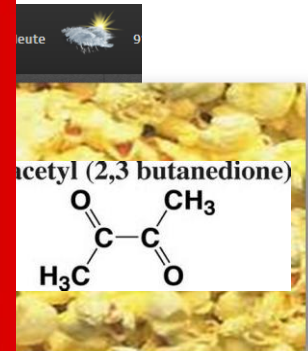


Modelling Liability Accumulation Using Scenarios

Cambridge Scenario Workshop, 6. September 2017, Salomon Billeter, Swiss Re

Casualty and multiline business subject to diverse and changing drivers of relevant risk accumulation: scenarios to systematically capture, quantify, and standardize the obvious and the inconceivable alike



Frequent Questions > Asbestos > Top 20 Asbestos Questions >

Since asbestos was banned, do I need to be worried about products on the market today containing asbestos?

On July 12, 1989, the EPA issued a final rule under Section 6 of the Toxic Substances Control Act (TSCA) most asbestos-containing products in the United States. In 1991, the rule was vacated and remanded to the Circuit Court of Appeals. As a result, most of the original ban on the manufacture, importation, processing, distribution in commerce for most of the asbestos-containing product categories originally covered in rule was overturned. Only the bans on corrugated paper, rollboard, commercial paper, specialty paper, felt and any new uses of asbestos remained banned under the 1989 rule. Although most asbestos can products can still legally be manufactured, imported, processed and distributed in the U.S., according to Geological Survey, the production and use of asbestos has declined significantly.

Rating: 11 Votes

Was this answer helpful?

Source:
<http://toxics.supportportal.com/link/portal/23002/23019/Article/33662/Since-asbestos-was-banned-do-i-need-to-be-worried-about-products-on-the-market-today-containing-asbestos>



Cover of Mar. 24, 1986 issue
 Property of Time Inc.

Source:
<https://www.3.xisting.aspx?UF&=0&=ba>
 Purchase.aspx?ref



Liability cat *will meet* Nat cat



With forward-looking modelling we will:

- Quantify risk accumulation of liability books “bottom-up”
- Provide a portfolio steering tool for Casualty like in Nat cat
- Contribute to the creation of a sustainable Casualty cat market

Casualty and Multiline Accumulation The Challenges



Casualty Accumulation Risk

Diversity of Concerns



Classic Clash

A variety of claims that follow a sudden event or occurrence, such as general liability, employer's liability and professional indemnity claims arising from a building collapse.

Deepwater Horizon
Buncefield
Piper Alpha



Serial Aggregation

A defect in the design or manufacture of a product that triggers multiple losses which are all linked to the initial defect.

Thalidomide
PIP breast implants



Business Disaster

Multiple losses occurring as a result of a single failure or the disclosure of incorrect/misleading advice/information.

Enron
Volkswagen



Systemic Failure

A repeatable process/procedure or industry/business practice resulting in a series of losses.

PPI mis-selling
Pensions mis-selling
Abuse

Casualty Accumulation – a Threat for (Re-)Insurance

Diversity of Impacts



Threat	Impact on
Large reserve increase	Capital, Rating, Profit
Continuous reserve increases	Rating, Capital, Long-term earnings, Reputation, Profit
Large immediate payment	Liquidity
Headline loss, loss after which no hard market follows	Rating, Reputation

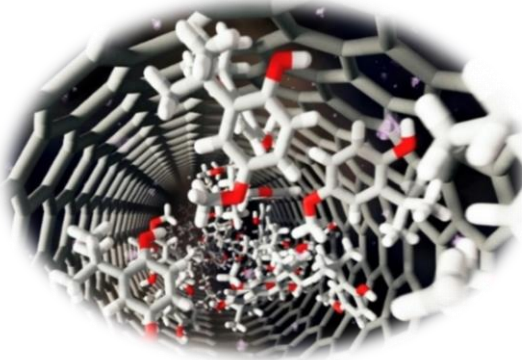
Latent Liability Catastrophe Risk

... are we really covering everything ...

Pharma



Nanomaterials



**Food
Overconsumption**



**Building
Materials**



**Endocrine
Disruptors**



**Professional
Lines**

Latent Liability Catastrophe Risk

... are we really covering everything ...





Event: UK votes to leave the European Union

The “Brexit” has potentially an impact in the following areas

Regulatory environment

Legal environment

Redistribution of
activities

Yield curves

Exchange rates

Consumer price index

Medical costs

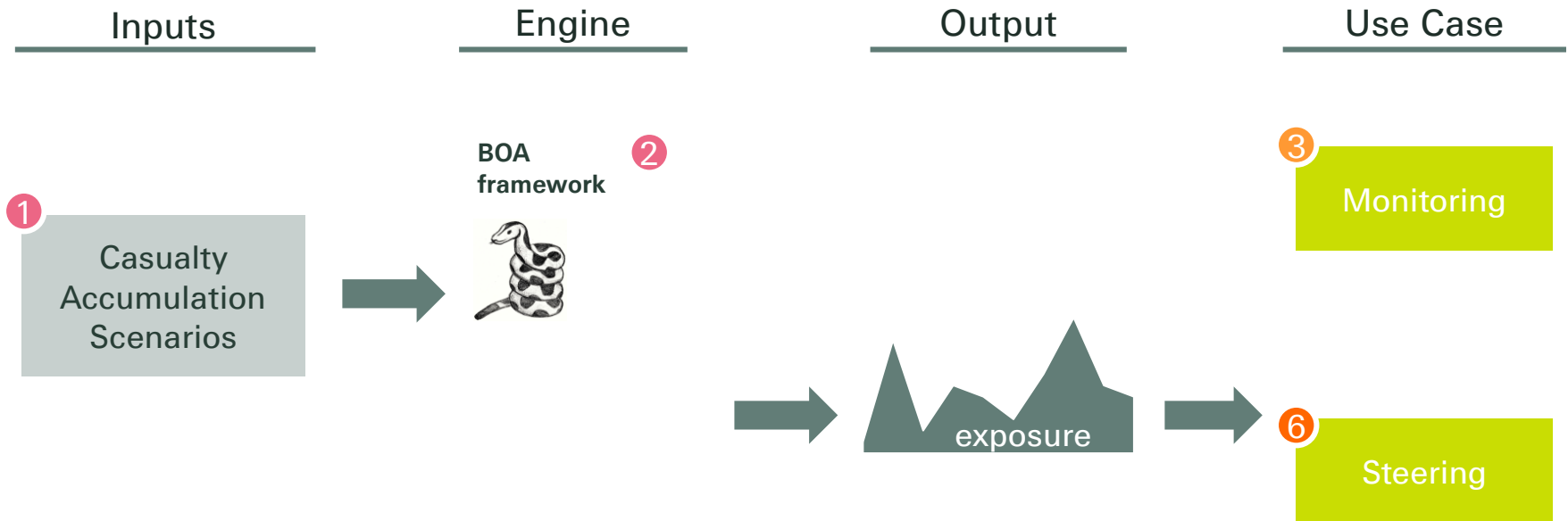
Wages

etc.

The impact for most of the changes can be modelled using LRD

A Framework to Estimate Casualty Accumulation

A good starting point and reference for comparison



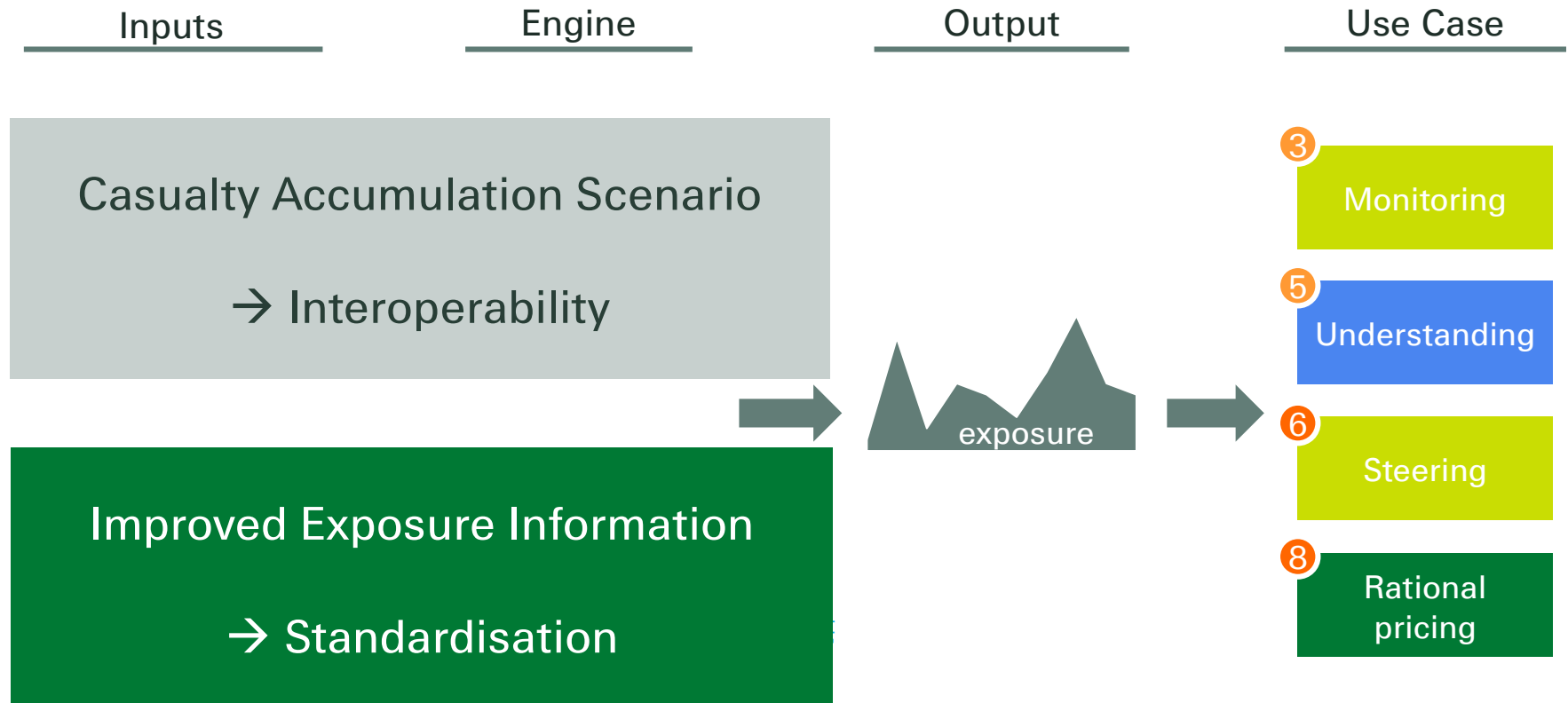
Managing Casualty Accumulation with Forward-looking Modelling

Using Scenarios



A Refined Framework to Calculate Casualty Accumulation

From an *estimation* to an exposure-based *calculation* of Accumulation



Why do we Need Forward-Looking Models?

Risk of Change and Lack of Data



Risk of Change

- ❑ **Anticipate impact of changes** adequately and consistently
- ❑ Enter **new markets** and **segments**
- ❑ Understand sensitivity of losses to key factors to better **manage our portfolios**

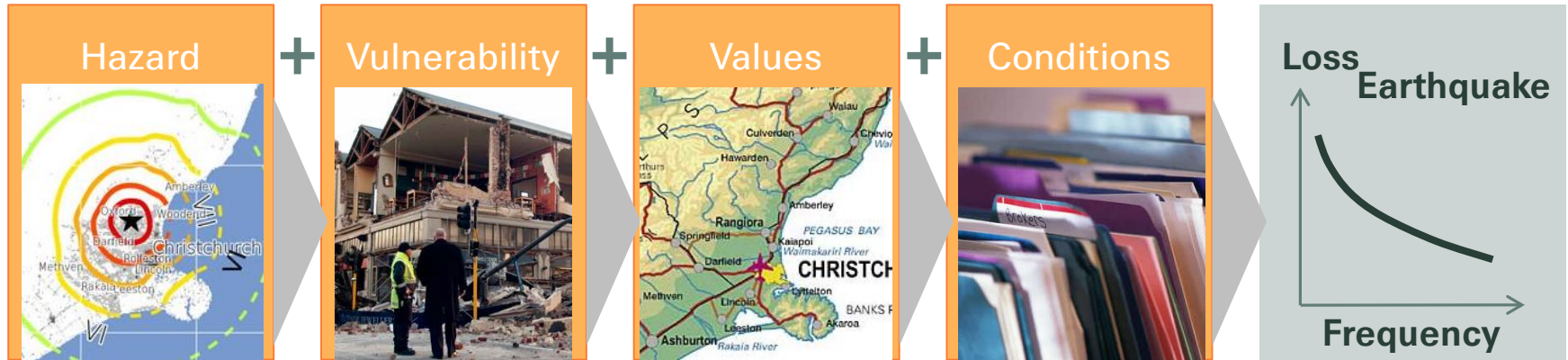
Liability accumulation

- ❑ **Identify liability catastrophes (L-cat)** early on in order to **understand impact** on market, clients' and own portfolios, to **manage** risk accumulation and to **steer** risk appetite

Modelling Loss Events

Casualty vs. Nat Cat

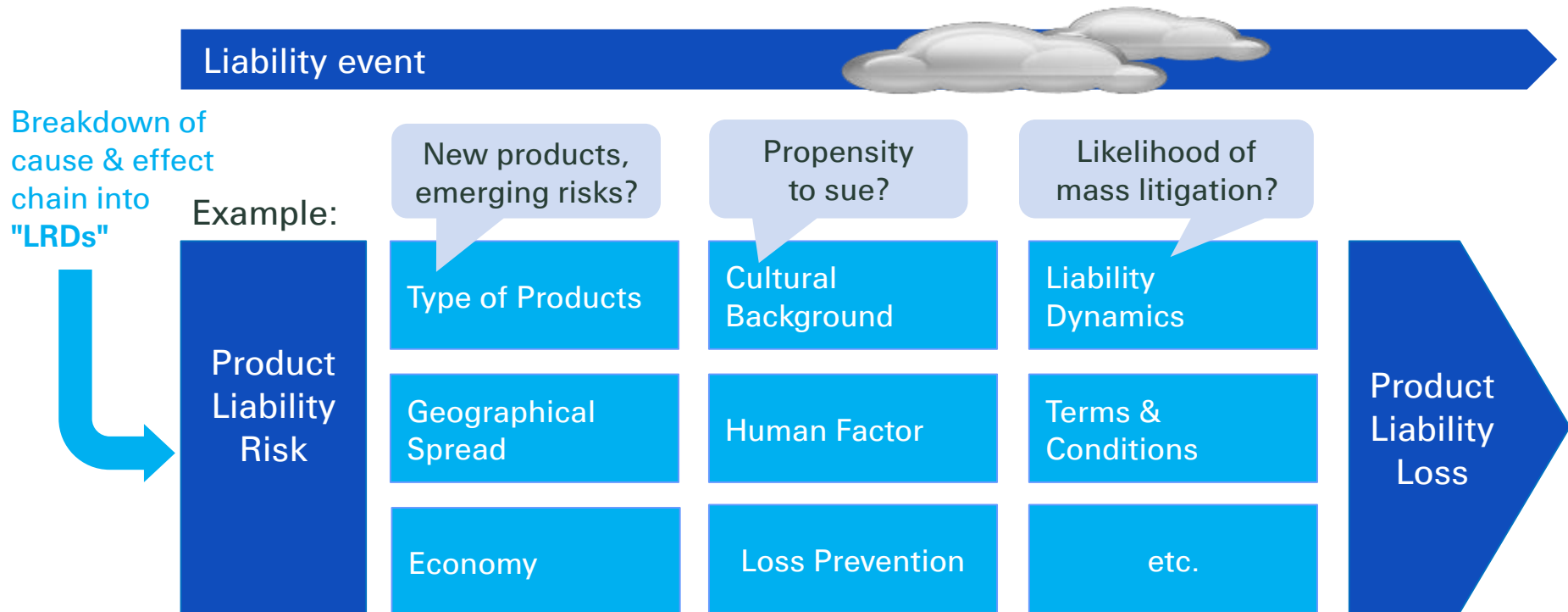
Cat event = **laws of physics**



Liability event = **rules of life**



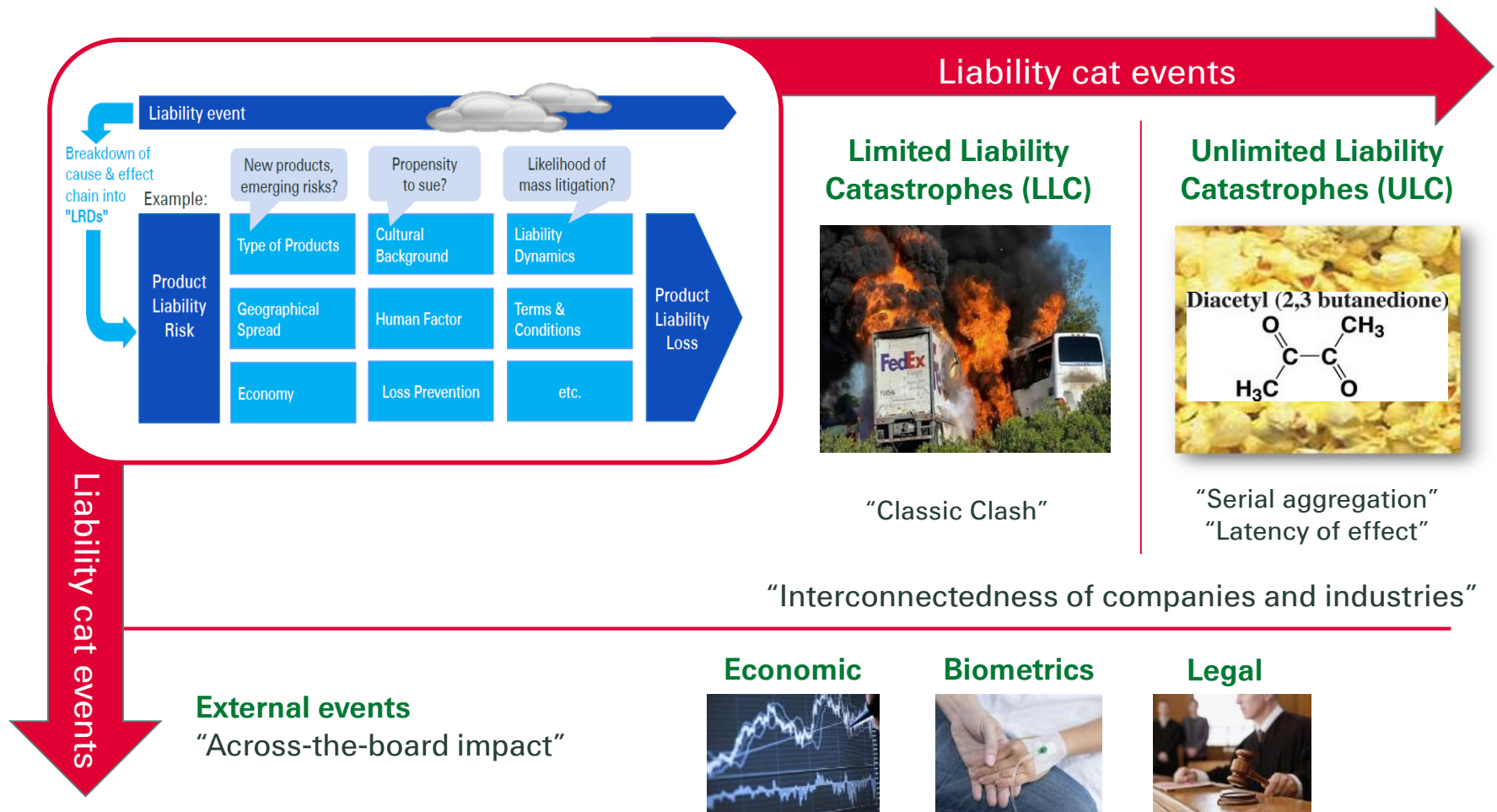
Quantifying Tomorrow's Loss Potential by *Assessing Changes in Today's Risk Landscape*



Swiss Re Liability Risk Drivers™ (LRD)

US Patent Granted 2014

Liability Risk Drivers for *Casualty Idiosyncratic Risk and Catastrophe Modelling*



LRD – a common framework based on scenarios and risk factors

Expected Loss through contribution by Loss Scenarios



LRD is used by Swiss Re underwriting to cost Liability business

Swiss Re LRD L-Cat-Based Capabilities for *Swiss Re and its Strategic Clients*

Examples

L-Cat scenarios



Portfolio analysis



Scenario deep-dive



Strategy & benchmarking



Risk mitigation



L-Cat scenario landscape visualisation

- Share the scenario landscape in LRD L-Cat
- Enhance understanding of scenarios impacting the balance sheet
- Check out prototype: <http://staging-lcat.appcloud-dev.swissre.com/#>
- Work-in-progress: scenario description and historic loss examples



Developing Scenarios for Casualty and Multiline Risk

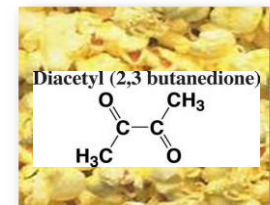


... never just say "scenario" ...

Types of Scenario

Scenarios in Swiss Re Liability Risk Drivers™

- Categorizing and estimating risk accumulation
 - Accumulation scenarios
- Modelling of loss processes → events
 - Loss scenarios
 - Unknown small loss
 - Known loss
 - Unknown large loss
 - Catastrophic loss scenarios
 - Limited catastrophe
 - Unlimited catastrophe
- Modelling of processes external to the loss → trends, sudden changes
 - Economic scenarios
 - Biometric scenarios
 - Legal, judicial, societal scenarios



Scenario Development

Practical Considerations

- How to proceed?
- What is the stage?
- Why is the scenario there?
- Bottom-up or top-down?
- Which granularity is right?
- Are available exposure data not specific and comprehensive enough?
- Is it only about “quantification”?
- Imagination, experts, or data?

Conclusions

- **Diversity of drivers of risk**
→ *one size does not fit all (one name neither)*
- **Purposes of scenarios**
→ *aggregate / decompose risk landscape*
- **Not one set for all needs**
→ *definition, interoperability, data standard*

Appendix



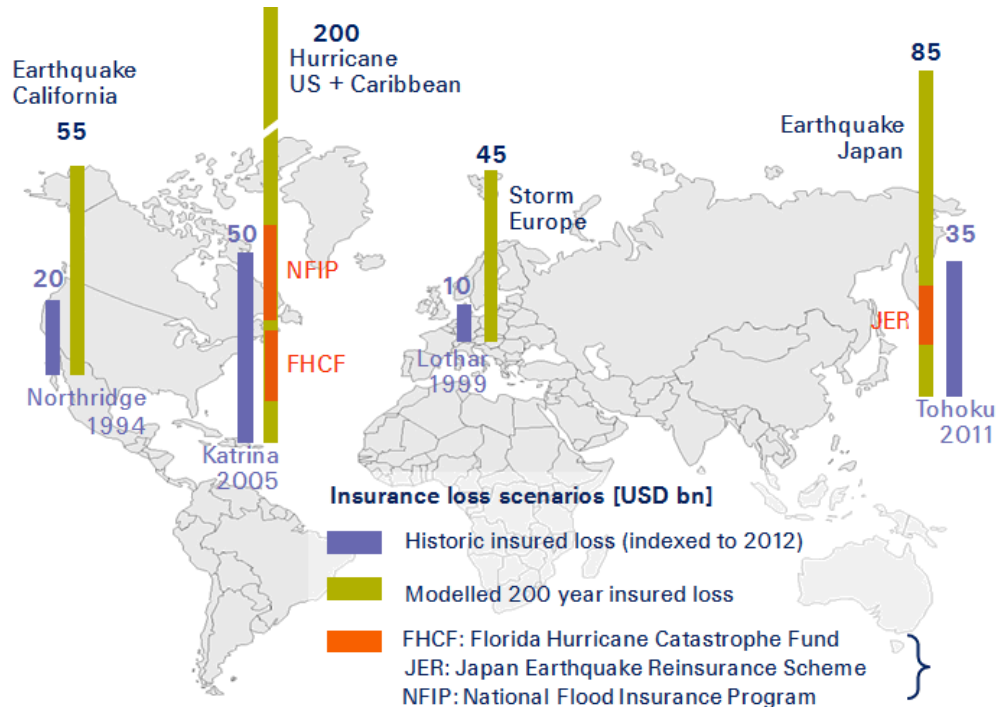
Casualty risk versus Nat Cat



Asbestos

Total insurance industry loss getting close to 100 bn USD

Casualty



Nat Cat