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"Autonomous Vehicles and Their Impact on the Insurance Industry"

I. The State of the Technology

On July 1, 2015, in the city of Mountain View, California, a Lexus SUV was rear-ended by another vehicle. The three occupants of the Lexus complained of minor neck pain, but were released from the hospital the same day. The driver of the other vehicle complained of neck and back pain, but does not expect to need surgery. While this scenario appears to be a routine file that would cross your desk, the matter takes a left turn when you find out the driver of the Lexus – a computer program.

While driverless cars seem like a futuristic technology more at home on the Jetsons, they are actually on the roadways of several states – most notably in California. For instance, Google has been operating approximately 20 driverless vehicles on the roadways of California for several years.

On May 5, 2015, Freightliner unveiled The Inspiration, the first street legal partially automated tractor-trailer, in Nevada. However, this was not some concept car that would never see the light of day. Instead, The Inspiration had more than 10,000 miles of road testing and was granted a Nevada Autonomous Vehicle license plate.

Further, automobiles that you can find at any dealership are including more and more automated features. Cars can now parallel park for you, alert you when someone is in your blind spot, govern your speed, and brake when you get too close to another car. General Motors will offer a super cruise system with hands-free automated driving on freeways that have proper lane markings by 2016. So while you cannot purchase a fully autonomous vehicle currently, the vehicles you can purchase will include more and more autonomous options. Fully autonomous vehicles are no longer a question of if, but rather when.

II. The State of Regulations

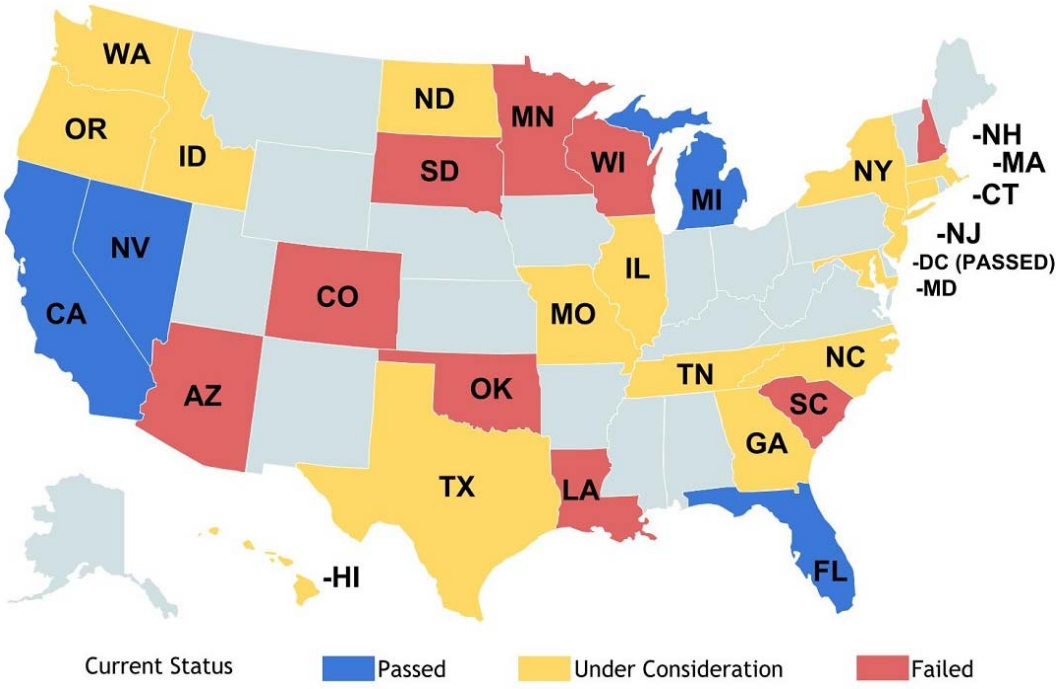

Figure 1http://cyberlaw.stanford.edu/wiki/images/0/06/Statusmap14small.jpg

As automated features become more ubiquitous and we get closer to driverless vehicles on every roadway, the key battleground will be on the regulatory side. Already, as shown above, several states have passed statutes regarding the operation of automated vehicles. For instance, in California where most of the testing for automated vehicles has been performed, a bill was passed in 2012 that has the following requirements for an autonomous vehicle:

1. A mechanism to engage and disengage the autonomous technology that is easily accessible to the operator.
2. A visual indicator for when the autonomous technology is engaged.
3. A system to safely alert the operator if an autonomous technology failure is detected while the autonomous technology is engaged.
4. Allow the operator to take control in multiple manners, including, without limitation, through the use of the brake, the accelerator pedal, or the steering wheel.
5. Has a mechanism to capture and store the autonomous technology sensor data for at least 30 seconds before a collision occurs.

This statute also requires that any company testing autonomous vehicles on the roadway to produce a certificate of insurance for $5 million.

The regulations provide less clarity on certain important issues such as the insurance minimums that will be required for the operator of an autonomous vehicle. There have been a plethora of policy papers and law review articles discussing these topics and more, including papers from the RAND Corporation and the Brooking Institute, but no jurisdiction has taken the first leap. In fact, a survey by IEEE, a technical professional organization dedicated to advancing technology for humanity, of more than 200 experts in the field of autonomous vehicles found that of six possible roadblocks to the mass adoption of driverless, three were ranked as the biggest obstacles: legal liability, policymakers and consumer acceptance.

III. How the Technology will Impact the Insurance Industry

Warren Buffet was recently asked whether the advances in autonomous vehicle technology would lead Berkshire Hathaway to divest its interests in GEICO. The logic behind this question was that autonomous vehicles would greatly reduce the number of accidents that will occur, thus driving down the premiums for insurance policies and driving down the profits of insurance companies that focus on issuing automobile policies. Buffet did not dismiss this concern, and actually stated that his team had already investigated the question. However, Berkshire would not be looking to sell its interests in GEICO because they concluded that the idea of every household having an autonomous vehicle was approximately 30 years away from reality.

While that timeline seems distant enough to lead companies to dismiss the need to plan for autonomous vehicles, automated features within a vehicle will become more and more common. A study by the Insurance Institute for Highway Safety (IIHS) has found that improvements in design and safety technology have led to a lower fatality rate in accidents involving late model cars. The likelihood of a driver dying in a crash of a late model vehicle fell by more than a third over three years, and nine car models had zero fatalities per million registered vehicles. With an emphasis on safety already imposed upon the trucking industry, it is easy to imagine that state and federal regulators will require more and more automated technology. Audi recently released a car that will sound a buzzer if it detects that you've closed your eyes for longer than 10 seconds.

While the number of accidents is expected to drop significantly as more crash avoidance features are incorporated into vehicles, the cost of replacing damaged parts is likely to increase because of the complexity of the components. In a large number of accidents, the property damage component of the claim is more expensive than the bodily injury component. Thus, it is not yet clear whether the reduction in the frequency of crashes will lead to a reduction in the cost of crashes overall.

During the transition to wholly autonomous driving, insurers may try to rely more on "black boxes," that monitor driver activity despite drivers' objections based on concerns about privacy. Usage-based insurance policies, which depend on data about the driver's behavior submitted by an electronic device in the driver's car, have attracted a smaller than expected percentage of the driving population, possibly because people do

not want to be monitored. According to the National Association of Insurance Commissioners, use of black boxes is forecast to grow to up to 20 percent within the next five years. This is especially true with automated devices becoming more prevalent since there will be a battle over whether the computer program or the driver was in control of the vehicle at the time of the accident.

Finally, more and more claims will include a products liability component with the use of this technology. As more automated systems are utilized by consumers, the likelihood that these systems were in operation at the time of an accident increases. This is especially true since companies like Verizon, Zubie, and Voya already provide dongles that plug into the Onboard Diagnostics systems. It is anticipated tech companies are developing aftermarket autonomous solutions, independent of the auto manufacturers.