



LIA TIME

by Bill Rigby

Earthquakes and hurricanes are hard to predict, but after many bruising and expensive experiences, the insurance industry has harnessed a wealth of data to establish the potential cost of a property catastrophe in almost any place on the globe and calculate how much risk any one carrier can take on.

For a casualty catastrophe, however, that is not the case. Lawsuits—whether from concussions, climate change or a dangerous chemical—are inherently much harder to predict and can creep up unseen. Yet they may end up as expensive as, or even more so, than the biggest natural disaster.

This is what some in the industry have come to call “the next asbestos,” referring to the long-running liability catastrophe that has drained \$85 billion out of the insurance industry over the past few decades, according to a 2015 *Best's Special Report*.

“People have been looking for the next asbestos ever since the last asbestos,” said Robert Hartwig,

president of the Insurance Information Institute. “It’s been difficult to predict the next casualty catastrophe.”

With no shortage of candidates—from cyber risk to police brutality—the guessing game has fueled growing concern among insurance company boards, regulators and rating agencies, which are now asking for more information on potential liability time bombs in insurance company portfolios.

The problem is, unlike in natural disaster forecasting, the past is not necessarily a good guide to the future, and reliable data is sparse.

“Asbestos is not going to be the ‘next asbestos,’” said the CRO Forum, a European group of insurance company risk managers, in a report on Casualty Accumulation Risk in October 2015.

“A core responsibility of the chief risk officer is to stress that future loss scenarios could be materially different from historical ones, and that it would be a mistake to base any consideration of casualty accumulation on known losses only,” the report said.

Bill Rigby is a writer for *Best's Review*. He can be reached at bestreviewcomment@ambest.com.

LIABILITY

BOMBS

Big data analytics and scientific reports are helping insurers predict and underwrite potential casualty catastrophes.

The Unpredictability of Liability

Natural disasters are fundamentally governed by fixed physical laws, the CRO noted, whereas large, accumulating casualty risks are caused by unpredictable human behavior in ever-changing legal and political environments. It takes much longer for liability risks to be identified, and by the time claims show up, it may be too late to contain a problem. Losses also tend to affect multiple underwriting years.

On top of that, casualty risks can reach across the globe, in contrast to the largely local effects of even the biggest natural disaster, which makes it more difficult for insurers to diversify their risks.

Traditionally, insurers have formed emerging risk committees to act as their eyes and ears on new threats. These ad hoc groups keep a close watch on scientific studies and

Key Points

The Challenge: Casualty catastrophes are difficult to predict, so insurers have typically declined to write for potential liability disasters.

The Cost: Billions of dollars in premiums have been lost from not quantifying and covering more emerging exposures.

The Shift: New tools enable a predictive, scenario-based view of risk that could allow more creative underwriting.

lawsuits, with varying degrees of technological help, and try to ensure an underwriter's exposure is limited in potential problem areas.

In the past, that has often meant tightening up wording or simply excluding certain risks from policies.

"The industry has learned how to protect itself from catastrophes by taking a conservative approach focused on risk mitigation," said Andrea Scascighini, head of Large Underwriting Desk, Casualty Treaty, for Swiss Re Americas.

Pros and Cons of Caution

That cautious approach has prevented a recurrence of an asbestos-sized catastrophe, but it has also left big holes in coverage and effectively means the insurance industry has been

walking away from billions of dollars in premiums because of an inability, or unwillingness, to quantify



“Any individual thing is unlikely to be the next asbestos. Instead, find all the candidates and then monitor and manage your accumulations to all of them. But write them all.”

Robert Reville
Praedicat

exposure from emerging risks.

In an attempt to amend that approach, a new generation of tools is being developed to help insurers take a more predictive, scenario-based view of liability risk that might allow a more creative approach to underwriting.

Swiss Re has created what it calls its Liability Risk Drivers model; reinsurance broker Guy Carpenter has its MetaRisk Reserve; Willis has Dynamic Casualty Forecast; and specialist modeling company Praedicat has CoMeta, which uses big data analytic techniques to quantify emerging liability risks.

“Swiss Re believes that we are at the verge of a revolution,” said Scascighini, arguing that insights from big data, new modeling techniques and better transparency on exposures will change underwriters’ outlooks. “Doing so will significantly increase the insurability of these emerging risks and will bolster the impact of insurance in supporting the fast-changing entrepreneurial world.”

The Science of Risk Modeling

Praedicat, a company formed by RAND Corp. and

risk modeling firm Risk Management Solutions Inc., introduced the first forward-looking liability risk modeling system.

The firm uses an algorithm to search peer-reviewed scientific papers identifying areas where scientists are introducing theories that a chemical substance, product or business activity is causing some environmental damage, property damage or bodily injury. It tracks the emergence of these papers over time and infers a likelihood of litigation based on the scientific findings and whether they might hold up as evidence in court.

The next step is to establish a footprint of a particular risk, down to the individual company level, and overlay that onto an insurance company’s portfolio to identify potential areas of accumulation and estimate potential exposure.

Praedicat hopes the result will be that insurers can get a good grasp on likely exposure and continue to underwrite policies without resorting to blanket exclusions.

“The idea that you are going to look for the next

Types of Casualty Catastrophe and Candidates for ‘The Next Asbestos’

Classic Clash	Serial Aggregation	Systemic Loss
Mont Blanc tunnel accident	Diacetyl	IPO laddering
Deepwater Horizon	Parmalat default	

Source: The CRO Forum

asbestos has been the problem with the whole emerging risk approach that the industry has been following the last few years,” said Robert Reville, president and chief executive officer of Praedicat.

“It’s the idea that you can find the next asbestos and exclude it,” Reville said. “Our idea is that any individual thing is unlikely to be the next asbestos. Instead, find all the candidates and then monitor and manage your accumulations to all of them. But write them all.”

Praedicat co-produced a report last year with Lloyd’s of London on using big data analytics to better understand emerging liability risks. It concluded that its approach could help insurers take on more risk.

The “Precautionary Principle”

It argued that “scientific skepticism,” which suggests no action should be taken on any issue until scientific consensus has been reached, is not the best approach for insurers, given that by that point it may be too late for many injured parties. Instead, it prefers the “precautionary principle,” in which overall risk should be considered and steps to manage the risk taken

before consensus is reached.

The CRO welcomes such an approach. “New technologies like big data and new forward-looking modeling techniques have matured to a point where it may become possible to significantly improve the accuracy, prediction power and quality of casualty accumulation models,” it said in its report last year. “This trend should enable additional risk-taking activities, without loss of control over systemic and accumulating exposures.”

Scascighini said the new modeling approach “presents an opportunity to close the liability protection gap and increase the resilience of all economic sectors.”

Accumulation is the greatest concern for insurers, regulators and rating agencies when thinking about casualty catastrophes and a company’s ability to withstand one.

A.M. Best defines casualty catastrophes as “events, activities or products that result in a number of lawsuits from multiple plaintiffs alleging damages that impact multiple insureds, coverages and/or time periods.”



“The industry has learned how to protect itself from catastrophes by taking a conservative approach focused on risk mitigation.”

Andrea Scascighini,
Swiss Re Americas

Emerging Risk Groups and Examples

Cybersecurity: Data loss from hacking, taking control of self-driving cars or large ships

Climate change: Liability of carbon-emitting companies for changing weather patterns

Earthquakes caused by fracking: Incidences in Oklahoma after fluid injection

Endocrine disruptors: Widely used substances such as BPA, phthalates affecting hormone systems, causing birth defects, developmental disorders, cancer

Foodborne illness: E. coli, botulism, listeria, norovirus spreading through chain restaurants

Pandemic: Zika virus giving rise to claims over birth abnormalities

Traumatic brain injury: Concussions caused by frequent head contact playing sports

Post-traumatic stress disorder: Potential causes from a variety of sources including battlefield, crime, accidents, abuse

Police brutality: Marked rise in complaints over bodily injury caused by law enforcement, often captured on camera

Lesser risks: Nanotechnology, GMOs, cellphones, e-cigarettes

Source: The CRO Forum, industry experts

The rating agency introduced casualty catastrophe loss scenario modeling questions into its 2014 Supplemental Rating Questionnaire.

Cyberrisk is the most obvious example of accumulation risk, according to Scascighini, given that all companies are now reliant on the Internet, and a single attack could have a cascading effect.

Hartwig said the industry's ability to model cyberrisk is roughly where hurricane catastrophe models were in 1992, before the devastating Hurricane Andrew. He adds on to cyber risk the threat of hackers taking control of modes of transportation, whether autonomous cars being made to crash, or an oil tanker remotely hijacked to collide with another vessel such as a large cruise ship.

Food, Chemicals Remain Concerns

Personal health is a perennial concern, from new ingredients in food or household objects causing disease. Here, the accumulation effect could be from the widespread use of foods previously regarded as harmless.

“Like the overconsumption of sugar or salt in diets,”

said Scascighini. “Despite being currently difficult to litigate upon these liabilities, the societal impact is so significant that these factors cannot be neglected in any assessment of an insurance portfolio.”

Reville said phthalates, a group of chemicals used to make plastics more flexible and now being researched for possible links to autism, cancer and other illnesses, pose a noticeable threat.

The chemicals have been used widely in children's toys, medical equipment and vinyl flooring, potentially exposing a large number of children to harm.

“Its industrial footprint is part of what makes it worrisome. It means it can result in a large-scale clash event, like asbestos,” said Reville. “We don't think that it's likely. But it's a low-probability, high-consequence event.”

Double Trouble

The CRO Forum also points to the risk of liability events being so severe they affect the asset side of the portfolio and cause a double threat. For example, if BP's Deepwater Horizon spill had caused the oil company to default on its bonds, it could have



caused investment losses for insurers on top of claims losses. Similarly, a global pandemic could wreak havoc on financial markets and also trigger losses on life and health policies.

In assessments of such risks, the United States has generally been viewed as the most likely source of a casualty catastrophe. It is the world's biggest liability insurance market by far, accounting for about half the world's \$160 billion in direct commercial liability premiums in 2014, according to Swiss Re.

That coverage represents a juicy target for lawyers, according to Stephen Kempsey, U.S. Casualty Practice leader at broker Marsh.

"Auto insurance and labor law claims have long been lucrative for litigants and their attorneys—and costly for businesses," he said in a January report looking at emerging risks for this year. "In 2016, litigators will look to expand their activities and broaden their focus to traumatic brain injuries, police brutality and post-traumatic stress disorder."

Hartwig agreed the United States' legal system is "the most hostile in the world to business, the most

generous in the world to plaintiffs' attorneys and trial lawyers."

But, he said, changes in the past decade have made it harder for plaintiffs to file some types of lawsuits and to win big awards from juries. "The fear associated with the next mega-casualty catastrophe is directly related to the current state of the tort system, which is functioning much better than it was 15 to 20 years ago," he said.

The insurance industry has been through periods of worrying about certain risks, but lack of scientific proof has prevented large scale legal action involving insurers on cellphones, GMOs or powerlines.

"All of these are examples of risks that the insurance industry could have taken on but has been worried about or been avoiding because of an inability to quantify and anticipate the risks without having a claims history in advance," said Reville. "Those could have been managed differently. The industry didn't need to walk away from those risks as much as they did."

BR