




The evolution of home and auto insurance

Sheri Scott, FCAS, MAAA
March 2016

Agenda

1. Home & Auto Insurance Evolution Timeline
2. Millennial Needs Driving Use of Technology and Shared Economy
3. Vehicle Automation
4. Autonomous Car Insurance Shifting Exposure Measurement



2

Home & Auto Insurance Evolution Timeline

 	 	  	   
Direct Call Center Writers	Direct Internet Writers	Advanced Rating Elements	Exposure Data Tracking Advancements



3

Direct Call Center Writers

Advantages

- Speed of sale and can bind over phone
- Appeals to those preferring to purchase over the phone than in person
- No broker network to influence rating and product design decisions
- Less commission expense
- Quote data within insurance company to help collect knowledge and Less commission expense

Disadvantages

- Little agent relationship building opportunity so less loyal
- Easier to misrepresent exposure over phone than in person so different, immediate, underwriting required

Direct Internet Writers

Advantages

- Speed of sale
- Appeals to internet savvy generation
- Less commission expense if direct (not MGA)
- No broker network to influence
- Quote data to help collect knowledge
- Can automate 80% of the onboarding and underwriting so less expense

Disadvantages

- Underwriting rules need to be tailored for online quoting & binding
- Internet is large market place that will exploit holes in rating and underwriting
- May write thousands of policies before discover issue with exposure, rating, underwriting

Advanced Rating Elements

Technological advancements allow for more granular rating

- Age of house and visual inspection ➡ Type and age of plumbing, electrical, heat, roof
- Loss history on driver / homeowner ➡ + Loss history on purchased used car / house
- Credit score rating factor ➡ Multi-variate scores (credit, tiering, lifetime value)
- Catastrophe & non-catastrophe deductible and territory ➡ By-peril rating: fire, water, wind, theft, liability, wildfire, hurricane, etc
- Territory factors consider exposure to wildfire, fire following, hurricane, flood ➡ Geo-coded property location scores and details for exposure to Wildfire, Hurricane, Flood

Exposure Data Tracking Advancements

Technological advancements allow for more granular exposure tracking

- Reported vehicle garaged location & annual miles to be driven → Trip location & miles, speed, hard breaking
Append third party data (trip traffic, weather)
- Detection systems for temperature drop, water leak, stove unattended
- Ask insured for exposure details
Purchase third party data via nightly to verify & bind (credit, prior loss history) → Third party data used real time in quoting
Avoid premium change on bind if credit or prior loss history different than reported
- House condition established via manual inspection at inception of policy → Virtual property inspection based on predicted accuracy of purchased property detail data
- Exposure to Wildfire, Hurricane, Flood, in territory rating → Geocode property location for exposure to Wildfire (fuel, slope, access), Hurricane (DTC and surface roughness), Flood (relative elev.)

Millennial Needs Driving Use of Technology & Shared Economy

- Technological advancements allow for more granular rating, with connected home and connected car data
- A website advertising insurance and detailing coverage with a number to call to get service is not acceptable to Millennials who want to do it all on their phone
- Companies focusing on phone delivery and modern needs and interests like sharing your good claims history with friends or charities are 'in' *Lemonade*
- Who buys a car now or stays in a hotel? Shared economy changing insurance needs related to renting your house out for a weekend with *airbnb*, taking *lyft* or *UBER* or a ride share like *scop*
- Shared economy & explosion of technology causing a revolution in insurance design and delivery

Vehicle Automation




Coming to a place near you...



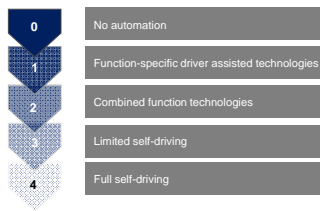
Vehicle Automation

Coming to a place near you...

Safety Features

- Insurance Institute for Highway Safety: Vehicle safety features adopted by luxury vehicles first
Front airbags introduced in 1984, became mandatory in 1998
- Auto exposure reducing from safety features
 - Air bags are the norm
 - Anti-lock breaks are the norm
 - Lane assist & parking assist warnings optional on luxury cars now
 - Self-driving features optional on luxury cars now  
 - By 2020, Chevy  EV and other manufacturers to sell autonomous cars
- Insurers generally lag a couple years to recognize safety features and exposure changes

Level of Automation (NHTSA)



Full Self Driving - Autonomous Cars

Mercedes F015

Milliman 13

Autonomous Self-Driving Safety

- Self-driving cars going to reduce accident frequency through reduction in response time & human error
- Google autonomous car accident occurred after 1.45 million miles
Frequency of 0.7 per million miles
- < Human frequency of 2.0 per million miles

Waymo

Milliman 14

Who Will Use Autonomous Cars

- Drivers like you and me
- Lyft and Uber are planning to have their own autonomous car fleet, to serve Millennials that not buying cars
- We can shift from buying cars to using driving service for our family needs
- We can shift from driving our children to/from school & practice to ordering a service to pick them up and drop them, safely, with real time tracking and video

Milliman 15

Autonomous Car Insurance Shifting Exposure Measurement

Self-driving cars going to shift exposure measurement

- Driver skills (prior accident and violation, experience)
 - Estimated distance
 - Garage location
- ↓
- Experience of auto manufacturer autonomous driving technology
 - Trip data with actual distance and time of day
 - Exact location on a real time and granular basis

Autonomous Car Impact on Insurance

Self-driving cars cause of loss shift

- Human judgment error
 - Human distracted driving
- ↓
- Technology not good enough yet (breaks for mistaken object)
 - Back Swan - system wide computer error impacting manufacturer's fleet
 - Cyber risk - illegally gain access to self driving car driving systems
 - Communication or translation error with instreaming data
 - Removal of human judgement (save the passengers or pedestrian)


Autonomous Car Impact on Insurance

Self-driving cars cause of liability shift

- Driver
- ↓
- Car manufacturer selecting & installing technology
 - Technology manufacturer
 - Wireless communicator

Next topics

- Connected Home

 **Miliman**

Thank you

Sheri Scott, FCAS, MAAA
415.394.3745
sheri.scott@miliman.com
