the driver to encourage them to take appropriate evasive action..." [Read more](#) *Hmmm...Fred, great article! Until Tesla and the others get the **Safe-driving**, aka Automated Collision Avoidance, right, they can't do any Self-driving. C'Mon Man!! Alain*



[The Impact of Autonomous Cars on Claims](#)

D. Johnson, Mar 2, "...These new cars offer a lot of pluses, potential safety advantages, but the software needed to drive them is not immune to fatigue, but it's immune from intoxication and distracted driving," Quinley said...." *Hmmm...What ??? No one has claimed that self-driving cars are immune to intoxication. Please! Don't be confused with Driverless. "...If enhanced safety flows from having driverless cars, it's going to impact employment staffing and career paths for adjusters," said Quinley. "The whole insurance industry infrastructure that exists now, that's devoted to managing and handling, and processing automobile claims I envision is going to shrink if driverless cars deliver on the promise of reduced accidents and better safety." [Read more](#) *Hmmm...Not my fault!! What a business! Disruption of this industry can't come too soon. Alain**