Insurance: Leading Through Disruption

SEAN KEVELIGHAN, CHIEF EXECUTIVE OFFICER
Improving public understanding of insurance... 

...what it does and how it works
Disruption is Everywhere
Disruption is Everywhere

Catastrophes – Increases in frequency and severity

<table>
<thead>
<tr>
<th>Natural Catastrophes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water</strong></td>
</tr>
<tr>
<td>2016 Flood Loss 6x Greater</td>
</tr>
<tr>
<td><strong>Wind</strong></td>
</tr>
<tr>
<td>8 of 10 costliest since 2004</td>
</tr>
<tr>
<td>367 Tornados Q1/17</td>
</tr>
<tr>
<td><strong>Fire</strong></td>
</tr>
<tr>
<td>2015: Record Year</td>
</tr>
<tr>
<td><strong>Climate Change</strong></td>
</tr>
</tbody>
</table>
Disruption is Everywhere

Catastrophes – Increases in frequency and severity

### Man-Made Catastrophes

<table>
<thead>
<tr>
<th>Autos</th>
<th>Cyber</th>
<th>&quot;Induced&quot; Earthquakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>More cars on road</td>
<td>$445 million/year</td>
<td>~950 3.0+</td>
</tr>
<tr>
<td>Distracted driving</td>
<td></td>
<td>60% in OK</td>
</tr>
</tbody>
</table>
Technology / Digitalization

- Big Data
- Sharing Economy
- The Internet of Things
Global Growth...
*Since 2008 we've had the longest period of relative trade stagnation since World War II...

US Growth...
GDP 1.6%
Investment Growth

...Monetary vs. Fiscal Policy

- **Monetary**: Low interest rates mean insurers are struggling to meet interest rate guarantees for life insurance and annuities must diversify their investment portfolios
- **Fiscal**: Supply-side debate heating up, i.e., tax reform
* Mainland purchases of insurance and related investment policies in the nine months ended September 2016 surged to a record high.
Geopolitics – US
P/C Insurance Industry ROE by Presidential Party Affiliation

1950-2016*

*2016 data is through Q3.
Source: Insurance Information Institute
But State Politics Drives Insurance

And Every State is Different

Source: R Street Insurance Regulation Report Card, December 2016
State of Insurance

Top Issues
- Autonomous Vehicles
- P2P insurance
- Cybersecurity
- Sharing Economy
- Workers Comp
- Regulation
- Politics
- Overcapitalization
  (Reinsurance)

Catastrophe Costs
P/C Payouts / Property Losses

- 2015: $15.4B
- 2016: $21.6B

U.S. Insured Cat Losses

- 2016 Loss Up Modestly Compared
  With 10-Year Average
  $19.1B

Consolidation/M&A
Insurance-related Deals
Involving U.S. Firms

- 2015: 564
- 2016: 500

- 2015 Value: $101B
- 2016 Value: $20B

Top Issues

Autonomous Vehicles
P2P insurance
Cybersecurity
Sharing Economy
Workers Comp
Regulation
Politics
Overcapitalization
(Reinsurance)

亮点

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  564
- 2016 Deals Involving U.S. Firms:
  500

- 2015 Value: $101B
- 2016 Value: $20B

- 25 pending or completed
  M&As involving U.S.
  insurance companies

PCS; Conning Research; S&P Financial.
The Economy Drives P/C Insurance Industry Premiums

Direct Premium Growth (All P/C Lines) vs. Nominal GDP

Direct written premiums track nominal GDP—
not quarter by quarter but overall fairly well.

Sources: S&P Global Market Intelligence; U.S. Commerce Dept., Bureau of Economic Analysis; Insurance Information Institute.
Commercial lines is prone to much more cyclical volatility than personal lines.

Note: Data include state funds beginning in 1998.
Sources: A.M. Best; Insurance Information Institute.
P/C Insurance Industry Combined Ratio, 2000-2017*

Including M&FG, 2008=105.1, 2009=100.7, 2010=102.4, 2011=108.1; 2012=103.2; 2013=96.1; 2014=97.0.

Sources: A.M. Best; ISO, a Verisk Analytics company; I.I.I.
P/C Insurer Portfolio Yields, 2003-2016

Even as prevailing rates rise in the next few years, portfolio yields are unlikely to rise quickly, since low yields of recent years are “baked in” to future returns.

Sources: NAIC data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Insurer gains from investments vary from year to year (they plunged in 2008-09) but in the last decade, excluding the effect of the Great Recession, ranged between $55 billion and $65 billion each year. In contrast, net underwriting gains have not exceeded $21 billion in any year and were actual losses in five of the 10 years.

Sources: NAIC data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Natural Catastrophe Losses Totaed $175 Billion, Up From $103 Billion in 2015

World Natural Catastrophes, 2016

The Frequency of Extreme Weather Events Is Rising

Number of World Natural Catastrophes, 1980-2016

(Number of relevant events by peril)

CAT Claims as a Percent of Total Claims*, First Quarter, 2011-2017

*Net of reinsurance and including Loss Adjustment Expenses
Sources: ISO PCS; Insurance Information Institute calculations.

CAT claims are normally a small part of total claims in the first quarter, but that wasn’t true in 2017. Moreover, although it’s a small sample, the trend seems to be rising.
Induced Earthquakes

Oklahoma Earthquakes Magnitude 3.0 and Greater

- Includes 30 quakes M4.0-4.7
- Includes 15 quakes M4.0-4.4
- Includes 20 quakes M4.0-5.1; 1 quake M5.8
- Includes 3 quakes M4.0-4.8; 1 quake M5.6
- ~1.6/year

Earthquake insurance take-up rates increased by over 300 percent from 2006 to 2015 in Oklahoma.

Cyber Attacks – No. 2 Global Risk

- Bus. interrupt., supply chain risk: 43%
- Cyber incidents: 31%
- Natural catastrophes: 28%
- Market developments: 26%
- Changes in legislation and regulation: 19%
- Macroeconomic developments: 15%
- Fire, explosion: 15%
- Loss of reputation or brand value: 14%
- New technologies: 12%
- Theft, fraud, corruption: 12%

Road Safety

Why rates go up

- Better Economy = More Drivers = More Accidents
- Distracted driving
- Expensive auto parts
- Legalized marijuana
- Speed Still Kills
- Driving While High

Source: Insurance Information Institute research.
### Insurance Disruption
Technology / Digitalization

<table>
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<tr>
<th>Fundamental Changes</th>
<th>Opportunities</th>
<th>Challenges</th>
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</thead>
<tbody>
<tr>
<td>Future of Auto</td>
<td>Automation / Efficiencies</td>
<td>Consumer Trust – Demonstrate the Societal Value</td>
</tr>
<tr>
<td>Future of Reduced Risk Pools</td>
<td>New Product Lines (Cyber)</td>
<td>Big Data vs. Individual Privacy</td>
</tr>
<tr>
<td></td>
<td>Emerging Technologies</td>
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</tbody>
</table>

#### New Market Entrants “Uber of Insurance”?
- Lemonade
  - Offered in CA, IL, NJ, NY

#### Regulatory Opportunities/Threats
- Barrier to Entry
- US vs. Other Less Regulated Regions
- Trust Pull-back – the Sandbox Approach
InsurTech Disruption: Threat or Opportunity?

Automation efficiencies can have powerful impact on industry

Focus of InsurTech in the insurance value chain¹, %

- Disrupting the value chain: 9%
- Disintermediating incumbents from customers: 30%
- Enabling the value chain: 61%

Future profits as a % of today’s profits

- Short-term gain:
  - 100: Improvement in growth, and loss- and expense ratio²
  - 120-200: Impact from improved vehicle safety³,⁴
  - 220-300: Shift in liability to commercial product lines⁵

- Long-term decline:
  - -20 to -60: Improved loss-and-expense ratio⁶
  - -60 to -100: Shift in liability to commercial product lines⁵
  - 15-55: Impact from improved vehicle safety³,⁴
  - 155-195: Improvement in growth, and loss- and expense ratio²

¹Insurtechs are insurance businesses, usually startups, that use technologically innovative apps, processes, or business models; 2016 data based on some 500 commercially well-known cases. ²Assumes a 3 to 5 percentage point improvement in loss ratio, a 2 to 4 percentage point improvement in operating expenses, and a 6 to 8 percentage point improvement in direct sales conversions. ³Includes growth in investment income as well premiums. Investment income modeled as a flat percentage of premium in each year. ⁴Includes impact of semi- and fully autonomous vehicles. ⁵Assumes a 25 percent reduction in premiums as a result of telematics and sensors and a 50 percent risk transfer to commercial product liability. Source: Panorama by McKinsey; Digital and Auto Insurers Value at Stake Analysis, McKinsey, 2016.
### InsurTech Startups Have Broad Range…BUT…

<table>
<thead>
<tr>
<th>Risk</th>
<th>Health</th>
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<tbody>
<tr>
<td><strong>Insurance Marketplace</strong></td>
<td></td>
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<tr>
<td>CoverHound</td>
<td>GetInsured</td>
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<tr>
<td>PolicyBazaar</td>
<td>HealthSherpa</td>
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<tr>
<td>Turtlemint</td>
<td>PolicyGenius</td>
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<tr>
<td><strong>Digital Brokers</strong></td>
<td></td>
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<tr>
<td>Insureon</td>
<td>Embroker</td>
</tr>
<tr>
<td>EMBROKER</td>
<td>Coverwallet</td>
</tr>
<tr>
<td>Founders Shield</td>
<td></td>
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<tr>
<td><strong>Peer to Peer</strong></td>
<td><strong>Health Navigators</strong></td>
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<tr>
<td>Friendsurance</td>
<td>Welltok</td>
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<tr>
<td>Lemonade</td>
<td>Teladoc</td>
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<tr>
<td>Guevara</td>
<td>Accolade</td>
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<tr>
<td>YYY PeerCover</td>
<td></td>
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<tr>
<td><strong>Micro-duration Coverage</strong></td>
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<tr>
<td>Trov</td>
<td>Omada</td>
</tr>
<tr>
<td>Slice</td>
<td>Truven Health Analytics</td>
</tr>
<tr>
<td><strong>Telematics</strong></td>
<td>Kyron</td>
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<tr>
<td>TrueMotion</td>
<td>Castlight</td>
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<tr>
<td>Metromile</td>
<td>Grand Rounds</td>
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<tr>
<td>Zendrive</td>
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Source: Aon.
### With Broad Incumbent Support

<table>
<thead>
<tr>
<th>Company</th>
<th>Funding</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metromile</td>
<td>$205M</td>
<td>Aon</td>
</tr>
<tr>
<td>CoverHound</td>
<td>$57M</td>
<td>Aon</td>
</tr>
<tr>
<td>ONE, Inc.</td>
<td>$37M</td>
<td>Aon</td>
</tr>
<tr>
<td>policygenius</td>
<td>$21M</td>
<td>Aon</td>
</tr>
<tr>
<td>Slice</td>
<td>$4M</td>
<td>Aon</td>
</tr>
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</table>

Note: Total funding.  
Source: Aon.
Successful Digital Transformation → Holistic Approach
Insurance & Economic Leadership

**Sustainable Business Model**
- 2010
- Bank Failures: 157
- Insurance Impairments¹: 8
- Policyholder Surplus: $700.9B End 2016

**Strong Jobs Pool/Provider**
- 2.8M Employed
- Need to Fill 400K+ by 2022²

**Economic Growth Promoter/Facilitator**
- $507.7B 2.7% US GDP³
- Premium Taxes Paid⁴ $19.2B
- Bond Investment⁵ $489B
- Charity/Volunteerism⁶ ↑ 15%

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The Insurance Industry’s Contribution to GDP Now Nearly Equals Banks’

Sources: US Bureau of Economic Analysis; Insurance Information Institute.
Insurance Industry Snapshot: By the Numbers

2.8 million
People in the U.S. employed, in a wide variety of careers, from human resource administrators to public relations managers to financial analysts

$5.8 trillion
Assets under management at year-end 2016, including $1.5 trillion for the property/casualty sector and $3.7 trillion for the life sector

$508 billion
Contributed to the U.S. gross domestic product in 2016, roughly 2.7% of the whole

$40.0 billion
Federal and foreign income taxes paid in 2016, plus U.S. premium taxes paid

Source: A Firm Foundation, Insurance Information Institute.
The Yearly Cash Flow to Rebuild Lives and Property is Substantial

Insurers annually pay over a trillion dollars in claims to rebuild lives, property, and businesses.

In 2016 alone, the industry paid

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>P/C incurred claims (L + LAE)</td>
<td>$386.4b</td>
</tr>
<tr>
<td>Life/Annuity benefits</td>
<td>$554.7b</td>
</tr>
<tr>
<td>Health Insurance benefits</td>
<td>$560.9b</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1.502 trillion</strong></td>
</tr>
</tbody>
</table>

This is equivalent to $125 billion per month.
Insurers Are Major Investors, 2015

Categories of investments ($billions)

- Total invested assets: $5.8 trillion

Categories of bonds ($billions)

- 22% of corporate bonds outstanding
- 15% of municipal bonds outstanding

- Corporates
- Munis
- Mortgage & Asset-Backed
- US Gov't
- Other

Sources: NAIC (the Center for Insurance Policy and Research, June 6, 2016) via SNL Financial; Insurance Information Institute.
As Economies Grow Wealthier, Insurance Market Penetration (Premium as % of GDP) Also Grows

Some wealthy countries have penetration rates of 10% and higher

Source: A.M. Best.
I.I.I Proactive Campaigns Framework

Proactively Position the Insurance Industry as an Economic Imperative

Pillar: Financial & Community Resilience

Pillar: Talent Recruitment & Retention

Pillar: Innovation & Technology

Campaign 1: A Day in the Life of Risk

Campaign 2: Insurance Information Institute of Innovation

Actuary in Action | Conquering Life’s Obstacles | On-Air Actuary | Innovation Sessions | Insure-Tech Hackathon | Incubator
Summary

Disruption Causing Insurance Industry Inflection Point

Fundamentals Are Sound for Industry Leading Through Disruption

Opportunity/Risk: Define or Be Defined...