House Committee on Energy and Commerce; Subcommittee on Commerce, Manufacturing, and Trade
Disrupter Series: Self-Driving Cars
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Testimony of Gary Shapiro, President and CEO, Consumer Technology Association

Thank you Chairman Burgess, Ranking Member Schakowsky, and members of the subcommittee, for inviting me to testify today on the future of self-driving vehicles. I am Gary Shapiro, president and CEO of the Consumer Technology Association (CTA).

The Consumer Technology Association (CTA)™ represents more than 2,200 member companies who comprise the $287 billion U.S. consumer technology industry. We also own and produce CES – the Global Stage for Innovation, held each January in Las Vegas. I am fortunate to have a front row seat each day as our members develop and introduce innovative and life-changing products and services, create jobs, and grow the economy. At CTA, we work to advance public policy that fosters innovation, advances competitiveness, and promotes job and business creation.

I'd like to thank the subcommittee for holding the disruptor series and bringing attention to new technologies like drones and 3-D printing that are changing the world. The rapid shift in technology – from the internet to wireless to low-cost sensing devices to data analysis – has changed our world. It has enabled nimble, innovative companies to reshape our economic ecosystem. These companies are reinventing legacy markets and creating jobs while delighting consumers. At CTA, we created a Disruptive Innovation Council to support the growth of innovative companies developing technologies and services that are disrupting traditional business models and creating new markets. As new businesses come to the market, many of them face burdensome government regulations based on old models.

CTA welcomes and appreciates the leadership of this Committee in recognizing that disruption is part of innovation and progress and is a necessary but sometimes painful precursor to economic growth, better health and providing incredible new opportunities to expand entrepreneurship, improve education and solve major problems. I'd also like to take the opportunity to thank Chairman Upton for his years of leadership at the head of the Energy and Commerce Committee.

This hearing could not have come at a more appropriate time. Transportation is on a path toward greater safety, increased efficiency, greater mobility and lower prices. The transportation market is ripe for disruption; further, it needs it.

The Consumer Technology Association represents much of the vehicle technology ecosystem – from automakers and suppliers to navigation and mapping companies to service providers and aftermarket suppliers and installers. Our member companies are revolutionizing the transportation network and are well on the way to making self-driving vehicles a reality. Traditional automakers are partnering with technology companies and startups that are taking an entirely new approach to vehicle design and operation. It seems every other day we are seeing new partnerships announced, from Fiat Chrysler (FCA) and Google to BMW, Intel and Mobileye. Uber is testing self-driving ride-sharing in Pittsburgh and in Colorado, Otto's self-driving truck just made a 120-mile trip down the interstate to deliver a trailer full of Budweiser. At CES 2017, our members will showcase the latest transportation technology that will disrupt markets, increase safety, and revolutionize the way we do business and operate on-the-go.

The Benefits of Self-Driving Technology

The National Highway Traffic Safety Administration (NHTSA) expects more than 35,000 people to die on U.S. roads in 2016 and hundreds of thousands more injured, reaching a "crisis" level according to Administrator Mark Rosekind. Last year, U.S. vehicular fatalities climbed seven percent – at that time, the largest year-over-year increase in 40 years. The vast majority of these crashes are caused by human error including driver distraction, drowsiness, inattentiveness and use of drugs or alcohol.

Properly implemented, fully self-driving vehicles and the partially-autonomous intermediate steps involving driver-assist technologies will dramatically reduce crashes caused by human error. Not only will self-driving vehicles save lives, they will also reduce congestion and pollution, and will provide new opportunities for mobility to seniors and people with disabilities.

While much of the world is excited about the benefits of self-driving vehicles and eager to see progress, some argue self-driving vehicles should not be deployed until systems are perfect. This is a dangerous road, as perfection may be an unreachable goal. Human drivers make many preventable errors while behind the wheel. Delaying driverless car deployment by insisting upon an impossible-to-achieve standard for perfection will cost tens of thousands of lives each year.

Thankfully, we don't have to wait for many of the benefits of self-driving vehicles to arrive – driver-assist technology is already saving lives, avoiding accidents and paving the way for completely driverless innovations still to come. We should promote these technologies that help drowsy or inattentive drivers stay focused, or provide specific responses such as automatic braking and lane-drift avoidance – all of which are now increasingly available in newer model vehicles. Further, the aftermarket industry provides a valuable service in allowing consumers to add life-saving technologies to vehicles they already own. As the average age of vehicles on the road today tops 11 years, aftermarket solutions will continue to play a critical role in the shift to self-driving vehicles.

Consumer Adoption

It is a fair question for any disruptive technology, but one rarely answered positively by consumers who have not actually experienced the disruption. In the late 1800s, if asked, people would have said they wanted faster, more comfortable horses. Consumers rarely said they wanted more technology, from the telephone to the computer to the remote control. In fact, Apple was proactive in introducing the iPad, iPhone and iPod. Yet lots of skeptics and media question whether consumers want self-driving cars.

CTA recently released a consumer research report, *Self-Driving Vehicles: Consumer Sentiments*, which illustrates consumer interest in the early stages of self-driving technology and shows great optimism for our driverless future. History continually shows consumers become more comfortable with innovations as the benefits become more apparent, erasing their initial concerns. CTA's study reflects growing support for self-driving cars – consumers want to see for themselves just what these driverless innovations have to offer. The driver-assistance features already on the market may be sparking the excitement, as more drivers experience the safety and convenience these new features provide.

CTA's study showed that three in four consumers are excited about the benefits of self-driving cars. More than 60 percent are interested in replacing the car or truck they own with a completely self-driving vehicle, and 70 percent have a strong interest in testing driverless technology for themselves.

Other research shows less consumer interest in self-driving cars. But the phrasing of a question in a survey has a real impact on the response. When consumers are asked about "control," responses are more negative. In one recent study of similar size to CTA's, half of consumers (51 percent) want to have full control of their vehicles, even if it is not as safe for other drivers. We

believe interest in the self-driving cars will continue to rise as drivers see and experience first-hand the benefits of these vehicles.

State Activity on Self-Driving Vehicles

We are at the beginning of a revolution, and we need smart policies at both the federal and state level to ensure our ability to realize the true potential of self-driving vehicles. Car makers have already put driverless cars on the road at test facilities such as GoMentum Station in California and Mcity in Michigan. For this technology to truly gain speed, car makers need to be able to test their cars on all kinds of roads in various conditions. Several states recognize the potential for self-driving vehicles and the need for real-world testing by providing opportunities and flexibility for the industry. However, transportation is a national system. We need uniformity across the states to ensure a national single market, safety, and consistency.

State policymakers have not waited for specific direction from the federal level to embrace the development and deployment of self-driving vehicles. Eight states including California and Michigan have enacted statutes authorizing the testing and operation of self-driving vehicles. Governors in Arizona and Massachusetts issued executive orders related to self-driving vehicles. Additionally, in 2016 seven states are considering legislation relating to self-driving technologies.

CTA's Position on the NHTSA Federal Automated Vehicles Policy

CTA was encouraged by NHTSA's Federal Automated Vehicles Policy and its recognition of the need for consistency for self-driving vehicles. Further, NHTSA recognized the importance of flexibility for the industry to continue to innovate. NHTSA also stated its intent to continue providing interpretations of current law and Federal Motor Vehicle Safety Standards (FMVSS), and to continue to provide exemptions for testing, both of which are needed in an ever changing and innovative field.

The guidelines distinguish between federal and state jurisdiction over licensing. NHTSA affirmed that in the case of highly-automated vehicles, states retain jurisdiction over a human driver responsible for operating the vehicle. The federal government's jurisdiction covers vehicle safety and performance, and therefore includes the "driver" when the self-driving vehicle or software is the primary operator. Further, NHTSA clarified that a fully self-driving vehicle does not require a licensed human driver.

Other encouraging aspects of the NHTSA guidance include several suggestions for states to expand testing and operating opportunities for manufacturers. The guidance encourages states

to evaluate and update current laws so as not to impede testing or operation of self-driving vehicles – e.g. human driver references in current law should be updated. Further recognizing the need for consistency across state lines, NHTSA said individual states should coordinate with other states on infrastructure needs and uniformity (signage, signals, etc.).

Of concern, however, is the suggestion that states should mandate NHTSA's voluntary 15-point safety checklist. This will lead to confusion for manufacturers (are the guidelines voluntary or mandated?) and inconsistency as states may or may not choose to follow the guidance, or may implement them at different times.

The list of possible new regulatory tools NHTSA suggests for self-driving vehicles also demands a closer look. Two of NHTSA's proposals would dramatically shift the approval process for vehicles and likely cause significant delays in bringing self-driving technologies to market. CTA urges Congress to carefully consider the negative implications such a shift would have on the entire automotive market before making statutory changes in NHTSA's authority.

Of most concern is the proposal to grant NHTSA pre-approval authority for new vehicles, which would overhaul NHTSA's current self-certification and compliance testing regime. Not only would this would be a major increase in authority for NHTSA by allowing it to approve every new model and model year vehicle before it comes to market, but it would likely slow the development and deployment process of life-saving technologies.

NHTSA alternatively suggests taking a hybrid approach similar to the Pipeline and Hazardous Materials Safety Administration (PHMSA) maintaining the self-certification standard for the FMVSS and requiring NHTSA pre-approval only for the automated systems not currently covered by the FMVSS. NHTSA would eventually integrate automated feature standards in the FMVSS via rulemaking. The NHTSA rulemaking process takes an average of 7 years. That is too long to wait to allow a technology that could save hundreds of thousands of lives to sit on the shelf.

Any changes to NHTSA's authority would require significant consideration of the potential impacts on the industry and new entrants to the market. The federal government must include all stakeholders in the process to ensure the technology is not limited by regulatory overreach.

This is not a complete evaluation of the NHTSA guidelines – CTA will file comments with the agency detailing our full position on the policy – but is meant to give the committee a broad overview of some of the key issues raised by the document.

Other Federal Stakeholders Should be brought to the Table

While DOT is the primary regulator for self-driving vehicles, other agencies may have a role to play as well. Representatives from other government agencies including the National Telecommunications and Information Administration (NTIA), Federal Communications Commission (FCC), Federal Trade Commission (FTC) and Department of Defense have asked how they can provide input for their needs, contribute their expertise and stay informed. Their input regarding spectrum, interoperability, cybersecurity and privacy should be sought to avoid competing or conflicting policies from various agencies with different interests and goals.

Americans with disabilities, the aged, and parents see liberating opportunities in self-driving vehicles. Health care prescribers, consumer groups and industry interested in the benefits of self-driving vehicles and others all have a stake.

I applaud the DOT for taking a leadership role and seeking broad input, but I feel consensus on self-driving vehicles is so important we need believers and stakeholders together working toward a national goal of saving lives and resolving impediments to get there.

This requires government facilitation and leadership at the top. We did it with deploying high-definition television and creating commercial rules for the internet. The result for both technologies has been huge boosts in U.S. leadership in content creation and commercial internet ventures.

We can do the same thing with self-driving vehicles – set a goal of cutting American fatalities by a certain date, and challenge representatives from interested groups to gather to clear the path to resolving the legal, legislative and standardization uncertainties to achieve that goal.

Cybersecurity and Privacy

As our vehicles become more and more technology-driven, concerns about security and privacy inevitably arise. Consumers trust their vehicles to safely and securely get them from point A to point B. Trust is essential to vehicle manufacturers – it is in their best interest to ensure the security of their products, as consumers will not purchase or use vehicles they do not view as safe and secure. Cybersecurity has become a significant concern for consumers and manufacturers alike, and the industry has significantly increased their investment and coordination in this area- creating industry best practices and an automotive information sharing and analysis center (Auto ISAC). NHTSA recently released draft cybersecurity best practices. While information sharing is a critical part of preventing and stopping attacks, government must be careful in how prescriptive they are on demanding data from private companies and consider intellectual property and competition concerns as well.

While guarding consumer privacy interests is important, we must not undercut the benefits that data can provide for convenience, consumer safety and the environment. There are vast benefits to data sharing which will contribute to better vehicles and increased safety. Cars will be able to provide and share real-time data that can keep us safer on the road. Continued innovation means the car will now automate many of the features and benefits currently included in standalone apps such as Waze. The ability to recognize an accident and share that information with other vehicles will prevent massive pile ups and deaths. Further, it could alert emergency services faster, potentially saving more lives. Sharing driver-generated data should not be limited by outdated government mandates.

Conclusion

With self-driving vehicles we can give future generations huge gifts! Dramatically fewer deaths and injuries, a cleaner environment, more freedom and greater mobility. Only by working together can industry and the government ensure this revolution, and a self-driving future becomes a reality. Leadership is about setting a goal and clearing every obstacle to get there. If we agree on the goal, then Congress can update laws, exert oversight and help save lives, avoid injuries, reduce congestion and empower Americans.