Group Exercise

Scenario Identification and Prioritization

Pooya Sarabandi
Vice President - Global Head of Data Analytics and Exposure Modeling
RMS, Inc.
STRUCTURE OF THIS GROUP EXERCISE

A. Demographics & interests
   - Characterizing the attendees here today

B. Scenarios for individual classes of insurance
   - Priorities and guidance on the need for scenarios for specific lines of business

C. Clash scenarios
   - Selecting candidate scenarios for managing multi-line risk

D. Scenario methodology
   - Choices in designing scenarios
A.

DEMOGRAPHICS AND INTERESTS
What line of business are you in?

A. Insurance company
B. Reinsurance company
C. Intermediary or risk advisor
D. Regulator or rating agency
E. Banking or other financial services
F. RMS
G. Praedicat
H. Cambridge team
I. Other

Q1
If you are involved in insurance…

The area of insurance I am most concerned with is:

A. Property
B. Casualty Liability
C. Energy
D. Marine
E. Aviation
F. Clash or enterprise risk
What is your main geographical area of interest for applying scenarios? Rank your top 3

A. US market

B. Existing major insurance markets

C. Emerging and high growth insurance markets to manage future exposure

D. Specific territories where my company is different to the industry average

- US market: 27%
- Existing major insurance markets: 35%
- Emerging and high growth insurance markets: 31%
- Specific territories: 7%
What is your main area of interest in applying scenarios? Rank your top 3

A. Regulatory compliance or financial strength rating for risk capital
   21%

B. Internal stress testing and exploration of poorly-understood risks
   33%

C. Pricing and catastrophe loading
   28%

D. Design of new insurance products
   19%
B. SCENARIOS FOR INDIVIDUAL CLASSES OF INSURANCE
Which classes of insurance are scenarios most needed for? Rank your top 3, in terms of their importance to your organization:

A. **Casualty Liability** – scenarios for systemic mass torts across sectors of economy
   - 33%
B. **Marine** – scenarios for severe losses to hull, cargo, and/or marine liability lines
   - 12%
C. **Energy** – scenarios for severe loss to offshore and/or onshore insured exposure
   - 16%
D. **Aviation** – scenarios of large scale losses in airline fleets or aviation facilities
   - 2%
E. **War & Political Risk** – severe loss scenarios to political risk exposures
   - 18%
F. **Specialty** – severe loss scenarios to exposures in specialty lines
   - 16%
G. **Credit and Surety** – scenarios for systemic defaults of credit and surety contracts
   - 12%
H. **Agriculture** – scenarios for large scale losses to agriculture insurance exposures
   - 3%
What types of scenarios are most needed for casualty?
Rank your top 3

A. Latent bodily injury product liability resulting in large-scale clash - 25%
B. Latent property damage product liability resulting in large-scale clash - 18%
C. Multi-defendant D&O claims - 10%
D. US-style property damage class actions are allowed in a European jurisdiction - 8%
E. Latent environmental liability resulting in large-scale clash - 17%
F. Short-tail energy-related explosions or spills - 9%
G. Courts disallow pollution exclusion - 7%
H. Courts disallow anti-stacking provisions of integrated occurrence - 6%
What types of casualty-related multi-line clash events are most needed? Rank top your top 3

A. Product-related occupational disease results in multi-defendant liability-workers’ comp clash 23%

B. Large-scale consumer product liability results in multi-defendant product liability and D&O claims. 21%

C. Change in liability rules, such as easier class actions, causes increased litigation in multiple liability lines 18%

D. Property and casualty clash due to industrial accidents after a natural disaster 12%

E. Property and casualty clash from energy activities causing earthquakes 11%

F. Property and casualty clash, including liability and workers’ comp, from a large-scale terror event 14%
C.

CLASH SCENARIOS
Clash scenarios for 5 classes: property, casualty liability, energy, marine, and aviation

Prioritize the following for clash scenarios. Rank your top 3

A. Hurricane and storm surge in Gulf of Mexico, US - 26%
B. European wind storm - 13%
C. Typhoon and storm surge SE Asia - 8%
D. Japan earthquake and tsunami - 10%
E. Multiple plane crash at hub airport - 22%
F. Fire and explosion at major oil refinery - 22%
Clash scenarios for 5 + 3 classes: adding War & Political Risk; Specialty; Credit & Surety

Prioritize the following for clash scenarios. Rank your top 3

A. Geopolitical Conflict in Middle East  
   - 14%

B. Geopolitical Conflict China-Japan  
   - 12%

C. Multi-Regional Power Failure (Solar Storm)  
   - 21%

D. Global Drought & Extreme Weather Pattern  
   - 26%

E. Financial Credit Crisis: Property Bubble  
   - 27%
Scenarios for multi-line accumulations at individual high value locations

Prioritize the following for clash scenarios, Rank your top 3

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The largest maritime ports in each country</td>
<td></td>
</tr>
<tr>
<td>B. The largest airport facilities in each country</td>
<td></td>
</tr>
<tr>
<td>C. The largest rail terminus complexes in each country</td>
<td></td>
</tr>
<tr>
<td>D. The largest commercial property facilities in each country</td>
<td></td>
</tr>
<tr>
<td>E. The largest retail malls in each country</td>
<td></td>
</tr>
<tr>
<td>F. The largest industrial facilities in each country</td>
<td></td>
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<tr>
<td>G. The largest manufacturing clusters in each country</td>
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<tr>
<td>H. The largest business parks in each country</td>
<td></td>
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<tr>
<td>I. The largest construction sites/builders risks in each country</td>
<td></td>
</tr>
</tbody>
</table>

Q10
Scenarios for multi-line accumulations at individual high value locations

Which types of events should be modelled for high value locations?
Rank your top 3

A. Major fire

B. Terrorist attack

C. Structural failure and collapse
   (design/construction error)

D. Accidental explosion

E. Natural catastrophe perils only

F. Aircraft crash onto facility

G. Toxic chemical escape or pollution incident

H. Cyber-physical attack to cause damage

Q11
D. SCENARIO METHODOLOGY
If scenarios could be assigned return periods, which return periods would be of most interest?

Rank your top 3.

A. 10 year return period  11%
B. 50 year return period  17%
C. 100 year return period  27%
D. 200 year return period  27%
E. 500 year return period  12%
F. 1,000 year return period  6%
G. 5,000+ year return period  0%
Which metrics of severity are the most useful benchmarks for a scenario? Rank your top 3.

A. Loss as proportion of total insured limit or exposure in affected market
   - 31%

B. Insurance industry loss relative to annual gross written premium
   - 25%

C. Loss relative to average annual loss ratio
   - 27%

D. Loss as a standard deviation of historical volatility of claims history
   - 17%
Which outputs are most useful for a specific scenario with a given narrative and variables?
Rank your top 3.

A. Best estimate, given occurrence
B. Worst case, using pessimistic assumptions
C. A high percentile in the distribution of all possible outcomes
D. Several variants at different percentiles of the outcome distribution
E. A full event set of thousands of variations of the scenario

Q14
THANK YOU FOR YOUR PARTICIPATION