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HOLBORN™
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ViewPoint

Analyzing Industry Issues from an Independent Perspective

Autonomous Vehicles

Overview & Implications on the Insurance Industry

Two years after Connecticut became the first state to offer auto insurance in 1925, the practice of insuring automobiles became mandatory nationwide. In the years since, the auto insurance industry endured several challenges, including the Great Depression, World War II (with the restricted use of private automobiles), and recent safety advancements. Each caused the auto insurance industry to rethink its approach. However, insurance is an ever-evolving and resilient industry. Today and in the future, self–driving cars will test the market.

On the Road

Features to increase the safety and efficiency of cars has become standard in today's vehicles, many of which automatically respond to unsafe hazards quicker than human reaction time. These features naturally led to the advent of increasing sophistication of transportation, ultimately culminating in autonomous vehicles. All vehicles fall into one of six levels, based on their technological features:

- Level 0: No autonomous features.
- Level 1: Driver assistance for main functions, but 1 or more intervening systems (i.e., braking).
- Level 2: Control steering and speed for short amounts of time and in certain conditions; driver attention needed.
- Level 3: Full autonomous features in all driving conditions, but some attention is needed.

- Level 4: Only entry of destination needed by driver; if systems fail, the car safely stops and driver can take over.
- Level 5: No human attention needed and not intended to be actively driven—largely still in development.

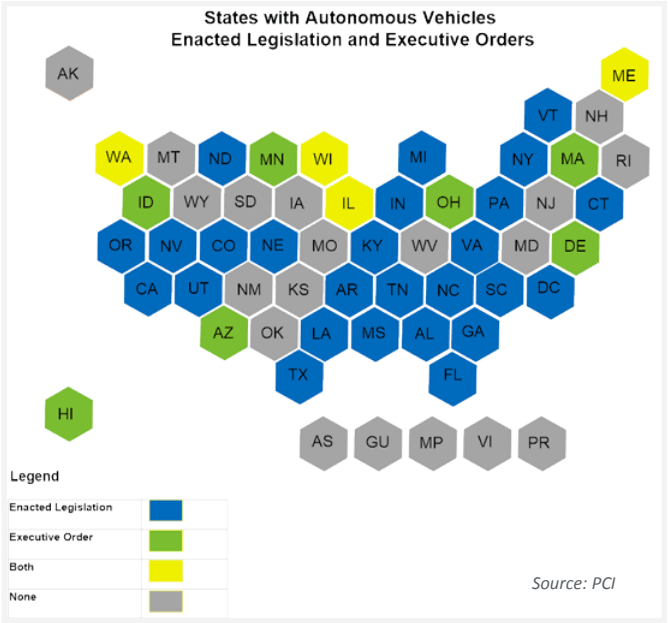
Predictions vary as to how quickly these vehicles will populate the roads. Mordor Intelligence anticipates 10 million active self-driving cars (Level 3/4) by 2020 worldwide, together with another 250 million smart cars—vehicles connected to high-tech networks. By 2030, the prediction is 20.8 million autonomous vehicles in the U.S. That being said, auto manufacturers tend to focus on Level 4 technology, where some level of control is still possible.

General Motors is investing in self-driving cars, with the expectation of rolling out these vehicles as part of a ride-sharing partnership with Lyft. In 2016, GM invested $500Mn in Lyft to collaborate the use of GM autonomous vehicles with their service.

Similarly, Ford hopes to enter the ride-sharing business with a $1Bn investment in Argo AI, a robotics company. Ford has targeted 2021 for the availability of Level 4 vehicles. Rival car companies note similar timelines with varied partnerships and expectations.

Much like the established partnerships between automakers and technology companies, some insurance companies are similarly teaming up with automakers to prepare for these inevitable industry changes.

State Farm is collaborating with Ford and the University of Michigan to create a new self-driving Ford Fusion, with varying high-tech features, such as automatic emergency braking, a Lane-Keeping System, blind spot warning, and parking assistance. The symbiotic relationship will have State Farm sharing claims data and driver behavior statistics with Ford—while, in turn, being at the forefront of understanding the new auto technology and becoming a preferred insurance partner.



Google's Waymo is similarly developing and testing fully autonomous vehicles in Austin, Atlanta, Detroit, and various locations in California and Arizona. The company worked with various auto manufacturers to test the technology, including Toyota, Lexus, Chrysler, and Jaguar. Waymo One launched in 2018 as an autonomous taxi service in Phoenix. In addition, Waymo is exploring Class 8 trucks (tractor-trailers).

Claims Implications

The National Highway & Transportation Safety Administration (NHTSA) estimates that 94% of automobile related liability claims are caused by human error. With increased autonomy, industry experts anticipate the lower accident frequency, by removing or reducing the influence of human error.

Conversely, claims severity will likely increase due to:

- Higher costs of repair for more sophisticated automobiles;
- Potential judicial, legislative, and social changes influencing jury awards; and
- Legal fees associated with determining at-fault party in accidents (i.e., manufacturers vs. operators).

A Question of Liability

Insurance regulation is state-specific, with no indication that this will change in regards to regulating autonomous vehicles. Twenty-nine states and Washington D.C. enacted legislation addressing autonomous vehicles. Another 11 governors have issued executive orders.

A significant hurdle facing the insurance market will be the determination of liability. At this time, there is no legal precedent. Product Liability law, as currently written, would allow for coverage from claims arising from an autonomous vehicle. However, the laws could evolve, to mitigate the cost of litigation. The anticipation is that lawsuits are most likely to come from either the failure of the laser equipment used to control the vehicle leading to accidents or data security related issues (i.e., hacking into the control panel).

In September 2016, the NHTSA and the U.S. Department of Transportation set a Federal Automated Vehicle Policy with the intention of ensuring safety, while maintaining innovation in the industry. An update, based on Congressional hearings and industry feedback was then incorporated in September 2017's "A Vision for Safety 2.0;" and further updated in 2018 with "Preparing for the Future of Transportation: Automated Vehicles 3.0" (AV 3.0). The most recent guidance provides the following:

1. Advancing multi-modal safety,
2. Reducing policy uncertainty, and
3. Outlining a process for working with the U.S. DOT.

AV 3.0 details the principles that guide the U.S. DOT programs and policies on automation. It goes on to summarize the implementation strategies for how the Transportation Department translates these principles into actionable policy.

In summary, AV 3.0 encourages:

- Transparency of automated vehicle safety trials,
- Development of voluntary technical standards,
- Framework for safety, and
- States to remove any local impediments to the testing or integration of AV.

The DOT will recognize that the terms "operator" and "driver" do not exclusively refer to a human. Further, it reserves the right to establish safety standards for AV design (i.e., lack of steering wheel, or brakes). In essence, while the DOT is committed to safety, there is a strong desire to continue to encourage innovation and development. In fact, the federal government passed a bill that bans states from preventing the testing of driverless vehicles.

Insuring the Risk

Data collection, analysis, and its use is important in today's rapidly changing environment. Being able to segment and appropriately charge for individual risk characteristics enables insurers to be both profitable and competitive.

As the sophistication of automobiles increases, the need to evaluate factors beyond driving records, age, claims history, and credit score, increases as well. The focus of underwriting could shift to include more technical details, such as:

- Miles driven in autonomous mode vs. operator mode;
- Time of day (rush hour vs. light traffic);
- Speed, if the driver assumes control to increase vehicle speed in excess of posted limit;
- Sophistication of the car model;
- Instances of human takeover of autonomous driving;
- Effects of weather conditions;
- "Near-misses;" and
- Crash sensor data.

The challenge currently facing insurers is twofold: 1) no historical exposure or claims data, and 2) simultaneously, too much data to consume. The ability to efficiently and effectively analyze data captured by these vehicles will differentiate carriers.

Conclusion

Holborn will continue to monitor the impact that self-driving cars have on the auto insurance industry. We believe adapting to changes in the industry, through new approaches, ears to the ground monitoring, and collaboration, will help our clients succeed.