Casualty Risk, Models, and Scenario Libraries
Liability and the Vexing Problem of Emerging Risk

Coverage: All Perils with exclusions

What’s Next?
Liability and the Vexing Problem of Emerging Risk

Coverage: All Perils with exclusions

What’s Next?
The Human Scale Solution: The Emerging Risk Group

- Emerging Risk List
- The Underwriting Strategy
- The Casualty Realistic Disaster Scenario
The Human Scale Solution:  
The Emerging Risk Group

✓ Rise of Exclusions
✓ Lack of Alignment of Risk Management and Underwriting
✓ Shrinking Casualty Insurance Market
The Machine Scale Solution: The Latency Catastrophe Model

- Named Peril latency cat EP curve
  - Exceedance Probability Curve - Bisphenol A (BPA)
  - Bermuda insurer latency cat EP curve
  - Paint company latency cat EP curve
  - Adhesives industry latency cat EP curve
The Machine Scale Solution: The Latency Catastrophe Model

- Forward-looking modeling using peer-reviewed science
- Portfolio steering and aggregation management
- Epidemiology-based latency estimates to inform reserving
- Named-peril market solutions

Named Peril latency cat EP curve

EXCEEDANCE PROBABILITY CURVE - Bisphenol A (BPA)

- Black box?
- Unmodeled perils?
- Model risk?
Scenario-Enhanced Modeling provides the ultimate solution

- Model foundations are needed to drive market solutions
- Internal consistency driven by model foundation reduces risk aversion and inform
- Scenario-based assumption stressing facilitates robust risk management
- Scenarios allow better communication of model results to management
- Scenarios with loss allocation to companies can be used in underwriting

Scenario-enhanced modeling is the use of scenario libraries built on top of models
Two Kinds of Model-based Scenarios: Realistic and Extreme

- Realistic scenarios are consistent with event set data
  - Designed for regulatory reporting, and results communication
  - Can be associated with probabilities to quantify realism

- Extreme scenarios realistically break a model assumption
  - Addresses model uncertainty, explores unmodeled parameters
  - Can be used to model legal change scenarios
**Praedicat’s scenario library: present and future**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
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<tbody>
<tr>
<td>1,3-Butadiene: Leukemia (Realistic)</td>
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<tr>
<td>2,3-Pentanedione: Bronchiolitis Obliterans (Extreme)</td>
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<tr>
<td>Aluminum: Neurodegenerative Disease (Extreme)</td>
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<tr>
<td>Aluminum: Pneumoconiosis (Realistic)</td>
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<tr>
<td>Atrazine: Birth Defects (Extreme)</td>
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<td>Atrazine: Infertility (Extreme)</td>
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<tr>
<td>Benzene: Acute Myeloid Leukemia (Realistic)</td>
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</tr>
<tr>
<td>Benzene: Multiple Myeloma and Non-Hodgkin Lymphoma (Realistic)</td>
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</tbody>
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- Currently have 50 scenarios in software
  - Focus on potential for latent bodily injury connected to product exposures
- Scenarios are the leading edge of our model development
  - Developing models to address property damage, latent and short-tail; exploring legal change

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PROPRIETARY. PREPARED FOR CAMBRIDGE.
Underwriting with scenarios

- Scenarios by company can be built into underwriting platforms
- Facilitates alignment of underwriting and risk management
- Drives better communication of model results to clients
- Reduces underwriter biases and blind spots

“It’s not about AI, it’s about IA – intelligence amplification”
-- Sid Dalal
Best Practices for Casualty Scenario Development and Application

- Models provide a strong foundation for scenario development
  - Encourage product innovation and sound underwriting
  - Can drive scenario development at scale for broader coverage
  - Facilitate internal consistency in risk assessment
- Scenario-enhanced modeling reduces model risk and improves communication
- Shared scenario platforms for risk management and underwriting drives alignment