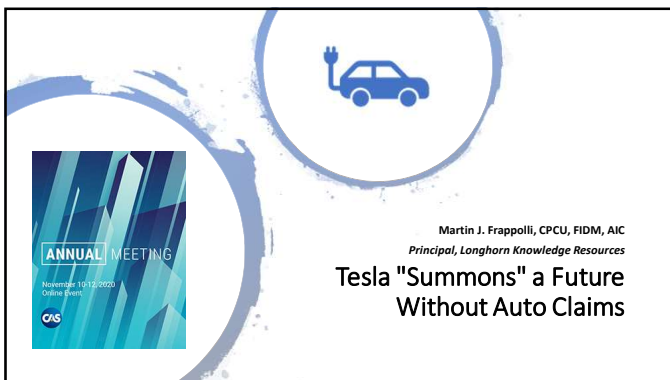
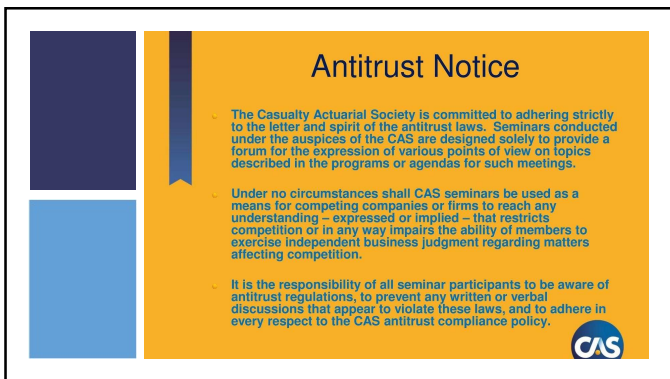




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Learning Objectives



1. Understand the mutual benefit for all parties when loss mitigation supersedes loss compensation



2. Examine autonomous car insurtech that is driving the potential for loss reduction



3. Assess insurers' need to transition from loss compensation to risk management services.



4

Tilting at Zero

- A question of timing
- For the full modern history of insurance, insurtech enables P&C insurers to pivot on risk
- Loss compensation or loss prevention?
- Can technology get us to zero?

5

Looking Back at Steam Boilers

6

Early Days of Loss Control

- Embrace of Technology as Loss Control
- Insurance linked to safety inspections



7



Looking Back at Workers Compensation

8



Changes in Workers Comp

9



10




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Live Polling Question



When will there be a critical mass of autonomous cars on the road, such that riding in one is a common occurrence for 51% of Americans?

- a. By 2025
- b. By 2030
- c. By 2035
- d. Later than that
- e. Never

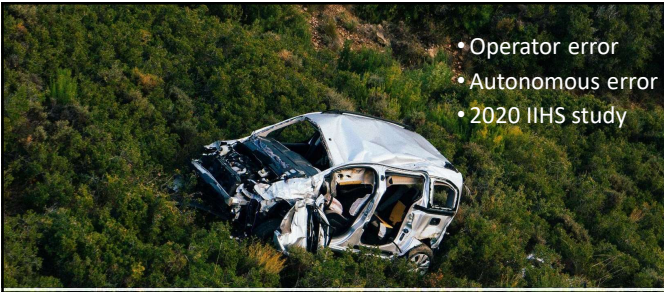
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Has the Future Arrived?

- "At every point in the past 50 years, someone mentioned that autonomous vehicles were just 20 years in our future. That's what they said in the 60s, the 80s, and the late 90s. For the first time in history, driverless cars are not 20 years in the future—they're much closer than that." — Jameson Wetmore, Arizona State University, School for the Future of Innovation in Society



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- Operator error
- Autonomous error
- 2020 IIHS study

The Promise of Autonomous Operation

15

Autonomous Technology

- 1950 – 2000: Safety/convenience features like cruise control and seat belts
- 2000 – 2010: Advanced safety features like electronic stability control and blind spot detection
- 2010 – 2016: Advanced driver assistance with features like automatic emergency braking and lane centering assist
- 2016 – 2025: Partially automated features like lane keeping, self-parking, and traffic jam assist
- 2025 →: Fully automated features like highway autopilot



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SAE Automation Levels					
Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
No Automation	Driver Assistance	Partial Automation	Conditional Automation	High Automation	Full Automation
All navigation depends on the driver	Driver in control, some driving assistance features available	Vehicle equipped with automated functions like steering and acceleration, but driver must be fully engaged	Driver does not need to monitor environment but must be ready to take control at any time	Vehicle can handle all driving functions under specified conditions, but driver has option to control	Vehicle can perform all functions under any condition. Driver may have option to take control

Levels of Automation

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18



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Live Polling Question



The year is 2025, and the CAS Conference is an actual gathering again. Traveling from the airport to the hotel, you now can rent an autonomous vehicle. Do you prefer one that is fully autonomous so that you need only provide directions, or one that still accepts input from you as a driver?

- a. Fully autonomous
- b. Semi-autonomous
- c. I'm taking the train

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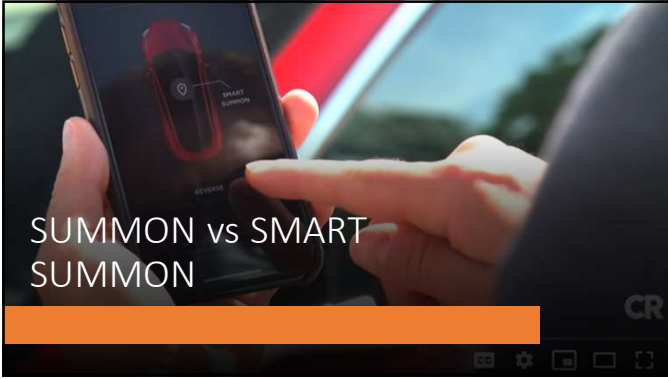
Consumer Reports Tests Summon and Other Tesla Autonomous Features

YouTube.com/watch?v=IQOf_F6hibk&feature=emb_logo

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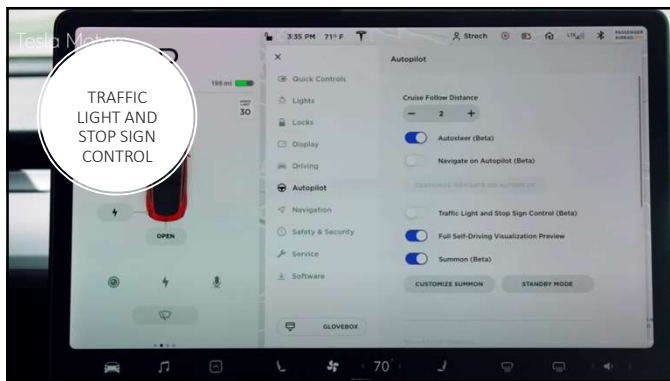
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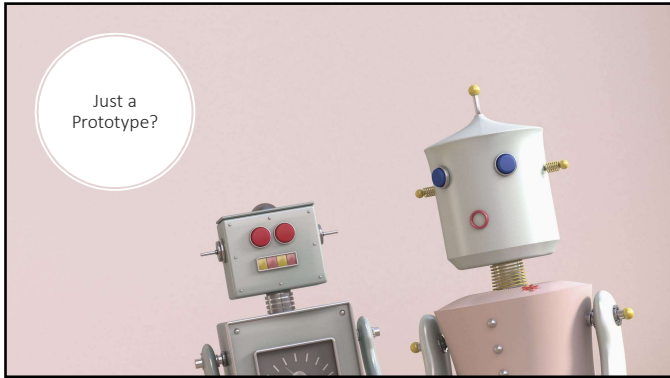
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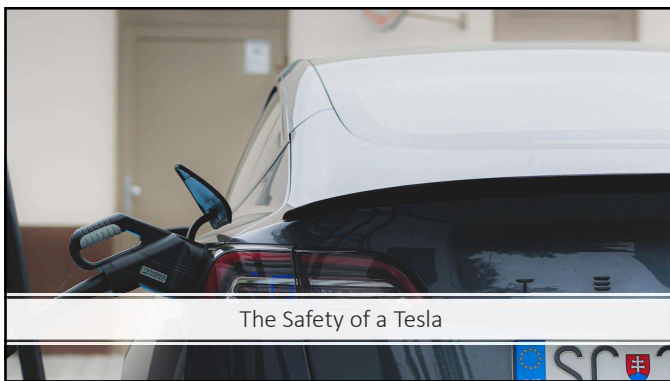
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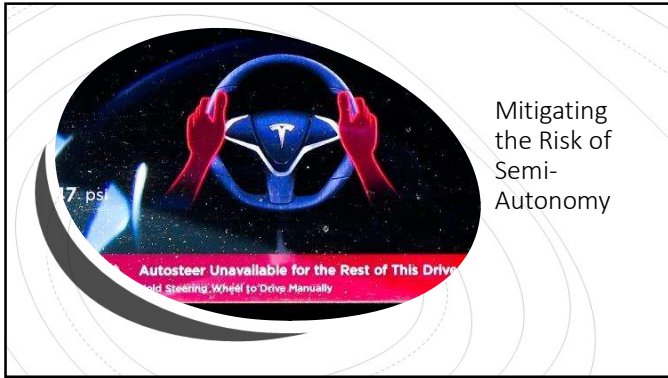
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Live Polling Question



The year is 2050. Human-piloted cars are now collector's items, and driverless cars and trucks fill our roadways. What's in your garage?

- a. Autonomous vehicle without driver controls
- b. The same Camry I drive today
- c. Boxes of stuff from my last move 4 years prior
- d. Houses won't have garages in 2050


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Does Driverless Lead to Ownerless?

- Streaming Audio and Video
- Smart livery like Uber and Lyft
- Smart car rental like ZipCar
- Driverless Uber = Driverless ZipCar?

40



Streaming Transportation

41



Is It Personal or Commercial?

42



43



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45



Hurdles Impeding Autonomous Cars

46

A photograph of a classic gas station with a sign that says "GULF". To the right of the image is a list of societal impacts. Below the image and list is a dark brown box with the text "Societal Impact".

- Police, local taxes
- Car Makers
- Car Insurers
- Car Repair Shops
- Parking garages
- Lawyers
- Home builders & remodelers
- Urban planners, highway engineers
- Doctors, hospitals, the economy
- Oil companies, coal companies, electric grid
- Thieves and crooks of all types

Societal Impact


47



Medical Costs, Societal Costs

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Live Polling Question



How will driverless cars affect automobile insurance losses?

- a. Higher frequency and severity
- b. Lower frequency, higher severity
- c. Lower frequency and severity
- d. Trending toward zero losses


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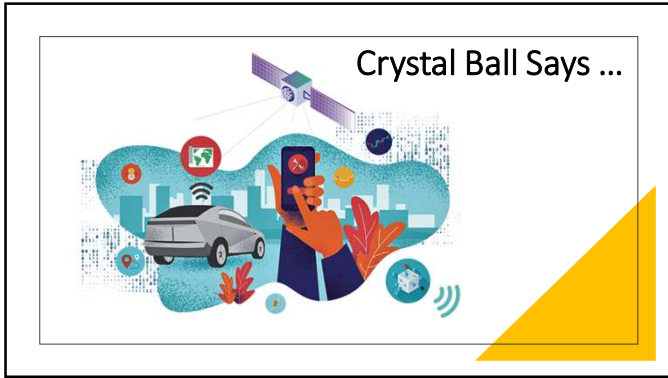
Shrinking Premiums?

50

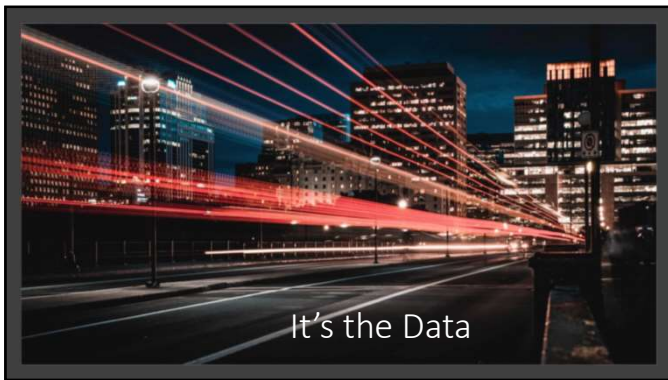
The Future of Auto Insurance



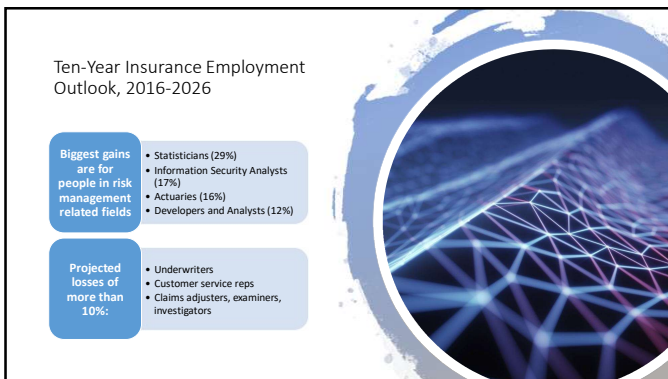
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Live Polling Question

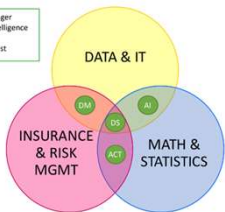


Who will be the key player for insurance analytics in the year 2030?

- a. Actuaries
- b. Data managers
- c. Data scientists
- d. Artificial intelligence

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KNOWLEDGE DOMAINS



DM - Data Manager
AI - Artificial Intelligence
ACT - Actuary
DS - Data Scientist


DATA & IT

INSURANCE & RISK MGMT

MATH & STATISTICS

What Kind of Data-Related Talent?

56



Transitioning to the Future

57



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59



60



Risk Management for Insurers

Advice from Deloitte:

- Map the implications of strategic risks with the company's risk appetite
- Build or fortify a risk sensing system to help the C-Suite and board of directors remain on top of the key strategic risks facing the company
- Prepare an action plan formulated by a newly constituted strategic risk oversight committee, with input and approval from senior management and board of directors
- Use computer-based simulation models to help executives test the strength of their decisions under various scenarios

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"THERE ARE NO ACCIDENTS."
- Master Oogway

Zero Auto Claims?

62



Longhorn Knowledge Resources

RISK MANAGEMENT AND INSURANCE CONSULTING

Easy solutions to your needs:

- Research
- Writing
- Training
- Presentations

Martin J. Frappolli, CPCU, FIDM, AIC – Principal
martinfrappolli@outlook.com



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