Insurance for safer roads

October 10th 2018, Berkshire, UK

#RoadSafety
## Agenda Pt 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30-9:00</td>
<td>Registration and Welcome Coffee</td>
<td></td>
</tr>
</tbody>
</table>
| 9:00-9:10     | Welcome                                                                 | • Welcome and administration  
• Objectives of the workshop                                                      | Dave Baldwin, Thatcham Research  
Andrew Bradley, Nestle & GRSP Chair                                                |
| 9:10-9:30     | Keynote Address 1                                                       | Thatcham Research Centre – what’s coming next?                                  | Dave Baldwin, Head of Insight, Thatcham Research                                   |
| 9:30-9:45     | Keynote Address 2                                                       | Latest WHO data and trends in road crash death and injury                         | Dave Cliff, CEO GRSP                                                              |
| 09:45-10:30   | Discussion Panel 1 – The Broader Perspective                            | An interactive discussion addressing issues including: distracted driving, data,  
sustainability, the SDGs and the broader perception of road safety and mobility   | Dave Baldwin, Thatcham Research  
Dave Cliff, GRSP  
Nick Starling, RoadSafe, PACTS  
Angus Poulain, Keeping Roads Safe                                                |
| 10:30-10:45   | Coffee Break                                                            |                                                                                |
What’s coming?

Matthew Avery
Director of Insurance Research, Thatcham Research
Latest data and trends

Dave Cliff
CEO, Global Road Safety Partnership
Global Road Safety Partnership

Insurance for Safer Roads

10 OCTOBER 2018 | DAVE CLIFF
World Health Organisation – Global Health Estimate – Annual Road Fatalities

Millions of Global Road Crash Fatalities

- 2000: 1.136
- 2005: 1.235
- 2010: 1.308
- 2016: 1.402

- Millions of Global Road Crash Fatalities
## Leading Causes of Death Globally

<table>
<thead>
<tr>
<th>#</th>
<th>Cause</th>
<th>2000 (million deaths)</th>
<th>2016 (million deaths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ischaemic heart disease</td>
<td>7,029</td>
<td>9,433</td>
</tr>
<tr>
<td>2</td>
<td>Stroke</td>
<td>5,170</td>
<td>5,781</td>
</tr>
<tr>
<td>3</td>
<td>Lower respiratory infections</td>
<td>3,325</td>
<td>2,957</td>
</tr>
<tr>
<td>4</td>
<td>Chronic obstructive pulmonary disease</td>
<td>2,972</td>
<td>3,041</td>
</tr>
<tr>
<td>5</td>
<td>Diarrhoeal diseases</td>
<td>2,246</td>
<td>1,992</td>
</tr>
<tr>
<td>6</td>
<td>Tuberculosis</td>
<td>1,684</td>
<td>1,708</td>
</tr>
<tr>
<td>7</td>
<td>HIV/AIDS</td>
<td>1,469</td>
<td>1,599</td>
</tr>
<tr>
<td>8</td>
<td>Preterm birth complications</td>
<td>1,382</td>
<td><strong>Red</strong>: 1,402</td>
</tr>
<tr>
<td>9</td>
<td>Trachea, bronchus, lung cancers</td>
<td>1,257</td>
<td>1,383</td>
</tr>
<tr>
<td>10</td>
<td>Road injury</td>
<td>1,136</td>
<td><strong>Red</strong>: 1,293</td>
</tr>
</tbody>
</table>

Road crash deaths have increased from 10\textsuperscript{th} leading cause of death globally to 8\textsuperscript{th}. 

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**Note:**

- **Red** indicates an increase in rank.
- **Bold** indicates an increase in number of deaths.
Millions of Global Road Crash Fatalities

- ROAD FATALITIES (1.402)
- SELF HARM (0.793)
- FALLS (0.66)
- OTHER UNINTENTIONAL (0.63)
- INTERPERSONAL VIOLENCE (0.477)
- DROWNING (0.322)

INCREASING ROAD

2016 vs 2000
Road traffic mortality rate, 2013*

Mortality rate (per 100,000 population)
- <10.0
- 10.0–19.9
- 20.0–24.9
- ≥25.0

Data not available
Not applicable

* WHO Member States with a population of less than 90,000 in 2015 who did not participate in the survey for the Global status report on road safety 2015 were not included in the analysis.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement. © WHO 2015. All rights reserved.

Data Source: World Health Organization
Map production: Information Evidence and Research (IER)
World Health Organization

Road Fatality rates in Africa remain the world’s highest.
• Easy to suggest a low-cost policy targeted at improving road safety, such as a campaign aimed at improving driver behaviour.

• Such policies have little effect beyond giving the impression that the government is taking the issue seriously.

• Globally, government policy, particularly when it comes to road safety, is hollow without the related financial muscle to back it up.

• If road users around the world can remain confident that they won't be subject to their country's laws due to insufficient enforcement, the laws will have no effect on driver behaviour and subsequently no effect on road traffic injuries.
Common challenges

- **Road safety is not a political priority** – Subordinated to other priorities. Little opposition to improved outcomes but strong opposition to reforms required to achieve it

- **Road Safety is seen as an issue of personal responsibility rather than government (in) action** - We tend to blame individual road users rather than systemic failures

- **Little coordination between relevant government bodies**

- **Data is lacking** – The true scale of the problem is rarely understood and usually underestimated

- **Lack of knowledge** – Limited understanding of what works and the ‘Safe System’ approach
Global Road Safety Partnership – What we do

- Advocate for evidence-based road safety legislation
- Deliver road safety, road policing and leadership education, training and capacity building
- Design, tailor and deliver an international road safety grants programme
- Develop and implement evidence-based road safety projects, primarily in low and middle-income countries and monitor and evaluate outcomes
- Provide expert review and technical advice on road safety strategy, policy and projects
Global Road Safety Partnership – Who we are

- We are part of an extensive international multi sector network of partners committed to reducing road trauma
- Our people are professionals with expertise in road safety that includes academic research, project management, communications, journalism, advocacy, road policing, education and training
• We form partnerships between the private sector, civil society and governments to improve road safety primarily in low and middle-income countries and can utilise our network of Red Cross/Red Crescent Societies to reach every corner of the globe.
Prioritization of Evidence-Based Risk Factors in Road Safety

- Extensive body of scientific research from many countries demonstrating increased risk of road traffic fatalities and injuries due to:
  - excessive or inappropriate speed
  - drink driving
  - non-use of seat-belts & child restraints
  - non-use of motorcycle helmets
- Understanding the risks associated with these unsafe behaviours, the severity of crash outcomes and the socio-economic impact is key to promoting, designing and implementing successful interventions

SaveLIVES Technical Package, World Health Organization, 2017

Good Practice Manuals, WHO, GRSP, FIA Foundation:
https://www.grsproadsafety.org/resources/good-practice-manuals/
Conclusions

Scientific research provides strong evidence that interventions in 4 risk factors:

• Speeding
• Drink and driving
• Using safety belts
• Helmets wearing

have a positive impact on improving road safety.

Many country examples where efforts to tackle these risk factors by prioritising and properly resourcing them have resulted in substantial reductions in road trauma.

Focussing effort on evidence based interventions reduces road trauma
Current Projects

• Road Policing Capacity Building *(Bloomberg Initiative for Global Road Safety BIGRS)*

• We are working with Police in nine mega-cities...
  • Accra (Ghana)
  • Addis Ababa (Ethiopia)
  • Bandung (Indonesia)
  • Bangkok (Thailand)
  • Bogota (Colombia)
  • Fortaleza (Brazil)
  • Ho Ch Minh City (Vietnam)
  • Mumbai (India)
  • Shanghai (China)

Key crash risk factors –
• Drink Driving
• Excessive Speed
• Seat belts and child restraints
• Motorcycle helmets

Supporting Media Campaigns – greatly improve enforcement effectiveness
Current Projects

- **Global Road Safety Leadership Course** jointly with John Hopkins University and funded by Bloomberg Philanthropies *(e.g. new understanding of roles in a Safe System approach)*

- **Advocacy Programmes** working with Civil Society organizations in five countries to advocate for stronger road safety laws and new car safety standards
  - Tanzania
  - India
  - Philippines
  - China
  - Thailand
  - Mexico

*Capacity building – road safety technical expertise, but including financial, administrative, management and advocacy development.*

*Only 7% of the world’s population is covered by adequate laws which address key behavioural risk factors*
Current Projects

• Botnar Child Road Safety Challenge (NEW INITIATIVE)

The Challenge is designed to fund projects which address locally relevant road safety problems with practical, innovative and evidence-based interventions from multi-sectoral consortiums in small and mid-sized cities...

• Mexico
• Vietnam
• India
• Tunisia
• South Africa
• Romania

Cities as incubators of innovation and agents of change!

Our Focus is Child Health and Wellbeing. Worldwide.

Strong emphasis on improving enforcement!
Current Projects

Other member and donor funded road safety projects

- Multi-layered education programme (VIA 21) - Total and Michelin

Road Safety Projects

- Namibia – FedEx
- Myanmar – Total, Shell and Toyota
- Brazil and South Africa – Michelin
- Albania – Shell

Road Safety Events

- Insurance for Safer Roads – Insurance Industry Event – Thatcham, UK
- Africa Road Safety Conference – Focus upon Africa issues – Cape Town, South Africa
Panel 1 – The broader perspective

- Dave Baldwin, Thatcham Research
- Dave Cliff, GRSP
- Nick Starling, RoadSafe, PACTS
- Angus Poulain, Keeping Roads Safe

Facilitator: Michael Chippendale, GRSP
We recommence at 1045
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<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>10:45-11:05</td>
<td><strong>Presentation 1 – Autonomous Vehicles</strong></td>
<td>Karl Gray, Global Head of Motor &amp; Personal Lines, Zurich</td>
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<tr>
<td></td>
<td>The latest developments, opportunities and challenges</td>
<td></td>
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<tr>
<td>11:05-11:20</td>
<td><strong>Presentation 2 – Case Study</strong></td>
<td>Josh Poulain, CTO, Keeping Roads Safe</td>
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<td></td>
<td>DriveCare – tracking vehicles, drivers and fuel use</td>
<td></td>
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<tr>
<td>11:20-11:40</td>
<td><strong>Presentation 3 – Movemos Seguros</strong></td>
<td>Miquel Nadal, Secretary FIA High Level Panel</td>
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<td></td>
<td>An update on the FIA High Level Panel and IDB insurance initiative in Latin America and the Caribbean</td>
<td></td>
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<tr>
<td>11:40-12:30</td>
<td><strong>Discussion Panel 2 – The Insurance Perspective</strong></td>
<td>Miquel Nadal, FIA High Level Panel</td>
</tr>
<tr>
<td></td>
<td>An interactive discussion addressing challenges facing the insurance industry and ways to influence driver behaviour.</td>
<td>Karl Gray, Zurich Ed Rochford, Carrot Insurance Andrew Bradley, Nestle</td>
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<td></td>
<td><em>Facilitated by Nick List, Zurich</em></td>
<td></td>
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<td>12:30-12:40</td>
<td><strong>Next steps</strong></td>
<td>Dave Cliff and Andrew Bradley</td>
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<td></td>
<td>What’s next for Insurance for Safer Roads?</td>
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<tr>
<td>12:40-13:40</td>
<td><strong>Lunch and networking</strong></td>
<td></td>
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<td>13:40-15:10</td>
<td><strong>OPTIONAL FIELD DEMONSTRATION</strong></td>
<td>Thatcham Research</td>
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<td></td>
<td>Field tour of the Thatcham Research facility</td>
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Autonomous vehicles – developments and opportunities

Karl Gray
Global Head of Motor and Personal Lines, Zurich
Understanding the Impact of Autonomous Vehicles on Insurance

10th October 2018
Karl Gray – Group Head of Motor and Personal Lines

Group Underwriting Excellence
Insurance for Safer Roads Workshop

The Current Status of Autonomous Vehicles
Insurance for Safer Roads Workshop
Announcements from Manufactures

<table>
<thead>
<tr>
<th>2015-16</th>
<th>2017-19</th>
<th>2020</th>
<th>2021-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015: Tesla Auto Pilot available</td>
<td>2017: A8 with AI traffic jam pilot (SAE level 3) to handle traffic up to 37.3mph</td>
<td>2020: Next gen of Leaf to have autonomous features</td>
<td>2019-21: Partnered with Uber to provide 24,000 XC90 SUV with AV technology</td>
</tr>
<tr>
<td>2016: NuTonomy begins pilot of self-driving vehicle in Singapore</td>
<td>2017: Self-driving features to be made available in new E-Class</td>
<td>2020: Lexus to self-drive on highways, RoboTaxi for Olympics</td>
<td>2021: Plans to mass produce AVs and partner with ride sharing companies</td>
</tr>
<tr>
<td></td>
<td>2018: Launch of fully AV in the Phoenix area in partnership with FCA</td>
<td>2020: Expected launch of level 4 Audi's self-driving car</td>
<td>2021: Plans to launch fully AVs (the Sedric) electric cars, vans, and trucks</td>
</tr>
<tr>
<td></td>
<td>2019: Plan to launch car with full self-driving capabilities</td>
<td>2020: Launch of fully AV fleet commercially to compete with Uber and Lyft</td>
<td>Key: Semi-autonomous models</td>
</tr>
</tbody>
</table>

USA 29 States have also passed legislations over the last few years to encourage the development, testing and deployment of fully-autonomous vehicles. For example

<table>
<thead>
<tr>
<th>State</th>
<th>Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>Allows testing and deployment of autonomous vehicle on state roads without a human operator</td>
</tr>
<tr>
<td>Nevada</td>
<td>Allows for testing and operation of fully-autonomous vehicles; also authorizes commercial use of fully autonomous vehicles</td>
</tr>
<tr>
<td>Washington</td>
<td>Executive order signed by the Governor in June 2017, establishing an autonomous vehicle work group and directing state agencies to support the safe testing and operation of autonomous vehicles on Washington’s public roads</td>
</tr>
<tr>
<td>Florida</td>
<td>Allows operation of autonomous vehicles on public roads and eliminates requirements related to the testing of autonomous vehicles and the presence of a driver in the vehicle</td>
</tr>
<tr>
<td>Michigan</td>
<td>Allows fully autonomous vehicles, including those without drivers and steering wheels, to begin using public roadways</td>
</tr>
<tr>
<td>Arizona</td>
<td>Executive order signed by the Governor in August 2015, permitting several agencies to take adequate steps to aid testing and operation of automated vehicles on public roads in the state</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Executive order signed by the Governor in October 2016 to promote the testing and deployment of autonomous vehicles, by creating a working group on autonomous vehicles</td>
</tr>
</tbody>
</table>

Note(s): SELF DRIVE Act - Safety Ensuring Lives Future Deployment and Research in Vehicle Evolution Act  
Source(s): Reuters. NCSL Website. The Verge. The Columbian Website. Computerworld Website. US DoT . NHTSA

UK The Pathway to Driverless Cars review (code of conduct) was published by the Department for Transport in February 2015 and concluded:

“Real-world testing of automated technologies is possible in the UK today, providing a test driver is present and takes responsibility for the safe operation of the vehicle; and that the vehicle can be used compatibly with road traffic law.”
Zurich has extensive experience in SDV pilots across different geographies (1/2)

<table>
<thead>
<tr>
<th>Pilot // Initiative</th>
<th>Market</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Driverless Vehicles Initiative</td>
<td>🇦🇺</td>
<td>Autonomous Vehicle trial in Australia. We have partnered with the ARRB to support the Autonomous Vehicle trial in Australia. Zurich is one of a number of selected 'insurance partners'</td>
</tr>
<tr>
<td>UK ABI Autonomous Driver Interest Group</td>
<td>🇬🇧</td>
<td>Zurich is part of an alliance of 11 insurance companies in the UK, led by the Association of British Insurers (ABI), which have come together to address the changes needed to ensure cars are safe and regulation</td>
</tr>
<tr>
<td>European Union (CityMobil2)</td>
<td>🇪🇺</td>
<td>Zurich was the official insurance partner of largest EU-funded SDV project. We quoted pilots running under this project. CityMobile2 officially ended in October 2017, however further opportunities are anticipated</td>
</tr>
<tr>
<td>German Insurance Association Working Group of Autonomous Vehicles</td>
<td>🇩🇪</td>
<td>Zurich is represented in the German Insurance Association working group by Head of Motor, Dr Christoph Lueer</td>
</tr>
<tr>
<td>San Sebastian</td>
<td>🇪🇸</td>
<td>Quotation successfully converted and policy issued for San Sebastian pilot in Spain. Policy produced in GC Germany and received in Spain. Pilot now complete.</td>
</tr>
</tbody>
</table>
Zurich has extensive experience in SDV pilots across different geographies (2/2)

<table>
<thead>
<tr>
<th>Pilot // Initiative</th>
<th>Market</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTONOMY</td>
<td>⚖️</td>
<td>Policy issued for a company in Singapore that provides software and hardware for end users developing Self-Driving Vehicles. 3 SDV pilot vehicles were covered for the government of Singapore. Pilot also included one vehicle that was tested in USA</td>
</tr>
<tr>
<td>Easy Mile / Omnix Company</td>
<td>🇪🇬</td>
<td>Zurich insured the 'Easy Mile / Omnix Company' for their 10 seat bus designed to travel short distances on pre-programmed routes at the MENA transport Congress and Exhibition in April 2016. This policy is written out of France for EasyMile. The pilot continues. Discussions between 'EasyMile' a manufacture or SDV's and Zurich have resulted in the pilot in Dubai. We have been asked to quote for further pilots across the Globe.</td>
</tr>
<tr>
<td>Major Motor Manufacturer</td>
<td>🇬🇧</td>
<td>We have agreed to provide cover for a major US automobile manufacturer covering all their European vehicles for SDV testing</td>
</tr>
<tr>
<td>Global activity</td>
<td>🌍</td>
<td>In 2014, Zurich established a cross-functional SDV Working Group to develop and implement an SDV and ADAS strategy. The Working group meets bi-monthly and has participation from underwriting, claims, risk engineering, actuarial and market facing individuals</td>
</tr>
</tbody>
</table>
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The future impact of Autonomous Vehicles
Insurance for Safer Roads Workshop

5 Levels of Automation

Level 0: Driver only
- Driver task: Driver completely in charge
- System task: Driver in charge of longitudinal or lateral control
- Vertical or lateral control: Vehicle takes charge of other functions

Level 1: Assisted
- "Feet-off" (driver is in monitoring mode)
- Vertical and lateral control: Vehicle runs both longitudinally and laterally in certain situations
- "Hands-off" (driver needs to be ready to take over as a backup system)

Level 2: Partly automated
- "Eyes-off" (driver is not required)
- Vertical and lateral control: Vehicle runs both longitudinally and laterally in certain conditions. Vehicle will give advanced warning to driver

Level 3: Highly automated
- "Brain-off" (driverless during defined use case)
- Full control: Vehicle runs both longitudinally and laterally in certain conditions. Vehicle capable of establishing a risk minimized state

Level 4: Autonomous
- "No driver" (vehicle is capable of performing all driving tasks independently with no driver required)

Level 5: Driverless
- Vehicle runs both longitudinally and laterally in certain conditions. Vehicle capable of establishing a risk minimized state

Source: Barclays Research
Number of Vehicles reduce but usage increases

**Traditional Vehicles**
- limited self-driving capabilities
- work or personal use
  work: pickups, large SUVs, commercial vans
  personal: cars/CUVs, performance

**Family Autonomous Vehicles (FAVs)**
- Vehicles/household: 2.1
- Annual miles/vehicle: 10,000
  - 0.7 vehicles
  - 23,529 miles

**Flow:** Family with two vehicles
- Home → Work
- School → Social

**Shared Autonomous Vehicles (SAVs)**
- 7:1 traditional vehicles displaced per SAV
- 12% additional VMT due to empty trips
- Annual miles/vehicle: 10,000
  - Sedan: €0.26 per mile ride cost to consumers per SAV
  - Two seater: €0.17 per mile ride cost to consumers per SAV
  - 64,000 miles

**Pooled Shared Autonomous Vehicles (PSAVs)**
- 17:1 traditional vehicles displaced per PSAV
- 50%+ reduced VMT due to shared rides
- Annual miles/vehicle: 10,000
  - Sedan: €0.10 per mile ride cost to consumers per PSAV
  - Two seater: €0.08 per mile ride cost to consumers per PSAV
  - 64,000 miles

**Flow:** one vehicle shared by multiple family members
- Home → Work
- School → Social
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Automation - Impact on Frequency

Accident frequency per vehicle by year (baseline scenario)

Source: KPMG LLP actuarial analysis

Average incidents per vehicle
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Automation - Impact on Severity

Severity per accident

Source: KPMG LLP actuarial analysis
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Automation - Impact on Motor Premiums

Figure 3
Forecast of motor insurance premium, taking into account impact of technology (not taking into account inflation and assuming 100% ADAS adoption rate)

14 largest motor markets: Brazil, Canada, China, Egypt, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, UK, US

Source: Swiss Re, 2015
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Impact on Premium – Emerging V Developed

- **Continuation of current trends**
  - Continuing growth in fleet (+64%) & in premium (+81%)

- **Market dislocation from autonomous technology**
  - Continuing strong fleet growth (+66%) modestly offset by technology shift - premiums still up +74%

- **A new normal starts to return**
  - Autonomous technology moves mainstream in EM. Fleet continues to grow (+23%) but premiums fall (-10%)
  - Fleet still shrinking (-6%) & premiums drop a further -37%

**Source:** Autonomous estimates
Insurance for Safer Roads Workshop

Automation – Chaos Creates Opportunity

[Chart showing premium collection and market trends from 2020 to 2050, with specific years noted for market changes and premiums levels.]

- 2024: Market decline begins
- 2025: $15B
- 2026: AV loss will begin
- 2035: $23B
- 2035: Loss of $25B
- 2050: $34B
- 2050: Loss of $41B

Legend:
- **Blue**: Opportunity in three new insurance product lines
- **Purple**: Traditional auto insurance premiums

**Premium Types**:
- Cyber Security Premiums
- Infrastructure Premiums
- Software/Hardware Failure Premiums
- Traditional Premiums Earned
The existing legal framework for statutory motor liability has the potential to deal with SDVs and ADAS. It is likely that the legal system and claims process will initially still hold the ‘owner’ of the vehicle responsible, as the law currently indicates.

When the owner of the vehicle is considered liable for damage or injury in the ‘first instance’, the injured party can be compensated promptly while the party ultimately responsible is pursued for the damage via subrogation.

Many national legal frameworks are taking a similar view. The recently enacted Automated and Electric Vehicles Act 2018 Act in the UK states that

insurers that insurers will be liable in respect of damage to people or property where an accident is caused by an automated vehicle, driving as an automated vehicle, where the vehicle is insured at the time.
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over 40% of the vehicles on the road in the UK will have at least one ADAS system by 2020

<table>
<thead>
<tr>
<th>ADAS Technology</th>
<th>Collision Type</th>
<th>Source</th>
<th>Reduction Estimate</th>
<th>Estimate Method</th>
<th>Weather</th>
<th>Geography</th>
<th>Speed</th>
<th>Sample Size</th>
<th>OEM Diversity</th>
<th>Publication Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Collision Warning</td>
<td>Rear</td>
<td>IIHS</td>
<td>27%</td>
<td>✓</td>
<td>✓</td>
<td>✔</td>
<td>✓</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Rear</td>
<td>DOT</td>
<td>27%</td>
<td>✓</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Rear</td>
<td>IIHS</td>
<td>23%</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>NCBI</td>
<td>67%</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td></td>
<td>Rear</td>
<td>AAA</td>
<td>10%</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Automatic Emergency Braking</td>
<td>Rear</td>
<td>IIHS</td>
<td>50%</td>
<td>✓</td>
<td>✓</td>
<td>✔</td>
<td>✓</td>
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<td>Rear</td>
<td>DOT</td>
<td>43%</td>
<td>✓</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Rear</td>
<td>IIHS</td>
<td>40%</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>IIHS</td>
<td>17%</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Rear</td>
<td>EU NCAP</td>
<td>38%</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>Adaptive Cruise Control</td>
<td>Rear</td>
<td>Academic</td>
<td>10%</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Rear</td>
<td>AAA</td>
<td>17%</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Legend:
- Estimate Method: ✔ Collision Data, ✔ Simulation, ✗ Survey / Other
- Other: ✔ Inclusive / Favorable, ✗ Limited / Unfavorable
Understanding the Impact of Autonomous Driving on Insurance

Summary

1. **significantly change the way we insure vehicles;** including underwriting, pricing, proposition development, distribution and claims.

2. **claims frequency will fall. Severity will increase. Premiums will eventually fall,** but not for sometime. The impact in developed markets will be more pronounced.

3. **car sharing will become much more prominent.**

4. **semi-autonomous technological impact is imminent.** Full Autonomy is sometime off and will initially be relevant in niche areas.

5. **new risks will** emerge with the development of SDVs and ADAS including cyber hacking, software and technology malfunctions, as well as connectivity and infrastructure failures.

6. **Zurich is embracing autonomous technology** and is involved in a number of pilots and partnerships across the world.
DriveCare – A case study

Josh Poulain
CTO, Keeping Roads Safe
DriveCare
By
Keeping Roads Safe Technologies Inc.
Mission statement: We build road safety products that save lives on a global scale.
Distracted Driving Is An Epidemic That Is Not Being Properly Addressed

So we built the first smart vehicle platform dedicated to preventing distracted driving worldwide.
So we built the first smart vehicle platform dedicated to preventing distracted driving worldwide.
Cell Phone Activity
Visibility
Time of Day
Speed
Weather
High Risk Places
What Are High Risk Places?

1. High Volumes of Pedestrians
2. Unpredictable Traffic
3. Frequent Stops
Structured Data

- Third Party Data
- DriveCare Data

- Data Modeling
- Driver Behaviour Tracking
- Predictive Analytics
- Insights Via API
- Insights via Web Dashboard
Thank You

For More Information, Contact:

Josh Poulain
CTO, Keeping Roads Safe Technologies

josh@keepingroadssafe.com
Movernos Seguros – Updates from the HLP and IDB LatAm initiative

Miquel Nadal
Secretary, FIA High Level Panel for Road Safety
“Movernos seguros”

Miquel Nadal
HLP Secretary

3rd Insurance for Safer Roads Workshop
Berkshire, October 10th 2018
“Movernos seguros”: Improving road safety through the development of car insurance markets in Latin-American and the Caribbean

Market based approach
What we want to explore

Compensation:
So called “third party liability insurance” – often, but not always compulsory - provides health coverage and economic compensation to the victims of road crashes.

Responsible behaviour:
The implementation of “bonus-malus systems” (where drivers with no claims enjoy reduced premiums and vice versa) is a powerful incentive for customers to improve their driving habits.

Miscellaneous:
- The data gathered by insurance companies can be useful to design and implement efficient road safety policies.
- Insurance companies play a leading role in raising awareness about road safety issues, and in informing and training drivers to improve their skills.
- In some countries, levies on car insurance premiums are used to partly finance lead road safety agencies.

The 3 way relationship between road safety and car insurance markets:
Taken together, all these links could generate a virtuous circle, whereby better driving reduces road crashes and road traffic injuries, thus benefitting society as a whole, while improving insurer’s results and revenues at the same time.
The HLP-IDB initiative

• After some failed contacts (Geneva Association) and after conducting some research, it was concluded that the car insurance industry is very segmented, so global initiatives seem to be difficult. It probably makes more sense to launch initiatives at a regional level.

• Before embarking in this initiative, some basic research has been done:
  
  • On the situation of car insurance markets in LATAM. The conclusion is that these markets have an important potential of development and that this could have a significant impact on road safety.

  • On the willingness/interest of governments (road safety agencies) and industry to participate in the initiative; with positive results on both fronts.
The joint initiative between the IDB and the HLP, aims mainly at the three following objectives:

01
Bring together relevant stakeholders that can help exploit the synergies between car insurance and improving road safety:
- governments
- insurance companies (domestic and international),
- local NGOs, especially victims’ associations
- FIA clubs
- OISEVI (Ibero American Road Safety Observatory)

02
Explore potential ways of collaboration to develop the synergies between car insurance and improved road safety, both at a regional and at a national level; and eventually, collaborate in the implementation of these synergies and shared programs.

03
Raise awareness at the highest level, both within governments and the private sector, about the road safety challenges that the countries of the region face in the coming years, and about the opportunities that the insurance industry could offer for the benefit of all.
Movernos Seguros: Main Objectives

There are many existing projects that involve cooperation between insurance companies, governments and other stakeholders. **Movernos Seguros** wants to build on them and do it with a more systematic approach.
What have we done?

2017

- Online kick off meeting with insurance partners (April 28th). Excellent reception
- Official presentation of the project at the OISEVI Assembly (San José, June 22nd). Victims associations showed big interest in the project
- Workshop with road safety authorities, insurance companies and insurance regulators, with participation of FIA and IDB Presidents (Washington DC, October 12th)
What have we done?

2018

• 2nd Movernos Seguros Workshop in Montevideo in the framework of FIA’s Regional Congress (July 23rd)

• Presentation of the initial results of the report commissioned by the IDB and the FIA on the situation of insurance markets and road safety in LATAM

• Since then started collecting complementary inputs and working together with the Inter-American Federation of Insurance Companies (FIDES), on the final version of this report.
1. Important increase of the vehicle fleet, especially of motorcycles: total vehicle fleet has increased around 6% annually since 2010, motorcycles increasing around 9% annually. It is estimated that in 2017, there are 222 million vehicles in LAC and around 56 million motorcycles. The share of motorcycles is increasing rapidly.
2. Stabilisation in the number of road victims, but with an increase in the last 2 years: the rate of fatalities has remained stable at around 16 deaths per 100 thousand population, but between 2015 and 2017 there has been an increase in absolute terms in the number of fatalities (from 92 to 98 thousand). The share of motorcycle fatalities is increasing significantly in many countries.
3. Some basic indicators of the size of insurance markets in LATAM (1)

**Table 1 Vehicles and their impact on the insurance industry in LAC**

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2013</th>
<th>2017 (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive park</td>
<td>110,491,505</td>
<td>179,332,295</td>
<td>221,589,726</td>
</tr>
<tr>
<td>Total premiums industry</td>
<td>79,967</td>
<td>153,857</td>
<td>109,898</td>
</tr>
<tr>
<td>Voluntary car premiums</td>
<td>17,196</td>
<td>32,606</td>
<td>26,517</td>
</tr>
<tr>
<td>Compulsory Car Insurance (CCI) Premiums (3)</td>
<td>1,729</td>
<td>3,476</td>
<td>2,049</td>
</tr>
<tr>
<td>Total claims</td>
<td>32,228</td>
<td>55,258</td>
<td>56,295</td>
</tr>
<tr>
<td>Claims voluntary policies</td>
<td>9,790</td>
<td>15,833</td>
<td>14,985</td>
</tr>
<tr>
<td>Claims CCI</td>
<td>961</td>
<td>2,145</td>
<td>1,457</td>
</tr>
</tbody>
</table>

(1) The figures for premiums and claims are expressed in millions of US dollars. The data for each variable correspond to LAC.

(2) The decrease in premiums compared to 2013 is mainly based on the behavior of the exchange rate of the countries against the US dollar.

(3) Correspondes a las primas de seguros obligatorios de Bolivia, Brasil, Chile, Colombia, Costa Rica, Nicaragua y Venezuela.
3. Some basic indicators of the size of insurance markets in LATAM (2)

<table>
<thead>
<tr>
<th>Table 2: Main indicators of car insurance in LAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share in total premiums</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Share in total premiums</td>
</tr>
<tr>
<td>Share in total claims</td>
</tr>
<tr>
<td>Share of premiums as a % of GDP</td>
</tr>
<tr>
<td>Share of claims as a % of GDP</td>
</tr>
</tbody>
</table>

(1) Last year available 2016
(2) Last year available 2016.
4. **Heterogeneity in the development of vehicle insurance markets**: 3rd party liability insurance is compulsory in most of the region, except in Guatemala, Honduras, El Salvador and Paraguay (and partly in Mexico). In many countries, premiums are not regulated, but in Bolivia, Brazil, Colombia, Nicaragua, the Dominican Republic and Venezuela they are. Bad drivers are covered at the expense of good ones.
5. In countries where insurance is compulsory, the % of cars covered varies significantly. On average in the region it is around 70%, with big differences between cars and motorcycles: the rate of coverage of the former may be 3 times higher than the latter.
Movernos Seguros report: preliminary findings

There is room to design car insurance products that incentivize safer behaviors and responsible driving while improving the coverage to victims.

The data gathered by insurance companies can be extremely useful to design and implement efficient road safety policies and there are very successful experiences of data sharing (Colombia).

In general, low coverage of victims and big uncertainties about potential compensation amounts to be received.

Some additional—qualitative—findings
The report classifies all countries of the region in 3 clusters based on their situation and the insurance status (considering both quantitative and qualitative factors):

**Group 1**
countries without compulsory vehicle insurance

**Group 2**
countries with compulsory vehicle insurance covering personal damages, incapacity or death, solely

**Group 3**
countries with compulsory vehicle insurance covering personal and material damages
### Table 3 Distribution of countries according to grouping criteria

<table>
<thead>
<tr>
<th>Grupo 1</th>
<th>Grupo 2</th>
<th>Grupo 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>Argentina</td>
<td>Barbados</td>
</tr>
<tr>
<td>Guatemala</td>
<td>Bahamas</td>
<td>Belice</td>
</tr>
<tr>
<td>Honduras</td>
<td>Bolivia</td>
<td>Guyana</td>
</tr>
<tr>
<td>El Salvador</td>
<td>Brasil</td>
<td>Haití</td>
</tr>
<tr>
<td>México</td>
<td>Chile</td>
<td>Jamaica</td>
</tr>
<tr>
<td>Paraguay</td>
<td>Colombia</td>
<td>Nicaragua</td>
</tr>
<tr>
<td></td>
<td>Costa Rica</td>
<td>Panamá</td>
</tr>
<tr>
<td></td>
<td>Perú</td>
<td>República Dominicana</td>
</tr>
<tr>
<td></td>
<td>Uruguay</td>
<td>Surinam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trinidad y Tobago</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Venezuela</td>
</tr>
</tbody>
</table>
Pilot Projects

Since the launch of this initiative, several countries have proposed themselves for the pilot programs.

Once some results and the context have been shared through the regional diagnosis, three countries (one per group) have been selected, according to the following criteria:

1. Political will/interest from government
2. Interest from the insurance industry
3. Potential impact on road safety and insurance market development
Multisectoral meetings have been taking place to outline a joint action plan and a stakeholders’ map for the country to adopt compulsory vehicle insurance.

We are expecting this plan to be presented next October 23-24th 2018 at the Capacity-Building Workshop on United Nations Road Safety Conventions organized jointly with the FIA and UNECE.

Meanwhile a revision of a draft law and dialogs with local legislators are taking place.
Pilot Projects: Dominican Republic (Group 3)

• The country has recently reformed their national legislation and have centralized in one institution their road safety, mobility and transportation authority, the National Institution of Road Transit and Transport (INTRANT for its acronym in Spanish).
• The IDB has been supporting this transition and the strengthening of the new institution and its legislation.

• The National government has been interested in including the implementation of Movernos Seguros pilot as part of this transformation.
• Multisectoral meetings have already been taking place in Dominican Republic in which the initial steps of the pilot action plan have been discussed.

• Following those meetings and the current needs, a firm of lawyers and legislators have been hired to carry on a legislative review and the design of a strategy for road traffic victim’s attention through a comprehensive vehicle insurance system and its efficient enforcement.
• By late-November 2018 we should have available specific recommendations and a tailored strategy to discuss amongst the stakeholders involved.
Pilot Projects: Bolivia (Group 2)

- The national government has constantly shared their interest and commitment to be a pilot country.

- Conversations are taking place to organize the multisectoral meeting to start drafting the stakeholder mapping and the action plan for 2019.
In parallel to these pilot projects, a working group has been established with participation of IDB/FIA HLP and the insurance industry (FIDES).

- Potential topics of collaboration include:
  1. Follow up of pilot projects (and potential extension to other countries)
  2. Structured dialogue with insurance market regulators
  3. Joint campaigns (road safety, insurance)
  4. Sharing of data
Many thanks!
Panel 2 – The insurance perspective

- Miquel Nadal, FIA High Level Panel
- Karl Gray, Zurich
- Ed Rochfort, Carrot Insurance
- Andrew Bradley, Nestle

Facilitator: Nick List, Zurich
What next for Insurance for Safer Roads?

Dave Cliff
CEO, Global Road Safety Partnership

Andrew Bradley
Nestle, and Chair, Global Road Safety Partnership
1230-1330: Lunch

1330-1530: Field tour of the Thatcham facility
Insurance for safer roads

October 10th 2018, Berkshire, UK

#RoadSafety