INNOVATION IN THE AUTOMOBILE INDUSTRY
and its Implications for Insurance

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Innovation in the Automobile Industry and its Implications for Insurance
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Telematics

Telematics: Accessing, collecting, and utilizing data from a remote location.
Telematics in Auto Insurance

• Usage based insurance (UBI) has the potential to collect much richer data on insured drivers/vehicles:
  ▪ Improved measurement of rating variables:
    • Mileage

  ▪ Creates the opportunity to measure new variables:
    • Speed
    • Hard braking
    • Time at which driving occurs
    • Routes driven
    • Lane changing
Potential Impact on Consumer of Insurance

• Reduced cross-subsidies between high and low risk drivers:
  • Premium reductions for drivers through participation discounts.
  • Hidden premium increases for non-participants.

• Expenses may become more easily measurable allowing drivers to better balance the costs and benefits of driving.

• Incentivizes drivers to improve safety when driving.
Telematics Models Used in Auto Insurance

- **Dongle** – An insurer-provided, self-installed device, used for a limited time:
  - Progressive’s Snapshot

- **Black box** - A professionally installed/permanent device:
  - Admiral’s ApplyDriver System.

- **Embedded** - Automobile manufacturers install telematics equipment that comes with vehicles:
  - State Farm’s Drive Safe & Save.

- **Smartphone** - Smartphones used as stand-alone devices or linked to vehicles’ systems:
  - State Farm’s Drive Safe & Save.
Questions?

Please submit them in the question box of the GoToWebinar taskbar.
Discussion on Telematics

Kevin Shaver, University of Pittsburgh, Lecturer in Economics

Faith Neale, Ph.D., University of North Carolina at Charlotte, Associate Professor

Brenda Powell Wells, Ph.D., East Carolina University, Risk Management and Insurance Program Director
Current Landscape: Telematics in the U.S. as of May 2014

• The use of telematics is already significant:
  - 5 markets did not have companies using UBI products
  - 10 markets have less than 5 insurers offering UBI products
  - 15 markets have between 5 and 11 insurers offering UBI products
  - 8 markets have 12+ companies offering UBI products
  - 9 markets were unable to give a precise number of insurers using telematics

Open Issues Regarding Costs of Telematics in Insurance

• Open issues with respect to insurers:
  ▪ Increased costs and due to the use of technology/data
  ▪ Higher accuracy in pricing
    ▪ Competitive advantages
  ▪ Reduced claims costs

• Open issues with respect to the broader community:
  ▪ Improved driving safety
  ▪ Reduced congestion and altered traffic flows
  ▪ Reduced automobile emissions
  ▪ Reduced insurance fraud
  ▪ Privacy, security, and use of data collected on drivers
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Implications for Competition and Innovation in Insurance Markets

• Reduced ease of price comparison:
  ▪ Data portability
  ▪ Concurrent comparison

• Symmetric vs. asymmetric adoption:
  ▪ Symmetry yields in more accurate pricing
  ▪ Asymmetry creates the potential for “cream skimming”

• Innovation:
  ▪ Protection of innovations
  ▪ Concurrent vs. leader/follower
Evolving Issues for Regulation of Insurance Markets

- What data can be collected and whose data is it?
- How will competition in insurance markets change?
- What is the appropriate usage of telematics in claims?

- Given the increased scope and precision of data that can be collected, what is the appropriate regulatory role:
  - Change the interpretation of existing statutes?
  - Need for new/revised statutes?

- How will the resources needed by DOI’s change given a rapidly evolving and more complex insurance market?
Car Sharing

Collaborative Consumption: Online marketplace connecting “idle” cars with consumers
Three Models

• B2C
  • Company has large fleet of insured vehicles
    • Location based or free floating, some specialize in airports

• P2P
  • Individual car owners rent their personal vehicle to private individuals
    • Make car available at set location for set time period such as at work location during working hours

• NFP
  • Local organization facilitates car sharing
www.zipcar.com (B2C)

Membership $7/month or $70/year and $8-$10 an hour
Growth

Source: http://futureofcarsharing.com/
Advantages

• Car Owner
  • Estimated earnings for owners: $600-$1,000 per month.

• Consumers
  • Can be more attractive than traditional rental companies
  • Cost savings: approximately $154 to $435 for round-trip members (2008 Transportation Sustainability Research Center study)
  • Convenience of location and use
  • Guaranteed parking

• Environmentalists
  • Less cars on road

Challenges

- Insurance
- Regulations
- Infrastructure
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Insurance Coverage Challenges

- Commercial or personal coverage?
- Unique policy or endorsement?
- Basic or excess limit?
Fleet Coverage

• Similar to traditional rental company except that renters may not have PAP
• Fleet company buys comprehensive policy
• Utilize loss control
P2P Coverage

- Owner has significant risk retention
  - Relies on P2P provider to qualify renters
- Unexpected liability from accident by renter
  - Judicial precedent?
- Other liability
  - Failure to maintain vehicle
Issues with Personal Auto Coverage

• Livery
  • Will the PAP cover when it is rented out?

• Who is the driver?
  • Increased risk from unfamiliar car, territory

• Who is liable?
  • App, car owner, car renter

• When did accident happen?
  • In control of owner or renter? In transition?

• Depreciation
  • Who is responsible to damage to car from an accident

• Exclusions
  • Most PAP’s exclude coverage for livery or conveyance

Source: http://insurancethoughtleadership.com/what-implications-from-car-sharing/
Turo.com (P2P)

- Partners with insurers to offer commercial and personal auto coverage for owners
- Covers during delivery and rental
  - Physical damage, collision, comprehensive and theft
  - $1 million in liability insurance
- All other times owner is protected by PAP
- Owner must tell insurer of car sharing

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Regulations

• Wisconsin
  • Defined car sharing and authorized state and localities to allow parking in time-limited zones.

• California
  • Authorizes municipality to “designate certain streets or portions” for parking. It also allocated additional money to expand car-sharing in the Bay Area.

• California, Oregon and Washington enacted laws to clarify how P2P car-sharing works.
  • Insurance
  • Regulatory framework for P2P

Source: www.ncsl.org
Partnerships

• Oregon:
  • Partnered with Amtrak Cascades and Zipcar

• Several other public transportation agencies have partnered with car-sharing organizations
  • Dallas, LA, Atlanta

• Massachusetts DOT
  • Partnered with Zipcar to provide car-sharing for state employees.

Source: www.ncsl.org
Infrastructure

• Parking availability
  • Allocation
  • Caps on parking spaces
  • Fees and permits
  • Signage
  • Enforcement
  • Public involvement

Source: Carsharing and Public Parking Policies: Assessing Benefits, Costs, and Best Practices in North America, by the Mineta Transportation Institute, San Jose State University
Additional References

- [http://tsrc.berkeley.edu/carsharing](http://tsrc.berkeley.edu/carsharing)
- Insuring the future of mobility: The insurance industry’s role in the evolving transportation ecosystem, Deloitte University Press
- Examples of car sharing insurance at [https://wallethub.com/edu/car-sharing-insurance/13783/](https://wallethub.com/edu/car-sharing-insurance/13783/)
What are Autonomous Vehicles?
NHTSA Classifications

• Level 0: Driver completely controls the vehicle at all times.
• Level 1: Individual vehicle controls are automated, such as electronic stability control or automatic braking.
• Level 2: At least two controls can be automated in unison, such as adaptive cruise control in combination with lane keeping.
• Level 3: The driver can fully cede control of all safety-critical functions in certain conditions. The car senses when conditions require the driver to retake control and provides a "sufficiently comfortable transition time" for the driver to do so.
• Level 4: The vehicle performs all safety-critical functions for the entire trip, with the driver not expected to control the vehicle at any time. As this vehicle would control all functions from start to stop, including all parking functions, it could include unoccupied cars.
Potential Insurance Benefits

• Less driver errors = reduced accidents = fewer injuries/fatalities
  • 93% of auto accidents are due to human error
  • Currently 35,000+ fatalities in the US each year
  • Computers drive much better than humans

• No need to worry about driver impairment (young age, intoxication, seizures, vision problems, etc.)

• Reduced need for auto insurance

• Reduced car theft (due to vehicle’s self-awareness)
Safety Challenges

• Vehicle software reliability and vulnerability
• Inexperienced drivers if/when complex situations require manual driving.
• Are they really safe?
Google’s Accident Rate:
14 Total Accidents

• Rear-ended at a stop sign or traffic light (9)
• Vehicle was side-swiped by another driver (2)
• Another driver rolled through a stop sign (1)
• Google employee was driving car manually (1)
• Car attempted to avoid sandbags and struck a bus (1)
Tesla: May 2016

• Fatal accident with an 18-wheeler in the U.S.
• According to Tesla
  - “neither autopilot nor the driver noticed the white side of the tractor-trailer against a brightly lit sky, so the brake was not applied.”
  - Car drove under the 18-wheeler, killing the driver
  - Tesla’s first known autopilot death in over 130 million autopilot driven miles
    • There is a fatality every 94 million miles among all types of vehicles in the U.S.
  - Cannot play movies on the car’s screen
• According to Truck Driver: driver was “playing Harry Potter on the TV screen”
• According to Highway Patrol: there was an after market DVD player in the car
• “The Tesla...is not intended to be used hands-free...”
• “Autopilot requires full driver engagement at all times.”
  • Driver set cruise control at 74 mph 2 minutes before the crash
  • He should have had at least 7 seconds to see the truck and take action
Problem Area: Levels 2 & 3

• Level 0: Driver completely controls the vehicle at all times.
• Level 1: Individual vehicle controls are automated, such as electronic stability control or automatic braking.
• Level 2: At least two controls can be automated in unison, such as adaptive cruise control in combination with lane keeping.
• Level 3: The driver can fully cede control of all safety-critical functions in certain conditions. The car senses when conditions require the driver to retake control and provides a "sufficiently comfortable transition time" for the driver to do so.
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Limitations of the Vehicles

• Technology is not smart enough to predict what other drivers will do
• Cars are confused when rain and snow make the lines on the roads hard to see
• Potholes are tough—hard to tell if it’s a shadow, oil spot, etc.
• What to do in tough decisions—do we protect the driver or those outside the vehicle?
Insurance Implications

• If driver behavior is taken out of the accident equation:
  • Claims for accidents will be based on products liability, NOT driver error
  • The need for auto insurance will go down
  • The personal and commercial auto insurance markets will shrink

• When accidents do occur, who will be at fault?
  • The people who made the hardware?
  • Or the software?
  • Or the mapping platform?
  • Or maybe we blame another car that sent a faulty signal on the highway?
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Serious Labor Market Implications

• Reduction in human traffic errors
  • Fewer traffic citations = less government revenue = less need for traffic patrol officers
  • Fewer insurance claims = less demand for claims adjusters
  • Fewer insurance claims = less revenue for body shops, chiropractors, emergency rooms and attorneys
Discussion

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