

**Advisory topic: Autonomous Vehicles / Collision-Avoidance Systems**

**Industry Maturity Index:** ‘Now’, and ‘Short-term’ (1-2 years)

**Why this is important:** The ACT Changing Nature of Risk workgroup feels that Autonomous Vehicles overall – including the early-phase subset of Collision Avoidance - will significantly impact our personal interactions with vehicles and radically change both personal auto and commercial vehicle insurance. When we consider that vehicle insurance represents 43% of total insurance premiums even slight shifts in premiums will have a profound effect on our industry. *This trend is moving rapidly, and impacts many industries.*

**What is it?** An **autonomous car** (also known as a driverless **car**, auto, self-driving **car**, robotic **car**) is a **vehicle** that is capable of sensing its environment and navigating without human input.

There is an evolution of sorts under the overall umbrella of Autonomous Vehicles. Here are the five accepted stages;

- 1) Human driver controls all (traditional since creation of automobiles),
- 2) At least one drive-assistance system (acceleration/deceleration/cruise control/lane centering),
- 3) Drivers still necessary, but able to shift ‘safety-critical’ functions to the vehicle,
- 4) Fully-autonomous, but does not cover all possible driving scenarios,
- 5) Fully-autonomous, equal to that of a human driver.

**Broad Implications / Uses:** This has applications across many spectrums of our lives;

- Increased safety, less violations and fewer accidents
- Smarter, faster, more reliable travel
- Economic efficiency
- Potentially more uniform lowered vehicle emissions
- Enhanced quality of life via ready access to instant transportation
- Potential to vastly reduce or completely remove automobile ownership shifting it to usage based.
- Accessible to elderly and handicapped

**Economic Impact(s):** The ripple effect this will have on almost all aspects of our lives will be significant.

- The concern that autonomous vehicles will eliminate the need for personal auto and commercial vehicle insurance as we know it. The risk will be potentially shifted a product liability exposure.
- The body shop and repair industries will cease to exist.
  - 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. It is not yet clear whether the reduction in the frequency of crashes will lead to a reduction in the cost of crashes overall.
- Fewer emergency resources required with fewer accidents happening.
- Municipalities will lose traffic ticket revenue.
- The trucking industry will be radically transformed (for example, no driving limits – in the road 24/7) – as will the Auto Unions (no drivers).

- Combined with the “sharing economy” (Lynx Uber) many may choose to no longer own cars
- Fleets of trucks may also be “contracted” on as needed basis.
- Increased security and terror risk – using an autonomous vehicle to commit acts of terrorism.
- Public infrastructure will need to evolve to handle cloud server systems that manage traffic and road networks.
- The economic impact on auto makers could result in potential union lobbying/resistance.

**Insurance Industry Implications:** The emergence of Autonomous Vehicles can have positive and negative impacts to many areas of our industry. *NOTE; Impacts listed are not necessarily “positive impacts”, but more “delayed” - How our industry prepares and adapts will determine if the impact is negative or positive.*

- Positive Impacts
  - Short term, the cost of vehicles will keep increasing so in the short term, average premiums for physical damage would normally go up but at the same time the number of claims and the severity will go down, theoretically at least
  - Initially, many of the traditional underwriting criteria, such as the number and kind of accidents an applicant has had, the miles he or she expects to drive and where the car is garaged, will still apply - however the make, model and style of car may assume a greater importance.
  - Primarily, this means that the types and amount of coverages will become more complex causing all the more need for a trusted advisor.
- Negative Impacts
  - As cars are become increasingly automated the onus might be on the manufacturer to prove it was not responsible for what happened in the event of a crash. The liability issue may evolve so that lawsuit concerns do not drive manufacturers and their suppliers out of business
  - The type of service vehicles need will change, your standard auto repair shop will become even more technical and possibly even be a technology repair shop only.
  - Reduction in individual policies due to factors such as individual automobile ownership, ride sharing. *Note: The majority predicted not to own, but use via ridesharing.*
  - Fewer prospects for us to quote and write as new business (Especially in the metro areas which is our largest pure growth potential areas). Results:
    - Marketplace for # of autos overall shrinks
    - Current average premium per policy will fall
    - A difference in policy average premium coming in the front door will be less than what is exiting
    - Current clients will purchase fewer cars, further reducing our add-on premium and average premium
- Indeterminate Impacts (if required)
  - Yet to be determined whether the auto insurance system will change to be more uniform with the arrival of self-driving vehicles, and will the federal government play a larger role?
  - As autonomous vehicles provide accessibility to visual or physical challenges, our distribution channel will need to address connection platforms like websites to enable this and become ADA-compliant.
  - At what point does our business in the rural counties become an issue of concentration for reinsurance and rating agencies?
  - Geographical boundaries can be limitations or enablers (rural vs. urban).

- At what point does our mix of business (auto and property) create an issue with reinsurance and rating agencies as well?
- Commercial Lines space may grow and pick up some of the Personal Lines.

**Recommended Actions:**

**\* While the full impact is at a future point, the industry needs to begin discussions now to determine new/alternated revenue streams to replace the loss of premiums from auto coverages.**

**Agents -**

- Staff should be made familiar with what is out in the market as well as what is coming. They need to be able to discuss with and ask the appropriate questions of the consumer.
- Make sure you understand what surcharges and/or discounts your carriers offer for the different options.  
*EXAMPLES:* Ensure you and staff are aware of the basic autonomous concepts and applications (see 'Resources') Review your current customer base for possible impacts.
- Investigate niche markets for:
  - Insuring delivery systems,
  - Product liability for sensors and software algorithms,
  - Other emerging needs such as Insurance for cloud server systems that manage traffic and road networks, insuring 3D Printing of needed parts.
- Begin to develop long term strategic plans that consider the shift in revenue that is expected to occur because of the change in vehicle insurance.
- The average premium will decline across the current book of business – gradual at the start but will pick up.
- Hold strategic discussions with staff to answer critical questions:
  - Will you be able and willing to provide the coverages that the public will demand?
  - Will you be able and willing to be on the cutting edge in order to provide cutting-edge coverages?
  - Will you be able to provide superior claims service on a continual basis?
  - Will your expense ratio allow you to compete effectively?

**Carriers -**

- Investigate offering coverages across spectrum of impact.
- The average premium will decline across the current book of business (slow at the start but will pick up)
- Will fewer employees be needed due to automation advancement?
- As a carrier, you must invest in more advanced technology; need to determine to what extent?

**Vendors -**

- Ensure management, quoting, and contact systems have the ability to handle these vehicle options as soon as available to the market.

**Examples/Resources:**

[Autonomous Driving Levels – Understanding the Difference](#)

[Autonomous Vehicles Will Provide Significant Short-Term Gains for U.S. Auto Insurers](#)

[The Impact of Autonomous Vehicles on Cities](#)  
[Economic Effects of Autonomous Vehicles \(Dept. of Civil Engineering\)](#)  
[The Impact of Autonomous Vehicles on the Insurance Industry](#)  
[How Tesla Self-Driving Cars are Changing the Insurance Industry](#)

**Evolving Technology Caution:**

As much as any technology trend, this topic will change based on consumer, manufacturer and governmental direction. The independent insurance distribution channel can be a leader in this area, however close focus is needed as well as clear discussion among carriers, agents, and vendors.

**Call to Action:**

- The industry needs adapt and adjust to new/different revenue streams.
- This is a significant threat to the relevance of a personal lines only carrier and/or agent.
- Hold strategic discussion session with staff to educate and share ideas.

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