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# ISCM Casualty Cat Modeling 101

# Presenters



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# The current state of play



## Question 1

When we think about casualty cat events many try to make comparisons to other types of cat events such as NATCAT, what would you say are the main similarities and what are the main differences?



## Question 2

We've seen casualty cat events before, what are the limitations of using these as a template for modelling future losses as per traditional actuarial methods?



## Question 3

When it comes to developing out these seemingly novel capabilities, can you give us an idea of the roles, responsibilities and processes that you think an insurer needs to understand and undertake in order to start on a casualty cat modelling journey?



## Question 4

Thinking back on the clients you've supported over the years can you speak to the highest performers you've seen in this space, what they've done and how they were able to achieve it?



## Question 5

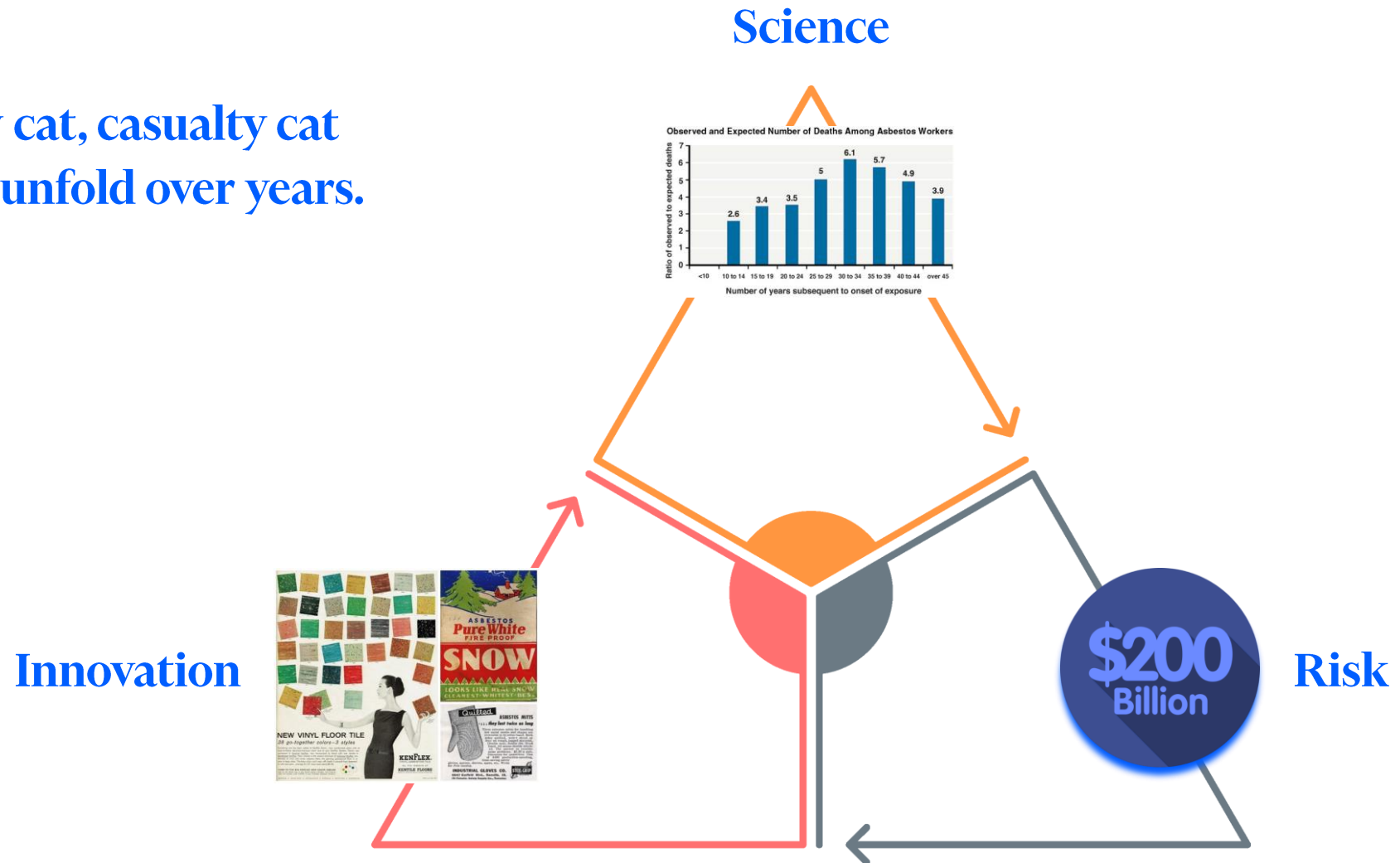
Where do you see the biggest opportunities for the global (re)insurance market from adopting a casualty cat model? And what are the biggest risks of not doing so?

# Key distinctions between property and casualty

Characteristics	Casualty	Property
Time dimension	Latent	Immediate
Underwriting	Art	Science
Modeling	Economics & human behavior	Physical phenomena
Coverage type	3 <sup>rd</sup> party	1 <sup>st</sup> party
Coverage certainty	Ambiguous	Generally well-defined
Exposure identifier	Company	Lat/long
Perils	Voluminous and growing	Few and finite
Loss data availability	Restricted (confidentiality)	Widely available

# Latency is the central problem in casualty cat

Unlike property cat, casualty cat events typically unfold over years.





# A note on the occurrence form

## The occurrence form results in cross-policy year aggregations of correlated risks

- General liability/Umbrella/ products liability is often written on the occurrence form that compensates policy holders for losses stemming from bodily injury or property damage that “occurred” during the policy period
- The occurrence of injury need not be reported during the policy year; the injury need only to occur during the policy period for the policy to respond, meaning that an occurrence policy written today could respond years in the future
- U.S. courts have interpreted an injury “occurrence” to span the years between initial exposure, disease inception, and symptom manifestation
- The result of this legal interpretation is that an insured that is sued by multiple plaintiffs for the same underlying cause of action (e.g., exposure to asbestos that causes cancer) could recover loss under multiple policy periods



# Traditional actuarial models struggle with emerging risk



## A forward-looking modeling approach is necessary

- Traditional pricing and reserving models rely on claims history data, but emerging risks will not be represented in those data; consequently, backward-looking models will not be able to forecast emerging risk aggregations
- To manage exposure to “the next asbestos,” casualty insurers need a system with the following components:
  - Early, granular identification of emerging risks, of which there are hundreds
  - Continuous monitoring of emerging risks as they develop in the science and in the courts
  - A mapping of emerging risks to the commercial activities of specific companies
  - A model of the loss companies will incur because of their exposure to emerging risk
  - A model of the insured loss that accrues within portfolios of casualty policies
- These components of an emerging risk system are all embedded in the Moody’s casualty cat solution

# The way forward

## How to solve the problem of latent emerging risk for casualty insurers

- Asbestos is the largest insurance cat ever, yet insurers were largely unaware of the unfolding catastrophe
  - At least \$100 billion in insured loss
  - Inadequate reserves led to reserve restatements, increased cost of capital, and unsustainable loss ratios
- There is greater awareness of emerging risk today, but it seems likely that casualty cat is still systematically under-priced and reserved
- Traditional actuarial methods cannot effectively account for correlated, latent risks that have no precedent in claims data
- Broader adoption of exposure-based casualty cat models that reflect the underlying process that leads to mass litigation events is needed





The background of the slide is a solid dark blue. Overlaid on this are several sets of thin, light blue wavy lines that create a sense of depth and movement, resembling a stylized landscape or a series of concentric ripples. In the top left corner, there is a large, bold, white letter 'M' with a small apostrophe to its upper right.

**M'**

# Audience Questions

# Thank You

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