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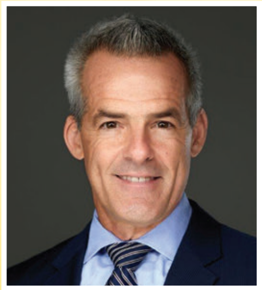

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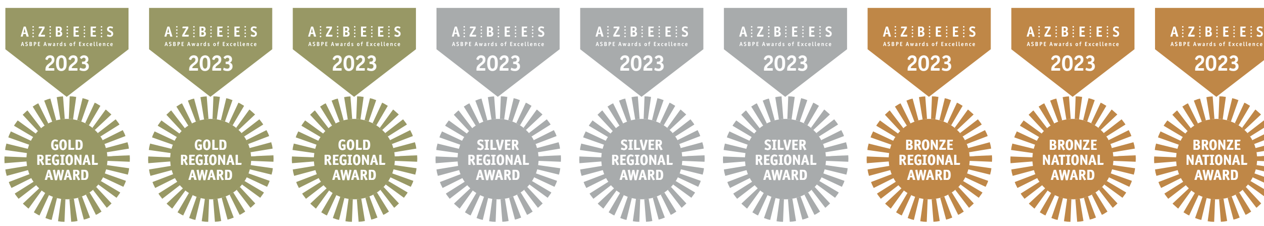

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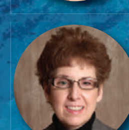
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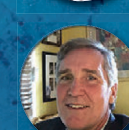
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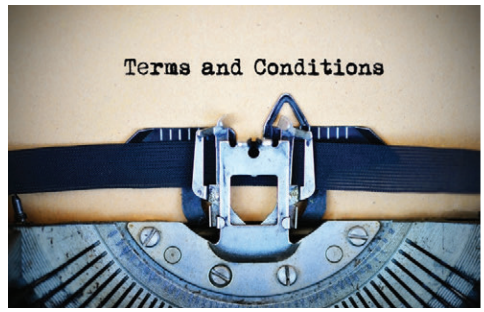

Carrier Management

VOLUME 10, NUMBER 3 Q3 2023

www.CarrierManagement.com
Critical Information for P/C Insurance Company Executives & Directors

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POSTMASTER: Send change of address form to Carrier Management, Circulation Department, 3570 Camino del Rio North, Suite 100, San Diego, CA 92108-1747.
ARTICLE REPRINTS: For reprints of articles in this issue, contact us at (800) 897-9965 x125 or reprints@carriermanagement.com for info.

From the Editor

The Long Tail: Aftermath of Disaster

While I was doing research for this edition, I came across these paragraphs, written by one of the leaders of a technology company, recalling a previous role he had working in disaster relief:

After a few days, most people were no longer in immediate harm of losing their lives, and I watched the news cycle move on and the donations slow down. But those people whose homes, businesses, and livelihoods were destroyed were still suffering. I realized a second truth: what was left after the news cycle moved on were those people directly affected, and their insurance companies.

While there is immense suffering in the aftermath of a crisis, there's also a long tail of suffering during the months and years it takes to rebuild. And the suffering during the long tail is just as big, if not bigger, than what happens in the hours and days after a crisis hits.

The words were written by Nathaniel Manning, COO of Kettle, in an online article, "How I Came to Start a Reinsurance Company to Help People Hurt by Climate Change," posted on Medium. Kettle is an insurance and reinsurance MGA using machine learning to understand and price wildfire risk, and is profiled in this edition.

The sentences about the "second truth" and the "long tail" stuck with me, partly because "long-tail" is also a part of the jargon of the insurance industry. But mostly, it is because Manning puts insurance companies and homeowners together—recognizing that both are impacted in the aftermath of disaster. Right now, in California, it's undeniable that both are struggling with the aftermath of the impacts of wildfires and insurance regulations leaving them all in a place they don't want to be—not a disaster claims effort but an insurance market crisis.

The palpable sense of desperation on both sides was apparent during a four-hour workshop in July, during which the California Department of Insurance asked interested parties to weigh in on the use of catastrophe models in ratemaking and required public disclosure of model information. For sure, the intricacies of how to make that happen were discussed. But more memorable testimony went in other directions.

"Has anybody addressed the issue now at this point of getting insurance?" a distressed insurance agent said, reporting that she had to miss some testimony to help a customer with no available coverage options. Even a client living in a "concrete city" saw a premium spike from $2,000 to $4,000, while a more wildfire-exposed customer saw a fourfold jump to five-digit premium.

"CSAA wants to continue to write California customers, but no company can offer products that lose money over the long run because the company will simply cease to exist," said an executive of that insurance company, describing a regulatory decision to lower a wildfire cat load by $20 million in spite of following department guidelines.

"Right now we are dealing with an insurance crisis on the condominium side. The price of insurance has gone up as much as 6,900 percent because the admitted market has stepped out of the picture," a representative of a builder's group said. "Our customers, the home buyers, are basically seeing their insurance rates go from $250 a month to $1,500 a month through their homeowners association dues."

"If carriers [were] here to take advantage of our need for their services, then State Farm would've stayed in this state. As would have Allstate," another agent said, replying to rhetoric from consumer advocates suggesting that insurers were engaging in "economic blackmail" to force deregulation and the use of "black-box models."

In an interview for *Carrier Management*, Manning refers to insurance as "this beautiful thing," describing the pooling of risk that is the essence of insurance—communities of insureds and insurance companies solving risk problems together.

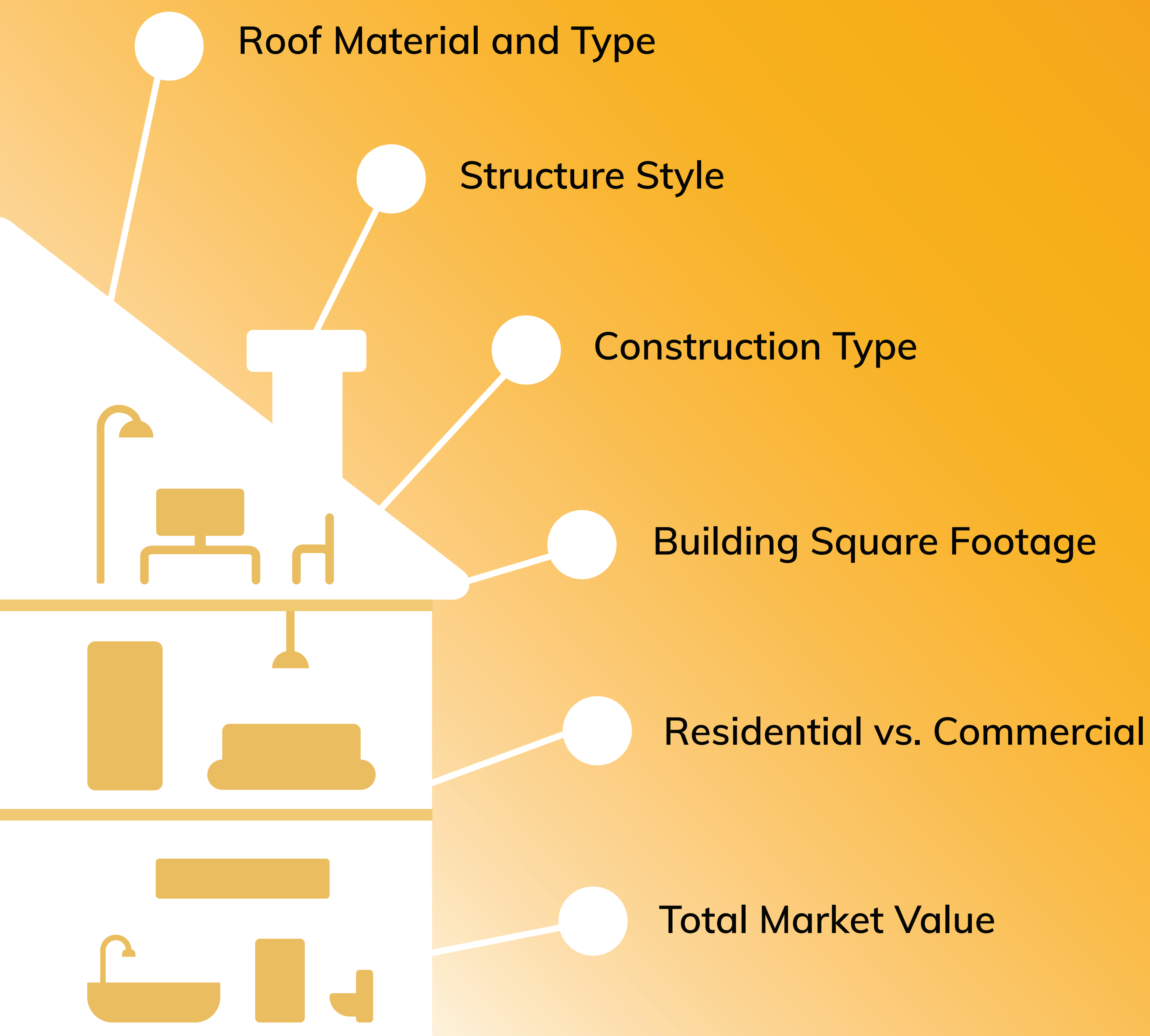
The first truth, referenced in his Medium article, is the fact that efforts to stop the progression of climate change have failed. It's no longer fixable.

But an insurance market crisis? That's got to be fixable. During the weeks I spent putting together this issue, I heard and read about fixes that include community-based mitigation, a CEA for wildfire, a government-backed cat perils policy form, adding the cost of reinsurance into California rates, allowing third-party cat model review (à la the Florida Commission on Hurricane Loss Projection Methodology), using a public model, a cat model clearinghouse...I know I have missed some.

It seems fixable. But the fixes can't have a long tail. The need is immediate for California consumers and their insurers.

Send your feedback to Susanne Sclafane at ssclafane@carriermanagement.com

You'd Think We Lived There



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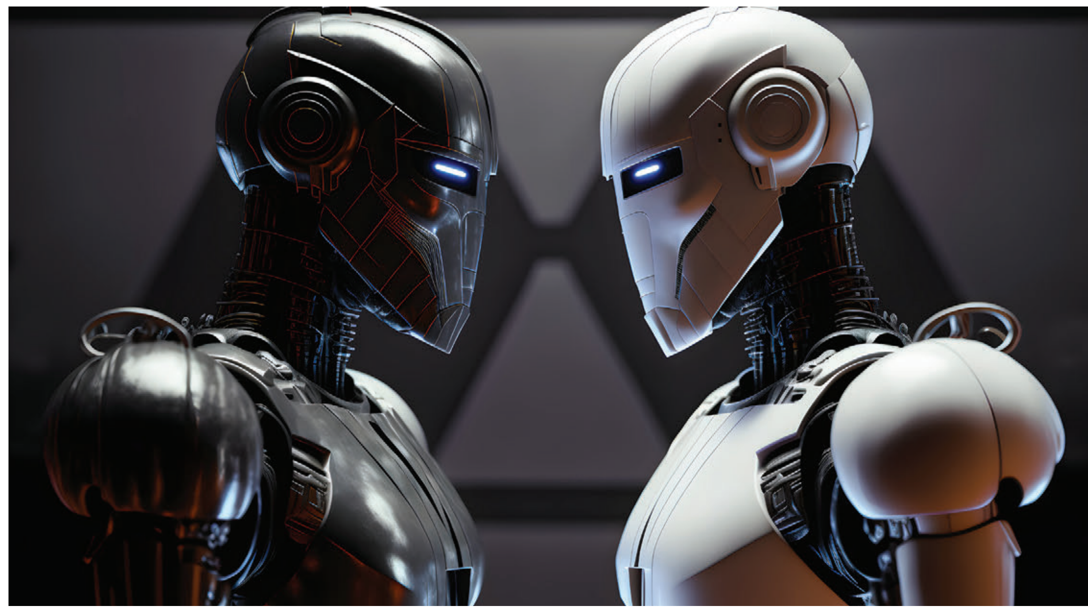
5 Emerging Risks to Watch:
'Evil Digital Twins,' Climate Change, 'Forever Chemicals' in Tap Water

By Kimberly Tallon

In this edition of Risk Alerts, *Carrier Management* highlights "evil digital twins," climate risks, "subsurface heat islands" and the presence of PFAS in U.S. tap water.



Evil digital twins

A digital twin is a virtual representation of a physical object, person or process that is used to simulate real situations and their outcomes to help in decision-making. As companies expand their use of digital twins, experts say they are also increasing their cybersecurity exposure. Digital twins can create new entry points for cyber attacks and present opportunities for new attack types—including what one security expert described as the "evil digital twin."

Jason M. Pittman, collegiate faculty with the School of Cybersecurity & Information Technology at the University of Maryland Global Campus, in a recent UMGC blog predicted: "Over the coming year, we will witness a rise of evil digital twins. This malicious virtual software model will be used to enhance cybercriminal activities such as ransomware, phishing, and highly targeted cyber warfare. Such attacks will demonstrate a significant increase in effectiveness compared to traditional methods because of the specificity provided through the evil digital twin models."

A hacker could create a digital twin of an existing persona, "insert it into your environment, and then watch and participate in your organization and then inject malware into the ecosystem," Pittman told CSO. If hackers are able to break into a digital twin environment, they could either steal the data or manipulate it to deliberately skew the simulation outcomes, he believes.

Source: "Evil digital twins and other risks: the use of twins opens up a host of new security concerns," CSO, June 14, 2023

Collapse of the Atlantic Ocean current

Researchers from the University of Copenhagen's Niels Bohr Institute and Department of Mathematical Sciences have conducted a study revealing that the ocean current system, vital for exchanging cold and heat between the North Atlantic region and the tropics, will collapse if greenhouse gas emissions continue at the present rate.

Using advanced statistical tools and historical ocean temperature data spanning the past 150 years, researchers determined that the ocean current is highly likely to collapse with 95 percent certainty between 2025 and 2095. The most probable time frame for this event is estimated to be 34 years from now, in 2057.

Such a collapse could pose significant challenges, including tropical warming and increased storm activity in the North Atlantic region. While the cooling effect on Europe might appear less severe compared to the overall global warming and frequent heat waves, the shutdown would exacerbate warming in the tropics, where rising temperatures already have created challenging living conditions.

Source: "Gloomy climate calculation: Scientists predict a collapse of the Atlantic ocean current to happen mid-century," University of Copenhagen, July 25, 2023

Underground climate change

A phenomenon that scientists have called "underground climate change" is deforming the ground beneath cities, according to a study published in the journal Communications Engineering. This shifting of land under urban areas could pose a problem for buildings and infrastructure, threatening long-term performance and durability.

Technically known as "subsurface heat islands," underground climate change is the warming of the ground under our feet, caused by heat released by buildings and subterranean transportation such as subway systems.

Soil, rocks and construction materials deform when subjected to temperature variations. For example, the ground underneath buildings can contract when heated, causing unwanted settlement, according to lead study author Alessandro Rotta Loria, Northwestern University. "Deformations caused by underground climate change are relatively small in magnitude, but they continuously develop," he said. "Over time, they can become very significant for the operational performance of civil infrastructure like building foundations, water retaining walls, tunnels and so on."

Studied for the past 25 years, underground climate change can cause groundwater contamination or problems with underground railways by making tracks prone to buckling or causing passengers to suffer from excessive heat.

"It's important to stress that underground climate change does not threaten the safety of people and does not threaten to collapse structures and buildings," Rotta Loria said. "It does pose a potential challenge for the functionality and the durability of structures, because excessive ground deformations can lead to distortion, tilting and potentially cracking."

As a result, water could flow more easily into cracked structures, potentially causing corrosion in materials such as reinforced concrete.

Source: "'Underground climate change' is deforming the ground beneath buildings, study finds," CNN, July 17, 2023; "The silent impact of underground climate change on civil infrastructure" by Alessandro Rotta Loria, Communications Engineering journal, Nature.com, July 11, 2023

Surf's up

Waves are getting bigger, and surf at least 13 feet tall is becoming more common off California's coast as the planet warms, according to new research tracking the height from historical data gathered over the past 90 years.

Oceanographer Peter Bromirski at Scripps Institution of Oceanography analyzed seismic records dating back to 1931 to measure the change in wave height. When waves ricochet off the shore, they collide with incoming waves and cause a ripple of energy through the seafloor that can be picked up by seismographs designed to detect earthquakes. The greater the impact, the taller the wave.

Until now, scientists relied on a network of buoys by the National Oceanic and Atmospheric Administration that collect data on wave height, but California coast data only went back to 1980.

Bromirski's team found that average winter wave heights have grown by as much as a foot since 1970, when global warming is believed to have begun accelerating. Waves at least 13 feet tall are also happening a lot more often, occurring at least twice as often between 1996 to 2016 than from 1949 to 1969. He also found extended periods of exceptionally low wave heights prior to about 1970 and none of those periods since.

The study, published in the Journal of Geophysical Research: Oceans, adds to the evidence that climate change is causing massive shifts in the world's oceans. As sea levels rise and storms intensify, bigger waves will cause flooding in coastal communities, erode beaches, trigger landslides and destabilize remaining bluffs.

These issues are of particular concern along the California coast, where sea cliffs already have started crumbling and brought down homes in recent years. Because of sea-level rise, projections at the end of the 21st century indicate even moderate waves might cause damage comparable to that of extreme weather events, according to the study.

Source: "Big waves becoming more common off California as Earth warms, new research finds," AP News, Aug. 3, 2023

Tainted tap water

A recent study by the U.S. Geological Survey found that nearly half of the nation's tap water likely contains at least one per- and polyfluorinated alkyl substance, or PFAS—known as "forever chemicals" because of how long they take to break down.

There are more than 12,000 types of PFAS, not all of which can be detected with current tests; the USGS study tested for the presence of 32 types.

PFAS are used in a wide variety of common applications, from the linings of fast-food boxes and non-stick cookware to fire-fighting foams and other purposes. High concentrations of some PFAS may lead to adverse health risks.

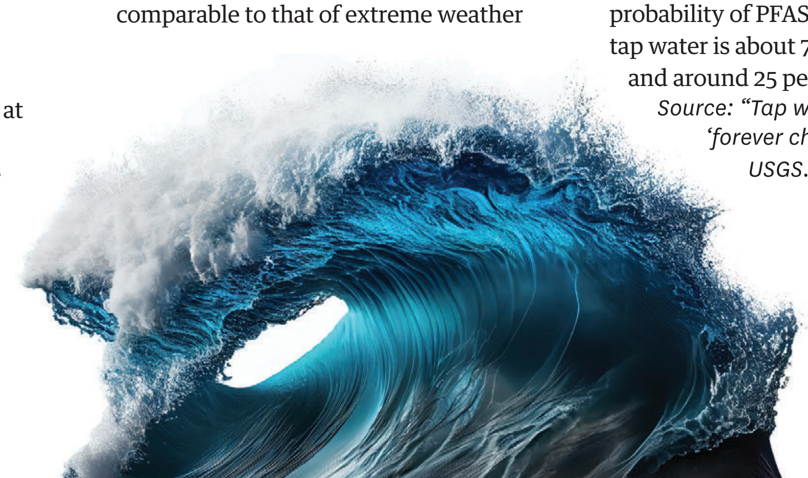
The researchers tested water collected directly from people's kitchen sinks, finding that at least 45 percent contained one or more type of PFAS. PFAS concentrations were similar between public supplies and private wells.

The most frequently detected PFAS compounds in this study were PFBS, PFHxS and PFOA.

The scientists collected tap water samples from 716 locations representing a range of low, medium and high human-impacted areas. The low category includes protected lands; medium includes residential and rural areas with no known PFAS sources; and high includes urban areas and locations with reported PFAS sources such as industry or waste sites.

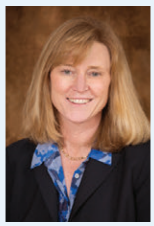
USGS scientists estimate that the probability of PFAS not being observed in tap water is about 75 percent in rural areas and around 25 percent in urban areas.

Source: "Tap water study detects PFAS 'forever chemicals' across the US," USGS.gov, July 5, 2023 CM



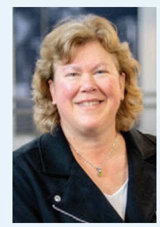
The Art and Science of **Underwriting in an Era of Evolving Risk**

"It's art and science, and we wrestle with both of those every single day."



Tracey Ant,
The Hartford

"Data and artificial intelligence will continue to be used throughout the life cycle of a policy and will help create new ways of managing risk."



Heather Boyer,
Society Insurance

"Companies are not just taking a look at the obvious but also looking at some of the more potential concerns that loom out there and taking a very conservative approach to how they're underwriting."

Tim Zawacki,
S&P Global Market Intelligence

Executive Summary: As insurance underwriters navigate a challenging risk landscape with changes in weather patterns, legal and regulatory hurdles, and economic uncertainty, experts say they'll need to learn to balance both the art and science of underwriting. Using behavioral science to understand client needs and introduce more personalization is one step of this process, as well as developing deep expertise in specialized areas. Most of all, experts say the use of data and automation is key for underwriters moving forward.

By Elizabeth Blosfield

Insurance underwriters are seemingly pulled in many directions today as risks quickly evolve, from extreme weather events to changes in the legal and regulatory landscape to general inflation trends. Underwriters who work to understand the changing landscape and how it affects the classes of business they write will have a leg up on the competition.

"It's art and science, and we wrestle with both of those every single day," said Tracey Ant, head of middle and large commercial business units at The Hartford. She spoke with *Carrier Management* for its newest episode of Between the Lines, a video series exploring topics in the latest edition.

"Making data-driven decisions has become part of our DNA, but there's also underwriting judgment, and that's the art that comes over the top," she added. "When you meet a client and understand how important safety is to them, you get some insights that the data doesn't always tell you."

Behavioral Science and Personalization

Behavioral science helps underwriters understand the needs of their clients in such a challenging risk environment, according to Lore Farrell, vice president of product management at Slice Labs.

"Behavioral science is really about the study of human behaviors, how we go about making decisions and choices," she said. "And as well, it looks at how we respond to influences in our environment."

In a three-part article series for *Carrier Management* published in March of 2020, Andy Clapson, data science lead of Slice Labs, described behavioral science as a discipline that the best insurance agents and carriers are already practicing. He said the challenge is to harness what they know—and what behavioral scientists teach—and to scale it across the enterprise.

Farrell said behavioral science should be applied across the value chain for insurers, from product ideation to underwriting and pricing, as well as sales and claims. This is because in all aspects of insurance, including underwriting, Slice Labs has found customers like to be engaged in each step of the process.

"We're all connected, and we're connected all the time, it seems," she said. "I think we were initially surprised that customers liked to be engaged. It seemed to be quite contrary to what is the traditional experience with insurance where you would have contact with your insurer at the time that you purchased the policy, and then you probably wouldn't hear from them again until it was renewal time unless maybe you had a claim throughout the year. But we found that customers were positive about being engaged, about having connections, as long as the connections were timely, helpful and relevant."

Behavioral science can help insurers identify those integration points and how they should be connecting with consumers, Farrell said. "We can determine appropriate timing, when it's best to send messages to different segments of customers who respond better at different times, reminders, nudges, that type of thing," she said. "We can style messages that work best for a specific group."

Slice Labs is a technology company backed by insurers and reinsurers that offers on-demand insurance products with a particular focus on small businesses. One of its products, launched in 2016, is an on-demand, pay-per-use insurance product for home share hosts who use platforms like Airbnb.

"For our home share hosts, it was really important that we start and be able to provide that personalized experience," Farrell said.

She said the company used behavioral science to understand its customers as it

continued on next page

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worked to personalize email notices, and as a result, was able to provide targeted content that varied in style and was tailored to each client.

"I think that focusing on personalization really helped us create and establish a customer-centric culture for Slice, and it was really important that we all have a really thorough and good understanding of our customer profiles," she said. "The application of behavioral science and personalization, I feel those really go hand in hand. They're kind of two halves of the same whole. Behavioral science, we could say, is the fuel that fires the engine on how we use data to achieve personalization."

'Data Is Key'

Data is the science behind the art of understanding the customer, Farrell said.

"The value of data is important. Data is key," she said. "That, in turn, means that the specialized skill of underwriters can be used more effectively by the insurers. They can spend time on more complex cases where they're adding more value to the overall process."

Specialization in underwriting is becoming more important than ever, Ant added. "With our distribution partners and our insureds, there's an expectation that we understand their businesses in a really deep way," she said.

The Hartford offers specialized insurance products for the construction industry, which Ant pointed to as an example of this business strategy.

"A construction client, and a broker on their behalf, wants to make sure that they're dealing with an underwriter who understands the trends in construction, what's going on, the risks, the emerging risks," she said. "It starts with speaking the same language as our brokers, our agents and our insureds...and I think there's an expectation that we are bringing those insights to our clients in a specialized way."

Ant said this is because the construction industry is so big that underwriters need to work to understand the many sub-verticals and sub-industries within it.

"Our data is allowing us to really understand trends on a micro basis, [which is] different than a decade ago," she said. "For our underwriters, when they have those data and trends at their fingertips, the conversation is much richer."

Ant said The Hartford works to empower underwriters to look at the entire scope of risk, from a macro to a micro perspective, and harness the right data by creating constant feedback loops. "We are trying to free up time for our underwriters to be more consultative with their brokers, agents and insureds by leveraging data and automation," she said. "We have that feedback loop around what it is that we can do. And with our agents and brokers, we probably spend less time boasting about the great things that we're doing but rather asking them, 'What can we do better? What is it that you and your clients need that The Hartford could help with?'"

Heather Boyer, CEO of Society Insurance, said the specialist insurer (for restaurants and other small businesses) is applying the same emphasis on data and automation in its own business strategy.

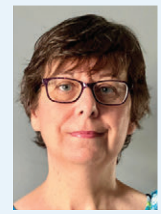
"Data and artificial intelligence will continue to be used throughout the life cycle of a policy and will help create new ways of managing risk," she said. "This will speed up change the property/casualty industry is already experiencing. It will never replace the insights of people, but it will allow us all to do much more to serve customers."

Dennis Saldana, Society

Insurance's vice president of underwriting, said the insurer's approach involves not only understanding the micro risk characteristics of policyholders but also the industry as a whole from a macro perspective. "Having a higher level of knowledge of the legal environment, emerging trends and the financial conditions of the industries we target better equips us in the underwriting process," he said.

"The value of data is important. Data is key."

Lore Farrell, Slice Labs



"Having a higher level of knowledge of the legal environment, emerging trends, and the financial conditions of the industries we target better equips us in the underwriting process."

Dennis Saldana, Society Insurance

Specialization and Climate Risk

This strategy is becoming increasingly important with changing weather patterns, in particular, as it is one risk area that is evolving especially quickly and unpredictably, Ant said.

"I think that weather patterns are becoming much more pronounced than in the past, and using models to help us make our decisions—understanding where an insured's business is domestically and across the globe—matters a whole lot," she said. "All of those things require—again, back to that specialization—in many cases, more than one underwriter to tackle a problem that [insureds] maybe have or that they might be seeking some guidance on."

This is especially important as climate risks continue to grow, said Tim Zawacki, principal research analyst at S&P Global Market Intelligence.

"They're numerous, and as we talk about this and think about how climate has jumped into the national mindset, it's gone beyond a concern that's specific to insurance," he said. "It's something that's on the top of everyone's mind, really."

He said that with this in mind, insurers will need to consider the industry's role in shaping the societal response to climate change. "Is it a leader? Is it a follower?" he said. "Is it somewhere in between?"

Zawacki said he sees insurance as a leader, as he believes the industry was ahead of the game in realizing what climate risk means for how insurers operate, underwrite and price business.

"The insurance industry has increasingly used sophisticated modeling technology through numerous vendors to try to get a sense as to what this all means for their existing book of business, where they should allocate their capacity going forward, and perhaps more importantly, where they should avoid as we think about some of the emerging risks," he said.

When it comes to these emerging risks, Zawacki said incumbent providers are taking a hard look at the business they're writing.

"We're starting to see companies take an even more aggressive approach to underwriting their existing book, whether that's through nonrenewing entire business lines, as we're seeing in some markets, or whether that's maybe taking more of a scalpel approach to addressing some risks that may be emerging," he said. "Companies are not just taking a look at the obvious but also looking at some of the more potential concerns that loom out there and taking a very conservative approach to how they're underwriting. They're seeking very aggressive rate increases in markets where catastrophe exposure is significant."

Intellectual Curiosity

With all of this to consider, what are carriers looking for in underwriting talent as they manage ever-changing risks?

"It probably starts with an intellectual curiosity," Ant said. "Underwriting is about contemplating risk and sometimes thinking about what's not right in front of you."

Saldana said Society Insurance seeks underwriters who not only have technical capabilities but relationship capabilities so they can embrace data and automation as well as a deeper understanding of client behavior and needs.

"Our underwriter hiring profile has evolved as we have become more specialized with improved technology," he said. "The underwriting process had been highly manual, and we looked for desk management and organizational skills in our underwriting candidates. As we have moved into a highly automated straight-through processing environment, we've shifted to underwriters who have a sales and relationship aptitude and more focus on decision-making abilities."

Looking forward, Saldana said: "Data analytics, predictive modeling and artificial intelligence will continue to evolve as tools for underwriters...The future of underwriting will be highly automated, utilizing straight-through processing on smaller accounts to allow underwriters to focus on larger, more complex accounts as well as building relationships with their agency partners."

While individual risk analysis will always be a mainstay of underwriting, understanding the larger picture is becoming more important, he said.

"Underwriters who understand the changing landscapes of things like the economy, legal environment or weather patterns and how they affect the classes of business they write will have a leg up on profitable growth," Saldana said.

Regulatory Weaknesses, Politics Driving California Exits,
Industry CEOs Say

By Susanne Sclafane

A trio of property/casualty carrier executives voluntarily offered their views on a growing insurance availability crisis in the state of California at an industry conference in late June, pointing to regulatory disconnects and political issues as drivers.

"I have real questions and reservations around whether the regulatory system is able to keep up with the pace of change," said W. Robert Berkley Jr., president and chief executive officer of W.R. Berkley Corp., during a panel discussion at the S&P Global Ratings 39th Annual Insurance Conference.

"The situation in California really is a prime example of that—where there's just an economic disconnect. Practically speaking, the industry is saying, 'Here's the economic model. This is what we need to do in order to have a viable business'—where the capital is getting a return that justifies the utilization. And you have a regulatory system that is struggling with that," he said, unprompted to explain decisions by carriers like State Farm, Allstate and American International Group to put the brakes on writing new business in the state.

(Editor's Note: After Berkley spoke, Farmers announced plans to limit new business writing in California as well. See related article: "Farmers Limits New California HO Policies; Insurer Group Calls for Reform")

"It's a timing issue, it's a social issue, and dare I say it is a political issue," Berkley continued. Ultimately, society pays the price, he said.

When Berkley made his remarks, the topic under discussion—teed up by panel moderator Larry Wilkinson, an S&P Global Ratings senior director and analytical manager—was inflation, not regulation or politics. Wilkinson had asked USAA President and CEO Wayne Peacock about actions insurers are taking to stay ahead of economic and social inflation trends impacting P/C insurance loss costs.

Among the actions, Peacock said, is getting rate as fast as possible.

While Peacock and Selective President and CEO John Marchioni agreed with

an assessment delivered by S&P Global Ratings Chief Economist Paul Gruenwald earlier in the day, who said that various components of economic inflation rates are decelerating or stabilizing, the carrier CEOs said components that matter to insurers remain elevated and that swift capacity and price changes in low layers of property-catastrophe reinsurance programs are still putting primary carriers in a bind. (See related textbox, "Where Inflation Is Headed?" on the next page.)

Marchioni segued from Wilkinson's original question about personal and commercial lines carrier reactions to inflation challenges into a discussion of the impacts of reinsurance market dynamics on their businesses. (See related online article, "CEO Viewpoints: How Carriers, Reinsurers Are Reacting to Loss Pain, Inflation.") Then, Peacock honed in on the impacts of a hard property-catastrophe reinsurance market on cedents and their customers with a summary: "All of that comes back then to the primary carrier, and it manifests itself here in rate or access, almost [immediately], without the ability to get rate as fast as the changes that the reinsurers put in place."

"Do you mind if we keep digressing?" Berkley asked Wilkinson, moving the conversation from reinsurance to regulation. The inability of regulators to keep up with the pace of change "applies to a whole host of different things within the insurance space," Berkley said, zeroing in on the situation in California.

Wilkinson then asked Marchioni and Peacock to describe how the regulatory challenges influence how they run their businesses.

Marchioni said commercial insurers like Selective have an easier time than personal lines insurers. "We have a lot more tools including multiple companies that are filed and the use of individual's schedule credit and debits. It gives us more flexibility as underwriters to make decisions on pricing and not be entirely dependent upon filed base rate changes to drive rates," he said.

Selective's CEO went on to support Berkley's view that "a broken regulatory system that doesn't allow companies to

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generate a reasonable margin for the capital that they're providing" ultimately hurts customers. "I think you've seen countless examples of that over the last several decades. Most recently, we've got the California example. You saw it in Florida, which was largely driven by an issue with regard to the regulatory and litigation environment that had an enormous cost," Marchioni said, taking the conversation in yet another direction to discuss the need for "meaningful tort reform." (See related articles, p. 42 and p.51, for more on Florida.)

"That's been going the other direction for the better part of a decade or a decade and a half," he said, suggesting that legal reforms benefiting the plaintiffs bar have been more prevalent than those that benefit insurers and their customers.

Where Is Inflation Headed?

At an earlier session, S&P Global Ratings Chief Economist Paul Gruenwald presented graphs of "headline inflation," which includes food and fuel price trends, and "core inflation," which excludes those.

According to Gruenwald, the headline number spiked high following Russia's invasion of Ukraine, when food and fuel prices went into double-digits. Now, headline has "dipped below the core" with some of the high fuel increases dropping out of the data. Core inflation, meanwhile, is stable.

"If overall [headline] inflation is dropping, that's good for households, but Central Banks are looking at the core because that's what they can control," he said, supporting an S&P prediction that interest rates will stay "higher for longer."

Core inflation "is not doing very much. It's relatively flat," he reported. "It's been sticky. It hasn't moved much in the last four or five months. And that is not good news if you're looking for the Central Bank to start cutting [interest] rates," he said, referring to the U.S. Federal Reserve, in particular.

"That works its way into the costs of goods sold. And unfortunately, the ultimate benefit isn't [to] the consumer with this tort reform that runs in favor of the plaintiffs bar. The ultimate beneficiary is the plaintiffs bar," he said.

He added that insurers have limited ability "to tell that story"—to explain the cost and availability consequences to consumers. "I don't know that we can count on the regulators to do that. But I think from a public policy perspective, we need to be able to have more of that debate, which in today's political environment at the state level or in Washington is very hard to do," he said.

Peacock made note of recent tort reforms benefiting the insurance industry in Florida. "We made a small down payment in the right direction," he said.

Agreeing with Marchioni that personal lines insurers like USAA have a tougher time dealing with the consequences of inflation and a hard reinsurance market, he did say that the health of personal lines carriers is better than it was 12-15 months ago. "Past history is closer to the boat," he said, referring to the need to use past loss experience to justify rate hikes. "And I think there's more of an understanding that inflation truly is real versus 'you made too much money in the pandemic and, therefore, we're not going to grant you any increases,'" he said, suggesting a change in the mindsets of regulators.

"But the reality [because of] the natural lag in the [ratemaking] process, and the ability to have to look backward as opposed to projecting forward, catching up from a rate standpoint, net-net is still a very challenging game," Peacock said.

"California is probably the biggest challenge that we're all facing today," he stated. Echoing Berkley, he said, "There's certainly a political angle to this. There's kind of a social-view-in-California angle to this. But what's happening is you're reducing capacity and availability, and that's going to shift demand into the FAIR plan there or into the insurer of last resort in those states. And ultimately, consumers at large are going to pay the freight for it, most likely more than if they let the private market work."

On a positive note, within the last six or eight weeks, Peacock said, "I do think we're getting a little bit of relief in California," referring specifically to the fact that regulators are starting to have a conversation around the idea of allowing insurers to use modeling—"not just look backward at historical 20-year climate statistics [but] to be able to project forward [in this] dynamic market."

Turning to Florida, Peacock said, "There was a very different dysfunction there—much more around, first, the litigation risk that's there." Secondly, concentration risk is an issue.

Most Florida insurers "are lightly capitalized firms who rely on reinsurance—and reinsurance dries up," he said, noting that this was a factor in more than a dozen failures or exits from the Florida market.

Long-Term Fixes

The three CEOs went on to describe longer-term fixes to problems of elevated catastrophe exposure in Florida and California that would ease the burden of insurance price hikes and decreased access to insurance for customers.

"I do think there's an opportunity for us to start having conversations at the state level about building codes," Marchioni said. Referring to past discussions of building codes in coastal areas, he suggested that new conversations need to take place as shifting weather patterns create new exposures, such as deep freezes moving much further into the country for much longer durations.

"It was building structures, or the types of buildings that led to a lot of the losses that we saw in the last couple of deep freezes," he said. "From an engineering perspective, we have a lot to offer as an industry to our insureds, whether personal or commercial—in our ability to really provide the support and the guidance in terms of how they can better mitigate the risk and build more resilient communities."

Restricting where to build is another

potential fix, Peacock added. "Are we as a society, both nationally and locally, going to get the discipline to do that or not?" he asked, stating that this remains an open question and noting that without societal discipline taking hold, the trends of higher insurance rates and less and less insurance access are going to worsen. "Individual firms are going to get smarter about how much risk they're willing to take in a particular area...The trends are there," he said.

Noting that USAA is a member-based organization, "our whole goal is to take care of military families. So, it'd be really easy to get the underwriting pen out and say no. [But] we're working very diligently to figure out how to say yes, either through tighter underwriting terms or appropriate rates. So, we don't actually have to say no to our members," he said.

Overall, he said, "we're going to have to convince the regulators that our look forward is appropriate. And I think you're going to have to get paid for the risk if you want to continue to write this type of business."

Berkley said that changing building codes and regulation "takes time and money—and there's not a big appetite for that in the short run as far as society goes. The reality is that the marketplace responds...to loss activity and an economic reality. That's just how I see things," he said.

Pointing to the large number of people impacted by Hurricane Ian floods who did not have flood insurance, Peacock said, "You've already got a decision that people are making because of the cost of insurance."

"I agree with you. It's going take a while in terms of changing policy. And I think, in the long run, we have to push for that," he told Berkley.

"When the day's all done, society's going to have to make a choice one way or another: You pay me now or you pay me later...There is a cost to the exposure—to insure. And society needs to decide: 'Are you going to try and control that cost and bring that exposure down, and that in the end will reduce your cost of insurance... Or are you not going to try to bring that exposure down, and that means the exposure will be greater and you're going to have to pay for it..."

"We as a society have really struggled with that, [and] flood is an example where, essentially, our politicians have said we don't have the stomach to force society to really grapple with that. So, effectively, the public sector is going to subsidize what typically would be a private activity. That's just the reality of it," he said.

He added, "It exists not just in flood... We see it in wind. And it's not just wind as far as hurricane; it's straight-line wind or SCS [severe convective storm], whatever you want to label it, where it is just a challenge whether people are willing to accept the realities of what the exposure is and either pay for it or adjust it. And that costs money, too." CM

Are Winds of Change Blowing on California Insurance Law?

Prop 103 Under Scrutiny as Carriers Tout Other Measures

Executive Summary: Does Proposition 103 need an overhaul? That's a key question lawmakers have started asking as they examine the contributors to a growing insurance crisis in the California property market, eyeing factors beyond the increased frequency and severity of wildfires in the state.

Here, Wells Media West Coast Editor Don Jergler reviews how we got to this point. After a little bit of history and a review of recent activities of carriers, regulators, agents and lawmakers, Jergler reveals that legislators, who have been listening to all sides of the crisis, may be next to act with a Prop 103 fix.

By Don Jergler

It would be wrong to assume that California regulators and lawmakers are only now starting to ponder what to do about a potential insurance crisis in the wildfire-prone state.

A state of urgency has been brewing for a few years—long before a string of large carriers said they are less interested in writing California property business. With it becoming increasingly evident that there would be a likely impact on more and more of the state's insurance-buying public, attention has turned to a possible change in the state's guiding insurance laws, or at least how they are enforced.

State Farm General Insurance Co. announced at the end of May that it stopped accepting new policy applications for property/casualty insurance in California for reasons including increased risks from wildfires and inflation. The decision followed a similar move by Allstate Corp. last year. Farmers in early July announced it will limit new homeowners insurance policies in California.

Other large carriers that have reduced their appetite for writing California homeowners insurance include American International Group (AIG) and Chubb.

Agents are reporting that businesses in higher-risk areas are paying increasingly more for property insurance, which is becoming harder to obtain. Liberty Mutual said in late July it will stop offering its businessowners policy on Oct. 1.

To deal with rising rates and lack of availability, more homeowners have turned to the FAIR Plan, the state's insurer of last resort for homeowners, or the surplus lines market. Reports from agents are that more property owners have been forced to take lower limits being offered by carriers, or some are going uninsured.

Fires and Climate

Despite a relatively average 2022 wildfire season, fears of wildfires remain at an "all-time high," and those fears appear to be one driver of decision-making on property insurance, according to a Gallagher Re report showing the threat of damaging wildfires in conjunction with inflation and pricing challenges has led to a distressed insurance and reinsurance market, particularly in California.

The state's wildfire season has become longer and more severe. Wildfire in recent years has been a large source of insured losses in California, surpassing previous records for size and total destruction.

Eight of the state's top 20 wildfires have occurred in the last half-dozen years, burning 8,512 structures, according to the Western Fire Chiefs Association. The top three largest fires—the August Complex fire in 2020, the Dixie fire in 2021 and the Mendocino Complex fire in 2018—burned a collective 2.45 million acres and destroyed 2,526 structures.

Those losses do not reflect the destruction from the Camp Fire in 2018, because the 153,336-acre blaze doesn't rank among the state's largest. However, it was the state's most destructive and its deadliest. That Butte County fire destroyed 18,804 structures, caused 85 deaths and is considered 2018's costliest natural disaster at over $16.5 billion.

"I have yet to run into somebody that said they've been through a harder time with property insurance."

Jeff Okrepkie, George Peterson Insurance Agency

Increased wildfire risk in California is often attributed to climate change. The phrase may continue to be political and debatable for some, but more studies have come out to support the assertion that climate change is worsening wildfire risks in the state. A study out in June shows that nearly all of the observed increase in summer wildfires in California over the past half-century was attributable to climate change. An international team of scientists looked at data from record-breaking summer forest fires in California that show a fivefold increase in burned area in forests in northern and central California during 1996-2021 relative to a period from 1971-1995.

Catastrophe modeler CoreLogic has for some time said worsening drought conditions related to climate change are exacerbating wildfire risk, and it noted that since the early 20th century, temperatures in the West have increased by 2 degrees Celsius.

Regulatory Reaction

California Insurance Commissioner Ricardo Lara has held public meetings to hear from impacted residents and stakeholders going back over five years, and he's taken a number of immediate steps to help affected areas keep their insurance policies in force after massive fires have struck.

He also has increased fire coverages under the FAIR Plan for residential and commercial insureds.

On a number of occasions, Lara set moratoriums on cancellations following wildfires to protect homeowners, such as a mandatory one-year moratorium on insurance companies nonrenewing or cancelling residential property insurance policies in 2020, a move that aimed to help 2.1 million policyholders affected by the severe wildfire season. Earlier that year, he pledged to step up efforts to protect the

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state's residents from wildfires and address a pullback of private insurers from the state's riskiest areas.

Those efforts led to "Safer from Wildfires" regulations to mandate insurance discounts to homeowners and business owners who engage in wildfire safety and mitigation efforts. (Press release, "Commissioner Lara enforces nation's first wildfire safety regulation to help drive down cost of insurance," Oct. 17, 2022)

More recently, the department held a July 13 workshop as a continuation of the multiyear effort that Lara initiated in 2020. During the workshop, the department sought public input on technical and legal questions presented by the use of catastrophe models in ratemaking and the insurance rate approval process. With a regulatory framework and rewards for mitigation efforts made by property owners now in place, the workshop invitation called this "a next step in the thorough evaluation of tools that could help insurance policyholders and insurance companies better anticipate catastrophe losses."

The commissioner and the California Department of Insurance also have worked to assure residents there is still capacity in the state. After Farmers said in early July that it will limit new homeowners insurance policies in California, a CDI spokesman reached out to for comment

"Never before have we heard from consumers and insurance agents desperate for automobile and homeowners insurance but unable to obtain it because insurance companies are unwilling or unable to provide it."

Michael D'Arelli, American Agents Alliance

said that Farmers is one of more than 100 companies continuing to write new homeowners business in California, and that "Californians are covered," with "many choices including Farmers."

According to the CDI's market share data, this includes higher-risk areas. However, the goal of the department and Lara is to increase admitted lines insurance to those who have been forced into the pricier surplus lines market or the FAIR Plan, according to Michael Soller, a CDI deputy commissioner.

Soller sees their work as part of addressing a bigger problem in a world made riskier by climate change. "What California is experiencing is happening across the nation," he said. "Regulators across the U.S. are dealing with the impacts of climate change."

On the Front Lines: Agents React

It's not just regulators, carriers and homeowners who are feeling things.

Agents tasked with helping their clients find insurance coverage are feeling pinched between those clients facing paying higher rates or accepting lower limits and carriers who aren't giving them much wiggle room.

"I'm hearing from agents every week, sometimes every day," said Stephen L. Young, senior vice president and general counsel at the Independent Insurance Agents & Brokers of California.

Young and his IIABCal team have appeared to tell their tale in front of numerous Assembly and Senate Insurance Committee hearings in recent years, and they have been talking with regulators and insurers on behalf of their members, pushing for changes in regulations they believe will help address some problems now so noticeably arising.

One of those agents Young hears from often is Jeff Okrepkie, a producer at George Petersen Insurance Agency in Santa Rosa in Sonoma County. Okrepkie deals with mostly small to midsize businesses, many of which are facing rates and attitudes from carriers that are unprecedented in his 15 years in the business. The market conditions that have developed in the last two years have changed the way he does business each day.

"Commercial property is the worst it's ever been," he said. "I have yet to run into somebody that they've been though a harder time with property insurance."

He started seeing the changes "a few years back with a batch of nonrenewals," and the way he and others at his firm dealt with this was to take those policies in bulk to other carriers with hopes of a good fix. The willing carriers they found were offering lower limits and less coverage, forcing them to "mix and match" coverages from multiple carriers to get clients properly covered.

Just two years later, the "mix and match" solution is starting to look enviable.

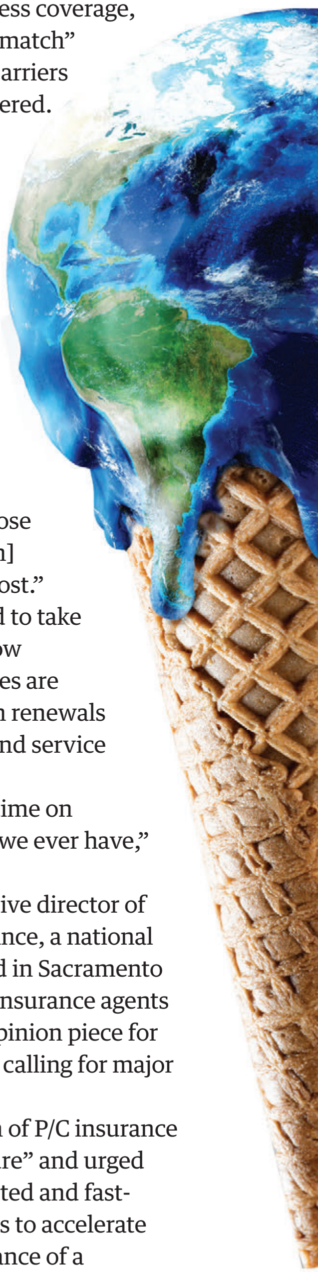
"Now we're getting nonrenewals from multiple carriers, and we're having to find solutions for multiple clients," he said, adding that some of his clients are taking lower limits being offered, "or they chose to go uninsured in [certain] locations because of the cost."

Handling renewals used to take far less bandwidth, but now Okrepkie and his colleagues are spending far more time on renewals than working to bring in and service new business.

"We're spending more time on renewals these days than we ever have," he said.

Michael D'Arelli, executive director of the American Agents Alliance, a national association headquartered in Sacramento serving independent P/C insurance agents and brokers, penned an opinion piece for Insurance Journal in June calling for major regulatory reforms.

He called the regulation of P/C insurance in California "an epic failure" and urged the creation of "an expedited and fast-track rate approval process to accelerate the return to some semblance of a



competitive insurance marketplace for consumers."

Since 1962, the group has represented thousands of independent insurance agents in California.

"Never before have we heard from consumers and insurance agents desperate for automobile and homeowners insurance but unable to obtain it because insurance companies are unwilling or unable to provide it," he wrote.

Is Prop 103 'a Jalopy'?

Several potential solutions have been proposed by agents and brokers associations like the American Agents Alliance and IIABCal, as well as the American Property Casualty Insurance Association. They all have at least one thing in common: reforming one of the state's guiding insurance laws, Proposition 103.

Lawmakers, who must respond to growing fears from residents or fear losing their jobs, were on a break until mid-August, and as the new session in the state legislature starts stirring to life, it is still not clear what if anything will come from them. Until recently, reform of the decades-old law, and corresponding insurance regulations, was largely a partisan issue, with past insurance regulators and most Democrats in legislature unwilling to tweak or altogether undo the consumer protections the law affords.

Over the past year, however, the law and how it is being enforced has been questioned by a growing number of lawmakers on both sides who are interested in finding solutions as carriers sour on the state.

This change in attitude became apparent in a Senate Insurance Committee hearing in May to address the lack of affordable insurance options for homeowners in wildfire-prone areas during which both Democrat and Republican committee members spoke with urgency about dealing with the growing problem.

One takeaway from that hearing was that both sides have numerous hard questions about Prop 103, which was passed by California voters in 1988. Prop 103 requires the California Department of Insurance to give prior approval before insurers can change P/C insurance rates, and it established factors that can be used in ratemaking. It also authorized an intervention process in setting insurance rates, enabling intervenors to recover fees and expenses under certain circumstances.

A nearly 10-year-old report from the Consumer Federation of America showed Prop 103 saved California drivers more than $100 billion by 25 years after its passage, with drivers spending 0.3 percent less on auto insurance in 2010 than in 1989.

Its detractors say the intervenor process can slow down rate requests, delaying necessary rate hikes that carriers need to reflect current risks and incoming claims, and that it enriches intervenors—namely the group Consumer Watchdog and its founder, Harvey Rosenfield, who authored Prop 103. Consumer Watchdog is often an intervenor in hearings in which that process gets triggered.

In the May committee meeting, legislators hit Rosenfield with critical questions. Over the years, that's not unprecedented. But those questions usually come from the insurance industry and Republican lawmakers.

Committee Chair Susan Rubio, D-Baldwin Park, pointed out during the hearing that rate increase requests involving intervenors can sometimes take two years.

Rubio and all committee members who commented at the hearing were reached out to for current comments for this article. None were immediately available for comment during the legislative break.

During the hearing, state Sen. Bill Dodd, D-Napa, expressed concern that rates carriers are currently getting may not be enough to reflect the increased risks.

"If we don't change conditions on the ground, we lose—and we lose big."

Frank Frievalt, California Polytechnic State University-San Luis Obispo

State Sen. Roger Niello, R-Fair Oaks, didn't hold back on his feelings about Prop 103. He questioned the value of adhering to an aging law, calling the decades around the time Prop 103 passed and was implemented a "very, very different time."

"It could be that Prop 103 is well-tailored to what existed in the early 1980s and mid-90s but perhaps not quite so well-suited to today," he said.

Niello latched onto a used car analogy tossed out earlier in the meeting to describe the law today: "It may now be an absolute jalopy."

State Sen. Marie Alvarado-Gil, D-Jackson, questioned the intervenor process, asking why California is the only state that allows outside agencies to intervene in P/C ratemaking. "Why would the insurance industry in California want to do business in the state if we are the only state that makes it this difficult for them to do their business?" she said.

Rosenfield, on hand at the committee hearing to defend and explain the value of Prop 103, said those calling out Prop 103 as a financial obstacle, including some insurers reducing California business, aren't actually in any financial distress. In fact, they are prospering, he said.

He pointed to $12.1 billion in subrogation paid out for wildfire losses in lawsuits to insurers by utility companies in the last few years. The California Department of Insurance couldn't confirm his figure, but it may not be far off. Pacific Gas & Electric (PG&E) announced it had reached an $11 billion settlement with insurers for claims stemming from the 2017 wildfires in northern California and the 2018 Camp

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Fire. Other utilities also have announced large settlements with insurers over California wildfires.

Beyond those payments, California homeowners insurance carriers took in $64.9 billion in premiums more than they paid out in claims from 1991 to 2021, according to Rosenfield, who got his figures from the National Association of Insurance Commissioners Report on Profitability by Line by State in 2021.

Asked about Rosenfield's figures on this point, a CDI spokesman said that under California's rate formula, insurers are allowed to include an allowance for profit and expenses (known as an efficiency standard). Profit and expenses differ depending on the line of insurance and type of writer, and Rosenfield's numbers do not account for those costs, according to the spokesman.

Rosenfield also said California homeowners insurers saw a return of 8.8 percent compared with a 6.2 percent national average, citing the same 2021 NAIC report. "They're not in financial trouble," he told Senate insurance committee members.

His defense of the intervenor process was that it saves consumers money and that it doesn't extensively delay the approval process. In fact, he added, homeowners insurers in California are getting 94 percent of their rate request approvals, with an average approval of 10.2 percent. That figure comes from an analysis of data compiled by CDI and published on its website.

(Editor's Note: On earnings conference calls, carrier executives often note that their companies typically file for 6.9 percent rate increases in California, even though they actually need higher jumps. The 6.9 percent requests escape the lengthy intervenor process, which kicks in for reviews of rate filings with indications higher than that threshold. Agents testifying at the Senate hearing offered that same explanation when a senator suggested that Rosenfield's rate approval figures fly in the face of their complaints that carriers can't make money in the state.)

Rosenfield's defense of Prop 103 also centered around the insurance crisis in California in the 1980s when the law was passed, noting a lack of transparency and regulation that existed at the time of a crisis of similar availability and affordability to the one that exists today. In the over 30 years since the law passed, he noted, California has seen the lowest growth in auto insurance premiums nationwide (and $154 billion in savings for motorists alone). That figure comes from a 2019 Consumer Federation of America report in which the national consumer advocacy group compared price changes between 1989 and 2015 to national average auto insurance price changes.

Waiting for Rate Approvals

According to CDI records, intervenor involvement provided in Prop 103 can make rate hearings longer. In homeowners insurance rate hearings from 2015 to 2022, the department's review time has averaged six months. The CDI data shows the average approval time doubled from 160 days to 337 days. However, since the beginning of 2017, only 4 percent of all approved filings have been intervened.

Many people are skeptical of change ever being made to Prop 103. Insurers for decades have attacked the law unsuccessfully through propositions and efforts to convince lawmakers to amend it.

Assembly Member Bill Essayli, R-Riverside, oversees a district in Southern California that encompasses a wide swath of wildland area. Essayli, who is vice chair of the Assembly Insurance Committee, views the intervenor process as Prop 103's top drawback.

"The law firm that wrote it gave them a lot of authority and power to be a check on the insurance commissioner," Essayli said. He was referring to Consumer Watchdog and Rosenfield, an attorney, adding that he views Prop 103 as "permanent job security for one particular law firm."

"That's the biggest problem with the proposition, I think, that needs to be taken away," he said.

What will that take? A lot, in the view of Essayli.

"It's going to take a ballot initiative," he said, adding that the majority Democratic party has shown little interest in serious changes to Prop 103. "Until a legislator puts a bill forward to introduce that as a ballot initiative, it's not a serious proposal."

Ballot initiatives have been tried more than once, and it's expensive to get out the message to voters why a law intended to benefit consumers should be changed, Essayli said.

Young, with IIABCal, has been skeptical in the past of changing Prop 103, too. Now, he said, "There are signs that that's starting to change." Up until the last month or so, issues of high property insurance rates and lack of availability have been felt largely in rural areas, not inner cities where Democratic leaders are often located. As wildfires grow and insurers reduce writing business, the problem looks to spread to increasingly more districts.

Still, Young sees a way to solve some of the state's insurance problems without lawmakers or initiatives. He believes the insurance commissioner has the power to make changes now (described below) and can embrace plans being touted by his group and others that can coexist with Prop 103 if necessary.

That would seem like an easy route, but any step that would seem to favor businesses over consumers is a potential political hot potato.

"He just hasn't had the political courage to actually implement the changes that are required," Young said of Lara.

Safer From Wildfires

Commissioner Lara's new regulation, California Code of Regulations Section 2644.9. Consideration of Mitigation Factors; Wildfire Risk Models, effective Oct. 14, 2022, required those insurers that differentiate property insurance rates based on wildfire risks to submit applications for new or modified rating plans to the department that recognize and reward safety and mitigation efforts.

The applications were due no later than April 12, 2023 (180 days after the effective date of the regulation).

Regulation 2644.9 lists mandatory factors, requiring insurers to take both community-level mitigation designations and property-level mitigation efforts into account in their rating plans.

- Community level-designations are Fire Risk Reduction Community (from the Board of Forestry) and Firewise USA Site ("In Good Standing" status).
- Protection-level mitigation efforts include measures addressing the immediate surroundings of a property and building hardening measures.
- Immediate surroundings protections include clearing vegetation, debris, mulch, stored combustible materials, moveable combustible objects located within five feet of the property; removal of combustible sheds and outbuildings from the immediate surroundings of the property to at least 30 feet; defensible space compliance, including trimming trees, removal of brush and debris from yard; and compliance with state law and local ordinances.
- Building structure protections include Class-A Fire rated roof; enclosed eaves; ember and fire-resistant vents; multi-pane windows; at least six inchers of noncombustible vertical clearance at the bottom of the exterior building surface.
- Optionally, the regulation also allowed insurers to consider other wildfire risk mitigation measures (fuel, slope, access, aspect, structural characteristics, wind).

The regulation also sets forth time frames in which insurers are required to notify renewing policyholders and applicants for insurance—in writing—of wildfire risk scores or classifications used to create rate differentials or surcharges to their premiums.

The FAIR Plan in late July announced it will reward homeowners for mitigation efforts through Safer From Wildfire discounts, effective Aug. 23. CM

Changes Required

One response to keeping insurance business in the state has been to call for the use of catastrophe modeling that takes ongoing and future changes to wildfire risk into account, rather than relying on decades of historical loss experience. The inclusion of reinsurance costs in rate indications is another idea being pushed by carriers and agents in California.

The IIABCal's Plan to Restore the California Property Insurance Market proposal calls for the insurance commissioner to issue emergency regulations to permit admitted insurance companies to use catastrophe models "to project expected loss and defense and cost containment expense for wildfire risks in residential property insurance and commercial property insurance covering property located in this state." The proposal would require any admitted insurer using the models to provide information on any model used to the commissioner.

The agents' proposal calls for regulations to permit admitted insurers to include the net cost of reinsurance specific to wildfire risks in rates for residential and commercial property insurance in the state. It mandates that prior approval filings disclose whether catastrophe models "were used to calculate the net cost of reinsurance, including to calculate the expected ceded losses and defense and cost containment expenses to reinsurers."

Rosenfield during the Senate Insurance Committee meeting said he believes that allowing the reinsurance costs to factor into rates would push them up by "40 to 50

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percent immediately."

He also called out the models proposed as using "blackbox algorithms" because the algorithms are typically deemed proprietary. In an interview for this article, Rosenfield noted that Prop 103 requires rating information to be made public, and that while plans being put forward by the industry outline steps to make some of that information public, that information does not include the algorithms used in modeling.

"The insurance companies don't want to make it public," he said.

If they have to disclose everything in the models? "It would work," he said.

Lara and the CDI may be more open to letting modeling be used in ratemaking than past commissioners and their staffs. One indication is the fact that CDI scheduled the July 13 workshop focused on exploring insurers' use of risk assessment tools. The stated goal of the workshop was to "protect consumers and address climate-intensified wildfire risks in California."

Rosenfield believes the commissioner will likely go along with enabling modeling to be used.

"I think he is. We'll soon find out," Rosenfield said. "I think he's under enormous pressure."

Soller said there will be a follow-up workshop to hear about modeling and other solutions later in the year.

Asked which way the commissioner is leaning—allow modeling ratemaking or not—he at least indicated no doors have been shut on that.

"We're continuing to evaluate risk assessment tools being used by insurance companies, and that includes catastrophe modeling," Soller said.

Asked about whether reinsurance costs could be used, Soller sounded less "door open" than in his answer to the modeling question.

"The reason the department hasn't allowed it is we do not regulate reinsurance costs, which are affected by global catastrophes," he said. He declined to say more.

An Underutilized Tool: Mitigation

Frank Frievalt, who recently retired as fire chief of Mammoth Lakes, sees other solutions to a growing insurance problem. Frievalt, who now serves as director of Wildland-Urban Interface Fire Institute College of Agriculture, Food, and Environmental Science at California Polytechnic State University-San Luis Obispo, started to notice changes in fire behavior and the size of damages from raging wildfires in 2016. He believes mitigation is an underrated and underutilized tool.

Mitigation at the parcel level and community-wide mitigation can reduce the damage from wildfires and ultimately keep carriers from fleeing a riskier state, he said.

Frievalt's solution, which mirrors the increased home hardening and mitigation that fire experts across the state have been calling to be made for years, has three elements:

1. Follow evidence-based mitigation efforts that are effective. Adjustments from the top down won't help if effective mitigations aren't made on the ground. "This is something we can't suppress our way out of, and we can't market-price our way out of—only mitigate our way out of," he said.
2. Deal with fire pathways at three levels: vegetation to vegetation; vegetation to structure; structure to structure.
3. Make these mitigations highly visible to actuaries in reinsurance and insurance markets to build trust in those mitigation efforts. "If we don't change conditions on the ground, we lose—and we lose big," Frievalt said. CM

Insurers Have Their Say

California's growing availability crisis is poised to get worse unless changes to ratemaking beyond the introduction of forward-looking catastrophe modeling take hold.

Carrier executives delivered that message at a July 13 workshop during which the California Department of Insurance sought public input on technical and legal questions surrounding the use of catastrophe models for pricing wildfire risks.

Parr Schoolman, chief risk officer of Allstate Property and Liability, instead advocated actions to speed up rate filing approvals and to allow insurers to include the costs of reinsurance in their rate indications. He reported that the carrier's most recent home filing took 773 days to approve.

"Without pricing enhancements, Allstate will remain closed to new business and will evaluate additional nonrenewals or the full withdrawal of property lines from the California market," he stated. "Allstate would prefer to material[ly] re-enter the property market by offering new policies to the vast majority of consumers. We'd expect we'd be able to target at least 90 percent of the available market in terms of availability, with the inclusion of wildfire catastrophe modeling and reinsurance costs being allowed in the setting of premiums."

Ryan Vigus, executive vice president of Personal Lines at CSAA Insurance Group, a AAA insurer, gave examples of instances when CSAA filed price indications using a simple catastrophe model based on at least 20 years of historical actual experience—the method currently required in the state—only to see cat loads reduced by $10 million and $20 million during the rate approval process.

"Adding new allowable methodologies will not be useful if they're artificially suppressed in the rate approval process like current methodologies are today," Vigus said.

Read more about the hearing in the article, "Barring Change, Allstate May Exit California Property Market Completely," available exclusively on *Carrier Management's* website. CM

A Community-Based Solution: How Actuaries and Fire Chiefs Can Tackle WUI Risk Together

Nancy Watkins is a Principal and Consulting Actuary with Milliman and chairs the Milliman Climate Resilience Initiative. Reach her at nancy.watkins@milliman.com

Frank Frievalt is Director of the WUI Fire Institute at Cal-Poly San Luis Obispo and former Mammoth Fire Chief. Reach him at ffrieval@calpoly.edu

Dave Winnacker is the Fire Chief of the Moraga-Orinda Fire District and a Hoover Institution Veteran Fellow at Stanford University. Reach him at dwinnacker@mofd.org

Executive Summary: Nancy Watkins, Frank Frievalt and Dave Winnacker are leaders of a strategic alliance formed to address wildfire risk to communities in the wildland-urban interface (WUI).

In this Q&A-style article, Watkins, who is a consulting actuary, interviews Frievalt and Winnacker, who are experienced as fire chiefs in California, about their views on what insurance actuaries and insurers should know about wildfire risk today, how they can work with fire professionals and other stakeholders to navigate insurance market disruptions and to drive down wildfire risk in the WUI.

By Nancy Watkins
Frank Frievalt and Dave Winnacker interviewed

Why is wildfire risk such a challenging area for insurers and communities?

As fire chiefs, we are regularly asked about the increasing challenges our residents experience when seeking insurance in areas with wildfire risk. As we started digging into the question of how the insurance industry views risk, we realized that our communities are getting very different messages from the fire service, insurers and policymakers.

The confusion, uncertainty and conflict surrounding wildfire risk to communities is an artifact of applying trusted legacy strategies beyond their ability to predict outcomes in the WUI.

The gap between actual WUI risk on the ground and legacy risk management strategies has created a condition of insurance market arrhythmia and public policy fibrillation. Despite widespread agreement that the status quo is unsustainable, the lack of a cohesive strategy is creating erratic and at times desperate activity. While there is a great deal of well-intentioned activity in this space, it is failing to produce an effective heartbeat of market and policy practices.

Due to fragmentation of the data environment and lack of an organizing system, much of the current effort being directed toward this space results in "level of effort" metrics disassociated from outcomes. Mitigations can only be linked to outcomes when their "level of efficacy" is established and when the presence or

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absence of these measures can be reliably known.

Why is the WUI so important in the insurance dialogue?

The insurance industry is responding to significant increases in conflagration levels of property loss, defined by structure-to-structure fire spread, most of which have occurred in the past decade.

WUI conflagrations result from the intersection of three interrelated but distinct fire spread pathways: vegetation-to-vegetation, vegetation-to-structure and structure-to-structure. Conflagrations are a unique situation because the insured assets (structures) also represent risk to surrounding assets. Once structure-to-structure separation distances fall below 70 linear feet, buildings themselves become the primary fuel type carrying fire. At this point, the fire ceases being a wildfire, dominated by vegetative fuels, and transitions into a structure-to-structure conflagration of much higher intensity.

What Is the WUI?

The WUI is the zone of transition between unoccupied land and human development. It is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels, according to the U.S. Fire Administration (an entity of the U.S. Department of Homeland Security's Federal Emergency Management Agency).

Basically, it's the area where vegetative fuels and the built environment meet.

How did we get here?

Current conditions for conflagration are the result of three incremental changes:

- Accumulation of vegetative fuel since the early 1900s, due in part to the industrialization of wildland fire fighting and policies such as the U.S. Forest Service "10 a.m. policy" that resulted in the exclusion of wildfire from fire-dependent landscapes.
- The widespread construction of homes in the WUI through rural development.
- A climate change-driven increase in the number of days with weather conditions conducive to large wildfire development.

As a result, we have accrued a significant buildup of wildfire risk that manifests through increasing annual wildfire losses as landscapes seek to return to balance.

In fire-dependent landscapes, such as the Western U.S., there are no long-term, financially sustainable fuel-reduction strategies that do not include some degree of managed fire. Indeed, our ecosystems need more frequent but less intense wildfire to restore them to balance, and simply wishing for a fire-free future is not an option.

Strategies relying on fire exclusion through fire suppression alone are structurally incapable of success.

What got you interested in working with the actuarial community?

Actuaries are an essential and unique link between wildfire risk-relevant facts on the ground, the accurate pricing of risk and the manner in which insurance markets communicate this risk to residents in fire-prone areas. Without intervention in the form of effective parcel-level and community-level mitigation, reliable and affordable risk transfer through the insurance market is in real peril.

Only a clear link between the factual presence or absence of effective mitigations in the WUI, at actuarially significant levels, will reduce risk, limit losses and set conditions for the return of a sustainable insurance market.

For a number of reasons, we believe that wildfire risk has been historically underpriced by the insurance market, contributing to a pattern of accrued risk in WUI communities from decades of undervaluation. A general strategy to correct this situation will require a reconciliation of existing rates to match actual conditions on the ground, sustained with ongoing and accurate future updates. Presently this is not realistic, because carriers cannot know the actual risk to individual properties they insure without knowing the risk represented by conditions on adjacent properties, which are almost certainly insured by a competitor. There are roughly 44 million properties in the western U.S. within high-fire-hazard areas, making this a daunting task.

Further, in the absence of meaningful mitigations to reduce wildfire losses, accurate pricing of risk would rapidly make many policies unaffordable.

Strategies relying on insurance pricing alone are structurally incapable of success.

What about the role of state regulators in helping insurance markets?

Regulation, in and of itself, does not provide an essential risk-transfer service; it provides oversight of those services.

Although residual markets of last resort such as FAIR Plans are an extension of regulation, they rely almost exclusively on assessments from admitted carriers to provide capacity and cover losses. In the

absence of a robust private insurance market with access to global reinsurance capacity, these plans are not fiscally sustainable without significant risk transfer to taxpayers.

As fire practitioners, we have observed that regulation that artificially suppresses insurance premiums and thereby disrupts risk signals to communities has led to a misunderstanding of wildfire risk. While well intentioned, this approach has resulted in a lack of urgency in many WUI communities to take substantive measures to reduce their risk, thus increasing the threat of conflagrations destroying structures, lives and critical infrastructure. It also has led to reduced availability of homeowners insurance options.

Further, while insurers and reinsurers theoretically can reset portfolios and manage wildfire risk through annual renewal and nonrenewal decisions, the lending industries have made 15- or 30-year commitments from which they cannot easily reset. Builders and developers face similar time horizons and need some certainty of being able to secure insurance in order to supply much-needed housing.

Strategies relying on regulation alone are structurally incapable of success.

What is a proposed solution?

To extend beyond suppression, pricing and regulation approaches, we must now add evidence-based mitigations that have actuarially significant value. The unique nature of conflagration in the WUI requires a purpose-built system to unlock the value of group action and actuarial analysis. To meet this need, we propose the "Wildland-Urban Interface Fire Pathway Disruption System" (WFPDS). WFPDS provides the recommendations required to systemically disrupt the three fire pathways leading to conflagration through a continuous improvement cycle of risk visualization, mitigation optimization and verification.

This system enables a comprehensive understanding of community-level risk by focusing on:

- Speed-based vegetation-to-vegetation fire pathways approaching a community.
- Optimized fuel treatments to slow a fire's spread rate to the transfer points entering a community.
- Mitigation data collection and management via an accessible WUI data commons.
- Parcel-level mitigation information aggregated into multiple community-level views, creating a landscape understanding of the potential for vegetation-to-structure pathways.
- Regional firefighting resource response times, command relationships and capability, creating an understanding of active measures that will be taken to disrupt the structure-to-structure pathway.

(The WFPDS was jointly developed by the authors and Dr. Hussam Mahmoud, professor, Civil and Environmental Engineering, Colorado State University.)

Prioritized mitigations include: proven, science-based measures to physically disrupt each of the pathways through work to reduce the horizontal and vertical continuity of vegetation within about a half-mile of the community; efforts to reduce receptive vegetative fuel beds and continuous combustible vegetation within 100 feet of structures; and complementary measures to increase the presence of home-hardening retrofits.

All of these efforts are paired with verification through objective reporting, utilizing available technology to inform a continuous improvement system. Over time, this system will provide the data necessary to iteratively refine the evidence-based efficacy of mitigations and their valuation. This data will then be used to refine and update numerous critical elements including:

- Heat transfer science.
- Modeling of the three fire pathways.
- Efficacy of mitigations and decay interval.
- Actuarial valuation of mitigations and average annual losses avoided, for cost-benefit analysis.
- Data integration to enhance fire suppression responses.
- Post-fire reconstruction and mitigation efficacy analysis.
- Effective building codes, land use and fire protection policies that promote resilience in the WUI.
- Understanding of barriers to mitigation.
- Support for mitigation adoption and maintenance.

What Time Is It?

In 1935, the Forest Service established the so-called 10 a.m. policy, which decreed that every fire should be suppressed by 10 a.m. the day following its initial report. Other federal land management agencies quickly followed suit and joined the campaign to eliminate fire from the landscape.

Source: Read more about it on the Forest History Society website *at https://foresthistory.org/research-explore/us-forest-service-history/policy-and-law/fire-u-s-forest-service/u-s-forest-service-fire-suppression/*

Any last messages for actuaries?

While the participants in our current insurance and regulatory system recognize the status quo is unsustainable, so far none have achieved a comprehensive path to a sustainable alternative that will demonstrably reduce wildfire risk and stabilize insurance markets in the WUI. In this area, actuaries can provide the link between evidence-based mitigation presence/absence data, and the pricing of residual risk that will enable the self-sustaining insurance markets our communities require.

Additionally, this actuarial analysis will provide valuable information about how to optimize and prioritize the use of public and private funds toward efficacious mitigation projects.

We have a limited window to act while our tottering legacy systems are still standing, and it is critical that fire service, industry, government and community leaders have a shared confidence that wildfire risk can be measured and managed. With that confidence, we can move forward in pragmatic alignment around the realities of fire science and the known risk reduction measures which can limit wildfire loss in the WUI. CM

California Wildfires Dwindle as Premiums Surge

Executive Summary: As carriers pull back insurance for new homes and businesses in the Golden State, property risk analytics tools are changing the understanding of wildfire damage risks.

Here, insurance journalist Russ Banham talks to ZestyAI Co-Founders Attila Toth and Kumar Dhuvur about wildfire risk scores available from the InsurTech. Banham also gets an assessment of the wildfire risk exposure on his own California home—and advice from Toth about measures he can take to lower it.

By Russ Banham

In their 1999 paean to California, the Red Hot Chili Peppers sang that "Destruction leads to a very rough road, but it also breeds creation." The rock band was referring to earthquakes and tidal waves, but in the intervening years wildfires have been the destructive force in California, typified most tragically by the 2017 Camp Fire in Paradise that consumed nearly 19,000 structures and caused 85 fatalities.

The catastrophic risk of wildfires recently impelled two of the five largest insurers in the state to stop writing new property insurance policies for homeowners and businesses, and one of the top five to cap the number of policies it will write. Wildfire risks also have bred creation, evident in more innovative ways to understand wildfire property risks.

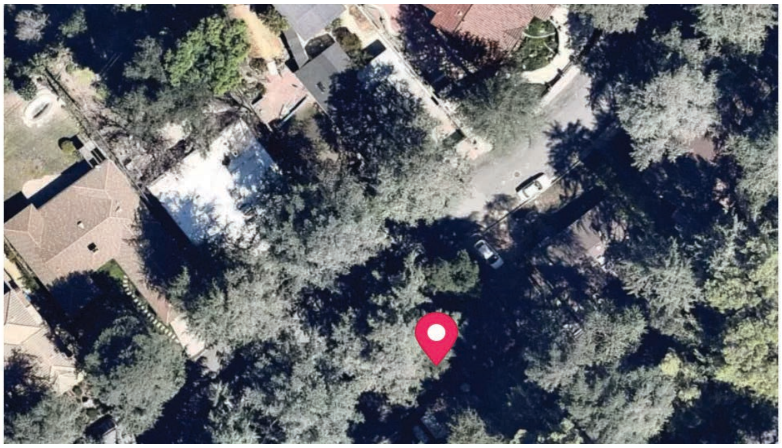
A case in point is ZestyAI, an InsurTech that uses aerial imagery and AI to model the vulnerability of structures on a building-by-building basis. By offering its data-driven insights to insurance carriers, the information can then be passed on to policyholders to reduce their homes' vulnerability to fire damage and destruction. The mitigations may even create more competition in the fading insurance market, possibly reducing the high cost of insurance for many homeowners and businesses.

State Farm was the first carrier to announce in late May that it had stopped accepting applications for property and casualty insurance, followed about a week later by Allstate. In July, Farmers put a cap on new policies. In their decisions, the insurers cited inflation, rising rebuilding costs, reinsurance capacity and rapidly rising catastrophe exposures. State Farm recently asked the California Department of Insurance to approve an average 28.1 percent increase in insurance rates for the homeowners it continues to insure; Allstate filed for a 39.6 percent increase.

In terms of rising wildfire exposures, the timing of the carriers' announcements was incongruous with recent events. From Dec. 31, 2022, through March 29, 2023, rainfall from a record 13 atmospheric rivers poured more than 78 trillion gallons of water on the state, turning arid landscapes across Southern California into picture postcards of Ireland. The prolonged drought that contributed to recent wildfires was declared over in all but 8.7 percent of the state. Reservoirs were filled to full or near capacity, and the snowpack in the Sierra Nevada was two to almost three times above average.

In April, electronic readings from 130 snow sensors placed throughout the state by California's Department of Water Resources (DWR) indicated that the aggregate snowpack's snow water equivalent was 61.1 inches (237 percent of average)—the highest statewide summary since 1952. Snow water equivalent is the amount of water in a snowpack and is a key component of DWR's water supply.

All that moisture has reduced the prospect of wildfires to more historical averages. On Aug. 1, the National Interagency Fire Center projected that "significant fire potential" will be below normal at higher elevations and near normal elsewhere through the summer. The fire season in California progresses from July through October. As of Aug. 1, 3,880 wildfires were recorded by the state's Department of Forestry and Fire Protection, but the destruction was limited to four properties.



A view of the author's house (Photo credit: ZestyAI)

It seemed counterintuitive that the three insurers had pulled back when potential property losses were lower. Insurance trade group representatives attribute their decision to Proposition 103. The 1988 consumer protection regulation prohibits insurers from using so-called "black box" computer models to predict future wildfire risks. Insurers maintain that the models are a way to factor climate change into their underwriting, but consumer advocacy groups claim the models' opacity is a way for insurers to raise rates.

At a July 13 California Department of Insurance hearing, Consumer Watchdog stated that its assessment of private computer models indicated severe flaws: "Models are imprecise and often wildly inconsistent when projecting future insurance losses, [leading] to arbitrary and unfair rates and premiums for Californians." The nonprofit organization proposed that the state develop a public model to predict wildfire risks to "prevent insurance price-gouging."

Meanwhile, concern is growing that other insurers selling property insurance policies to homeowners and businesses may follow the lead of State Farm, Allstate and Farmers. Were this to occur, the volume of policyholders in the last-resort California FAIR Plan, which insures high-risk properties unable to buy insurance, will expand. In 2018, the FAIR Plan insured 126,000 properties; in 2022, the most recent year for publicly available records, the number of insured properties catapulted to 272,000. In a statement, the Fair Plan projected an "impending insurance unavailability crisis."

All About the Structure

Against this grim backdrop, ZestyAI may offer a measure of hope. Since its founding in 2015, the company has racked up a veritable "who's who" of major insurance clients in California, including Farmers, Berkshire Hathaway, Amica Mutual, Cincinnati Financial and even the California Fair Plan, "among many, many others," said Co-Founder Attila Toth. "Our contract with many carriers precludes naming them."

Toth confirmed that the extreme snow and rainfall in California have acutely reduced the risk of wildfire losses, but he said the accumulating vegetation since the beginning of the year will lead to significant losses once drought conditions return. Periodic droughts are common, occurring in 1918-1920, 1928-1935, 1947-1950, 1976-1977, 1987-1992, 2000-2002, 2007-2009, 2012-2016 and 2019-2023.

Lengthier droughts, as measured by the Palmer Drought Severity Index, are associated with the peaks in very large wildfires in the 1920s and recent years. The most recent periodic drought was the driest on record, due to a combination of hot temperatures and low rainfall. The conditions fueled exceptionally large, destructive and more frequent wildfires.

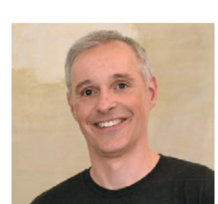
Insurers in California cannot control the effects of climate change that have built up over the decades, much less use black box models predicting the impact of climate change-fueled wildfires on property risks. But they can use AI-driven risk analytics to assess these exposures on a building-by-building basis. According to ZestyAI's recently published 2023 Wildfire Season Report, "Simply estimating wildfire activity doesn't offer a precise forecast of the potential damages [because] the number of fires started, regardless of cause, differs very little from year to year, and the extent of wildfire spread only varies slightly with both fuel and drought."

What does drive wildfire losses for insurance companies?

"The obvious and most significant factor is the loss of structures," the report stated. As Toth put it, "By providing a risk-based score on a building's unique wildfire risk exposures, the most accurate view of potential wildfire losses is available."

"You can't do much about the distance of your home to historical fires, the slope of the parcel or anything else that makes wildfire suppression difficult, but you and your neighbors can change the vegetation density around your homes,"

Attila Toth, ZestyAI



ZestyAI actually drums up two scores, dubbed Level 1 and Level 2, reflecting each structure's wildfire risks. Both scores range from 1 to 10, with 10 being the highest risk. The Level 1 score is based on the likelihood of a property to be in a wildfire event. The information is drawn from historical fires in proximity to the structure, the level of the slope a structure sits on (the flatter the better) and challenges related to area wildfire suppression—i.e., the relative difficulty of performing fire control work, such as access to fire hydrants and local fire response teams.

Level 2 considers vegetation density within 30-100 feet of the outline of a structure, high surrounding vegetation within 0-30 feet of the outline of the structure and the year the building was constructed. ZestyAI's carrier customers include the scores in their underwriting criteria and can pass the information on to agents and brokers to recommend risk mitigation actions to policyholders.

"You can't do much about the distance of your home to historical fires, the slope of the parcel or anything else that makes wildfire suppression difficult, but you and your neighbors can change the vegetation density around your homes," said Toth. "If you do three things—reduce the closeness of vegetation to the roofline, reduce the proximity of vegetation to the sides of the house and upgrade the vents to be ember-resistant—the score can drop from a 9 to a 6 or even a 5."

Digging Into the Data

Toth was born in the small town of Zalaegerszeg, Hungary, a satellite state of the Soviet Union at the time. As a boy, he habitually asked questions in school that did not sit well with his teachers. "I'd ask,

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'Why is the world this way or that way?' and they'd tell me to stop asking questions," he said. "After the Berlin Wall came down, I decided to expand my purview from my close-minded upbringing and came to the U.S. in the mid-1990s. I wanted to discover new things."

Chief among his discoveries was the nascent field of artificial intelligence. After receiving an MBA from Northwestern University's Kellogg School of Management, Toth became a strategy advisor at McKinsey & Company. There he met Kumar Dhuvur, who received his MBA from The Wharton School. "We began to explore AI once we learned about it, not knowing it would become what the Internet had become for business," he said.

Having amassed significant knowledge and experience in AI, data analytics and risk management, the two friends founded ZestyAI as an AI-powered property risk analytics platform. "We endeavored to understand the most important drivers that caused one property to be more vulnerable to a wildfire than other properties in the same area," Dhuvur said.

Using satellite imagery, the founders investigated all the wildfire events occurring in North America over the past 20 years. "We learned that when a wildfire impacts an area, not all properties are impacted; the historical rate of destruction is about 30 percent, meaning that 70 percent escape destruction," said Dhuvur. "This is not a random occurrence."

As they dug further into the satellite data to compare damaged structures to those that escaped destruction, factors like the slope of the land appeared to play a deciding role. "When wildfires spread, they spread uphill because of the embers, whereas a flatter terrain limits the spreading," he explained.

Armed with this data, Toth and Dhuvur modeled the different factors using gradient boosting, a machine learning technique (machine learning is a subset of AI). "The best way to think of gradient boosting is as a series of conditional statements, such as, 'If the property is on a slope,' and 'If the property has a lot of vegetation,' and other 'If' statements; the model then figures out which conditional statement is more important than the others," said Dhuvur. "If the structure is on a significant slope, for example, then the vegetation cover matters less. If it's not on a slope, then the vegetation matters more."

"We learned that when a wildfire impacts an area, not all properties are impacted; the historical rate of destruction is about 30 percent, meaning that 70 percent escape destruction. This is not a random occurrence."

Kumar Dhuvur, ZestyAI

The ability to evaluate the various factors scored by ZestyAI has increased since its founding eight years ago due to higher-resolution imagery. "We began with satellite images only but have since partnered with special purpose aircraft companies to fly over every part of California two to three times a year," said Toth, noting that the planes fly at low altitudes to collect images using high-resolution optics. Low-flying planes offer the highest-resolution imagery, he added.

The company also continues to rely on satellite imagery, including images regularly sent by providers that have launched large constellations of micro-satellites. "There's been exceptional

improvements in resolution quality and almost ubiquitous coverage," he said. "When Kumar and I started the company, our first data feed (of pixels) was a resolution of 3-feet-by-3 feet, then 1-foot-by-1 foot, then 3-inch-by-3-inch, and now it's down to 2-inch-by-2-inch."

Risk Mitigations

I just happen to live with my wife and daughter in La Cañada Flintridge, a leafy suburb in Los Angeles County in the foothills of the San Gabriel Mountains. The risk of a wildfire here is high, forcing us and many of our neighbors into the California FAIR Plan. Since the FAIR Plan is a customer of ZestyAI, I asked Toth if ZestyAI had scored our house. He turned to his computer and within seconds replied affirmatively.

The information was concerning: The Level 1 score was 7 out of 10, and the Level 2 score was 9 out of 10. Factors supporting the Level 1 score included a 1.7-mile distance to a historical wildfire, a 0.09-mile distance to a High Wildfire Suppression Area and, worst of all, a slope of 16.44 degrees. The Level 2 score factored the year in which the house was built (1950), high vegetation density within 30-100 feet of the outline of the house and high surrounding vegetation within 0-30 feet of the outline of the house.

Toth shared a birds-eye image of our house and the homes of our neighbors, which was taken by a low-flying plane in May. The structures underneath the trees are barely visible. Not that I was surprised: La Cañada Flintridge is one of 3,400 Tree Cities USA. Towering cedars and oaks canopy the area, making it a much-desired place to live. Residents have included Kevin Costner, Vince Vaughn, Angela Bassett, Ron Howard and Miley Cyrus. The median price of a house is $2.4 million, with some estates priced at $10 million and more. Our residence is at the other end of the median price range.

Toth advised that we and our neighbors trim the lower branches of trees and remove small shrubs close to our houses. He also provided some good news: The fire station within a mile of our house is certified in fire prevention and suppression techniques. "Go visit the station and ask if they can come by the house to offer some additional advice," he said.

The day before writing the article, the annual bill from the California Fair Plan arrived. It showed a 10 percent increase in the premium, presently a whopping $3,693. I texted our independent insurance agent and mentioned the risk mitigations Toth recommended, asking if we would receive a premium discount once they were performed. She replied, "Those are good maintenance things to do, just for the general upkeep and prevention, but there are no further discounts for it."

Our agent added, "All our carriers including the FAIR Plan have taken increases, and many carriers have pulled out of CA, which has tightened the market even more. I would definitely pay the coverage you have and keep it, as this is the best value and best coverage."

It is what it is. We're doing what Toth advised. In June, the Climate Prediction Center noted the beginnings of El Niño conditions, which typically results in colder winters and abundant rainfall. A greater than 90 percent chance that El Niño will last through early 2024 could mean another year of heavy rainfall in Southern California, local media has declared.

Despite recent heat waves turning smaller shrubs in the foothills a yellowish-brown color, much of the green landscape persists. The garden in our backyard is spectacular, especially the dahlias and gardenias. We have no plans to move. CM

Russ Banham is a Pulitzer-nominated business journalist and best-selling author.

The Care and Feeding of Property-Catastrophe Models

Executive Summary: The key to getting useful model results is working with models that fit specific underwriting needs and making sure the models are regularly updated while employing qualitative analysis (in addition to the models' quantitative analysis), say experts from KCC, Aon and Everest.

By L.S. Howard

A wise statistician once said: "All models are wrong, but some are useful." The key to getting *useful* (accurate) model results is working with models that fit specific underwriting needs and making sure the models are regularly updated while employing qualitative analysis (in addition to the models' quantitative analysis). Those are the opinions of experts interviewed for this article.

Nevertheless, there are common complaints within the insurance industry that model outputs are inaccurate. Modeling experts provide some thoughts about how models are best used—with one CEO suggesting that if model results are inaccurate, it's time to make a change. "It's easier to complain than change," said Karen Clark, chief executive officer of Karen Clark & Co. (KCC).

Users of property-catastrophe models should not assume that the model is 100 percent accurate, according to Dan Dick, global head of Catastrophe Management at Aon, in an interview. "It's just a tool and part of the risk management underwriting solution, and it should strongly inform the underwriters' view in their decision-making."

However, he emphasized, models should not be the only part of the decision-making process.

"Reinsurers and insurers that use models to help support their analysis, but ultimately use underwriting judgment to make decisions, have better outcomes," according to Juan C. Andrade, president and CEO of Everest. "I think companies that solely rely on models are just not going to do as well."

As the fourth-largest reinsurer in the world, Everest Re has "a lot of tools, a lot of technology, a lot of data and analytics, but we also have some very talented underwriters, and at the end of the day, you can't supplant that human judgment," he said.

Expertise, experience, knowledge of the cedent, underwriting practices and knowledge of the geography become very important, particularly with climate change trends, Andrade said in an interview with *Carrier Management*.

As a reinsurance and insurance company, it's important to update models and to continuously update underwriting judgment. "It's really about understanding the shifts that are taking place and then how to react accordingly," he continued.

One Size Does Not Fit All

"It's important to recognize that the models are not a one-size-fits-all solution," Dick said.

For example, a large carrier with a large market share for a particular peril and region could see that the model works fairly well when the law of large numbers kicks in, he explained. "But when you have a much smaller market share, the model can grossly underestimate or overestimate your loss potential."

The models are trying to get the industry number right, which means the carriers with larger market shares may regress closer to the modeled output, but clients with smaller market shares could see wildly different results, he said.

The key for insurers is to have a view of risk, Dick said. "You need to understand how you expect the models to perform. If you're expecting the model to pick the candle factory in Kentucky that got hit by a tornado or the Amazon warehouse in St. Louis, that's very difficult," he said. "If you have a large, diverse book or a large, well-spread book, the model's going to normalize out a little more."

On the quantitative side, the models do a great job, he said, noting that underwriters need to hone their qualitative analysis as well—by considering the following questions: How much do you agree with the model? How much do you adjust it to your view of risk? How do you think your portfolio's going to perform when the event occurs?

For years, underwriters have failed to realize that the models are not necessarily tuned down to an individual carrier's book, line of business and policy form, Dick explained. "Models are a macro fit for the industry. Modeling firms don't build 115 versions of their U.S. model; they build one version and expect it to fit dozens or hundreds of different perspectives."

Dick said most of the industry's complaints about models occur after a natural disaster that is more extreme than the model had predicted, and the event hits much further up on their loss exceedance probability curves or the model indicates that the event should have had a lower probability.

Model accuracy is also based on the information that is entered, "so if a company is not getting appropriate insurance-to-value, or if they're paying out roof claims for more than the historical claims levels, you're going to see a disconnect," Dick said. (See related article on reinsurers in the Florida market, p. 51.)

Another consideration is the fact that loss estimates are typically a very small percentage of the total economic value exposed. If a model misses by 20 percent, it is probably because there is much more value exposed, Dick explained.

People are surprised about models' range of uncertainty, which is not a perfect distribution, he said. "The range of uncertainty is such that if there is any uncertainty in the mean result, it's typically going to be a higher loss than was actually predicted."

"Models are a macro fit for the industry. Modeling firms don't build 115 versions of their U.S. model; they build one version and expect it to fit dozens or hundreds of different perspectives."

Dan Dick, Aon

Modeling for Severe Convective Storms

While modeling firms do a good job of developing models based on historical experience for hurricanes and earthquakes, with some extreme events caused by severe convective storms (SCS) and flooding, accuracy is more difficult, Dick said.

He cited the example of the recent flooding in Vermont, which was considered a one-in-a-thousand-year event, but Hurricane Irene in 2011, which hit the same area, also caused massive flooding. As a result, the frequency of these extreme events is somewhat subjective, Dick said.

A big problem with modeling SCS, he said, is that some of the models have not been updated in a decade. "If you're looking at 30 years of data and you haven't updated your model in 10 years, you're looking at a much different population footprint, which causes model-misses."

In addition, Dick added, some vendors are using data from the most recent Intergovernmental Panel on Climate Change (IPCC). The IPCC data, released in 2022, actually used 30 years of data leading up to 2014, "so if you're using that for your view on climate impact, you're already out of date."

When KCC was launched in 2007, Clark said, the biggest complaint she heard from reinsurers was that the legacy models for SCS, winter storm and frequency perils (also known as secondary perils) were inaccurate. She quickly realized that her new company needed a different approach. (Clark launched AIR Worldwide in 1987, which was purchased in 2002 by Insurance Services Office, now a subsidiary of Verisk Analytics, and rebranded as Verisk.)

While other modelers treat SCS like hurricanes based on historical data, KCC takes a different approach, using physical modeling techniques and high-resolution atmospheric data. Along with the traditional stochastic catalogs providing exceedance probability (EP) curves, the KCC models provide real-time information on claims for individual insurers.

Frequency perils are a lot harder to model than hurricanes, which is why KCC developed the ability to validate models in real time.

Real-Time Model Validation

Clark said that KCC employs an advanced scientific technique called numerical weather prediction, which uses radar data and satellite data to create hail and tornado wind intensity footprints in real time.

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Clients are able to access the data every day to see where their hail and wind claims are going to be and are able to continuously validate the models, commented Clark.

Loss Trends for Severe Convective Storms

By L.S. Howard

Loss trends for severe convective storms (SCS) have increased over the past 15 years and even more during the past five years, according to Dan Dick, global head of Catastrophe Management at Aon.

"What's interesting about these trends is when you start to tease out what's driving the increase in claims, you realize that overall frequency has not changed that dramatically. It's not as if we're getting more events," he said. He explained that about 80 percent of that increase is coming from exposure growth as geographic areas become more concentrated with buildings and populations and as values rise significantly.

U.S. hurricanes over the last 30 years through year-end 2022 have cost insurers roughly $555 billion (trended to 2023 dollars). "If I calculate just severe convective storms, which includes tornadoes, hailstorms and straight-line wind events, the trended loss over the same period through the first half of 2023 cost insurers $526 billion," Dick continued.

"The valuation trend and the concentration trend has jumped dramatically over the last 10-15 years, which is driving up some of these losses." These trends, he said, have not necessarily been captured in the models, which often look at a 30-year trended average and do not look at the last five to 10 years—just because of what goes into adjusting a model and keeping a model current. CM

Every day clients can "see what our model says on their loss, and then weeks or months later, they can compare it to their actual losses."

Clark questioned how insurers would be able to trust models for hypothetical events if they are inaccurate and don't match losses on real events.

Update Models

Clark emphasized that the industry is slowly starting to shift away from older models to newer, more advanced models. Older models, she added, do not provide real-time calculations for SCS nor high-resolution intensity footprints. "We get continuous feedback with our real-time loss estimates, so we can make sure that our models are becoming more and more accurate."

If companies want more accurate models, they need to embrace change, Clark said. "I have a new phrase I've started to use: 'It's easier to complain than to change.'"

Reinsurers and brokers, in particular, love to complain about models, she added. "The solution is not to get rid of cat models. You just have to upgrade to better models."

"You can't keep using the same models for 30 years, the same methodology without any advancements, and think you're going to keep up with changes that are happening."

Reinsurers often say that they make their own adjustments, add their own factors and develop their own models, Clark said. "We could ask them, 'How well did that work out? Why are you raising reinsurance prices by 80-100 hundred percent in the past couple years?' Obviously, they were not pricing the product correctly. It's really time to upgrade the cat models."

Aon's Impact Forecasting also forecasts in real time, which produces a relatively narrow range of meaningful numbers for a natural catastrophe based on real-time weather forecasts, rather than using a predefined stochastic catalog of similar events—as some model vendors do—which "results in bad forecasting," said Adam Podlaha, Aon's head of Impact Forecasting. "If you use real-weather forecasting, as we are doing, you will produce a range which is meaningful, not too wide, and it's more valuable than one answer."

> "The solution is not to get rid of cat models. You just have to upgrade to better models. You can't keep using the same models for 30 years, the same methodology without any advancements, and think you're going to keep up with changes that are happening."
>
> **Karen Clark, Karen Clark & Co.**

As proof of Impact Forecasting's model accuracy, Dick noted that the estimate for Hurricane Ian, which was issued on Oct. 2, 2023, has not been adjusted since that date, which shows the power of having real-time modeling capability.

Impact Forecasting maps out every building in the United States, Dick said, so when these events occur on an industry threshold, we're able to quickly overlay those events against our industry database. "And that's why we're able to release some of these industry views very, very quickly."

"We have a system for U.S. hurricane, European windstorm and Japanese typhoon, where we do loss forecasting. So, a few days before a U.S. hurricane, we actually are able to produce a forecast every six hours," said Podlaha.

Impact Forecasting provides clients with a well-managed range of numbers. "We can produce one number if the user wants one number, but we also can produce a range, and the range will always be better" because it provides more information, he added. CM

Grid-by-Grid:
How One Tech Firm Dissects California Wildfire Risk to Sell Insurance and Reinsurance

Executive Summary: With experiences in clean technology and data delivery for crisis response leading him forward, Nathaniel Manning took his desire to help stop the progression of climate change in a new direction after he became enthralled with the mission of insurance and reinsurance industries. Here, Manning, COO of Kettle, shares the backstory of the company, which uses technology to better understand catastrophic risks—and to sell insurance and reinsurance. He describes the machine learning models and the contributions they can make to solving growing availability and affordability in the California wildfire market.

An online video describing GRIL notes that Kettle's granular data model divides California into 419,000 micro grids, which are each assigned forward-looking views of expected loss. When a wildfire occurs, CALFIRE determines the perimeter of the fire and defines the event; NASA satellite imagery is used to confirm the affected area, establishing exactly which grids were affected by the fire. Using Kettle grids and GRIL models, Kettle determines cedent losses as the product of the TIV and damage ratios in the impacted grids.

By Susanne Sclafane

There is general consensus among insurance and reinsurance underwriters about the safest property risks to accept in the California market, according to the co-founder of a company that uses technology to better understand catastrophic risks.

Nathaniel Manning, chief operating officer of Kettle, which uses its AI models of cat risks—and wildfire risk, in particular—to sell insurance and reinsurance as an MGA, shared his assessment during a recent interview with *Carrier Management* as he described the dynamics of a growing availability and affordability crisis in the state.

Offering rough numbers, Manning said that when he compares a ranking from lowest-to-highest risks from Kettle's wildfire models to similar outputs from older property-catastrophe models, they agree on the bottom 50 percent. "This is what's in the admitted market. It's the downtown areas, low probability of burn."

But historical models and probabilistic property-catastrophe models don't provide clarity to the market on the upper 50 percent. As a result, many insureds are getting nonrenewed, priced dramatically higher or thrown into the E&S market or the FAIR plan, Manning told *Carrier Management*. "You see people getting dropped across the state. We've talked to folks who've had their premiums increased by 11x in a single year," Manning said, referring to the magnitude of rate hikes for HOA insurance.

Admitted carriers, he said, recognize

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that wildfire risk is growing, but they really don't know exactly where it is, referring to State Farm, Allstate and Farmers, among others. In addition, they're capped on how much they can increase rates overall. "And the cap is not anywhere near close to what the actual risk increase is," he said, rationalizing their decision to pause and decline to take new customers.

"The truth is, it is riskier than it used to be due to climate change. We're in the middle of a heat wave across the entire world right now. Heat causes increased fires. You dry everything out. Then it burns. And California particularly gets a lot of wind off the ocean..."

"The big carriers are stuck because the reinsurance prices have all increased a ton" as risks increase. "They really should. It's due...But then the carriers are more regulated so they can't increase as quickly."

'The Climate Changed'

Reinsurers also can't understand the risk well because they're using cat models that haven't captured climate change impacts, Manning suggested as he referenced the often-expressed idea that hundred-year cat events are happening every two or five years. "That is exactly what I'm talking about. The models still say it's a hundred-year flood because they're based on statistical modeling..."

"Actuarial models are built on the law of large numbers, which works well for life insurance or auto crashes. It never worked great for catastrophic events because they are fairly infrequent, high-impact events. But it was the best tool we had. And now due to climate change—it's right there in the words, *the climate changed*—they work even less well than they used to," he said.

Kettle's new approach is to train machine learning models on patterns—to predict when fires will ignite, how they'll spread and the vulnerability of properties. Putting that all together to assign a risk probability on each property, the models show that almost all the damage is going to happen in the top 25 percent riskiest properties—or about 3.5 million of the 14 million across the state. That means Kettle can give capacity providers comfort in writing those ranked between 50 percent and 75 percent on a scale of risky properties.

"The truth is, in the worst year in history, 2017, it was 20,000 properties burned down, which is 0.1 percent of all the properties in the state," Manning said. "That's not making light of 20,000 properties, but it's actually a very small percentage of 14 million, compared to a hurricane that can really affect quite a lot of buildings all at the same time," he said.

Kettle boasts 89.2 percent accuracy in its predictions, according to the company's website. Manning described some model back-testing that Kettle has been able to do on three years' information. About 20,500 properties have burned down in the state. Of those, 98 percent of them—just shy of 20,000—are the areas the model flags as the 25 percent riskiest.

Obsessed With Insurance

While it may seem otherwise, Manning hasn't spent most of his career working in the insurance and reinsurance world like Kettle's co-founder, Andrew Engler, or Kettle Chairman Nigel Mortimer.

Engler, who had an early position as COO of an Allstate agency in Santa Monica, headed up the digital product and machine learning team of Bermuda-based Argo Group before joining Manning to launch Kettle as CEO in 2019.

Mortimer, a past president and EVP for Argo, spent 30 years in the industry in underwriting and product development roles, primarily in London and Bermuda.

But Manning spent the first third of his career in the clean technology sector working on ways to reduce carbon emissions. An impulse to gravitate toward big problems pulled him in the direction of the biggest one of his lifetime—climate change, he said.

"I've always been really drawn to big problems, things that feel like they are really going to affect a billion people or more, [asking] 'How do you get everyone to work together to try to solve for this?'"

Reflecting some more on the path of his career, Manning recalled seeing the film

"An Inconvenient Truth"—a documentary about former U.S. Vice President Al Gore's campaign to educate people about global warming—during the early days of his college career. "It really just blew my mind. I thought, 'Wow, this is happening, and it affects every part of our economy and everything we do. This is going to be a major thing.' I readjusted my class load and major," he said, explaining that he pursued a master's in environmental science and international relations in the hopes of having some part in trying to build consensus around stopping the progression of global warming.

But at some point years later, Manning realized that the time had passed to stop the planet from winding up at the place we are now. He ultimately got pulled in another direction—toward the insurance industry.

"I just got totally obsessed" with insurance, he said, noting that the obsession started to take hold during the second phase of his career, when he was in crisis response.

"I was working with USAID and FEMA on opening up datasets," he said, describing a stint working in the Office of Science and Technology of the Obama White House in 2012 and 2013. "Who do you think might have been really interested

> **“A pattern-based approach to understanding risk vs. the traditional insurance way, which is statistical approach, is going to have a better outcome.”**
>
> **Nathaniel Manning, Kettle**

in the data that we were making available in machine readable formats? It was insurance companies and reinsurance companies,” he said.

“We were doing basically the same thing that NASA and NOAA have done for years,” making information like satellite imagery and weather data available in open APIs. “And some of the folks that love and access that data are insurance companies, or the platforms that use all that information to do modeling” for insurers and reinsurers.

Continued Manning: “Folks working in insurance and reinsurance are really the most incentivized to understand climate change, because they’re really the ones holding the bag. They have the most to lose if all of these disasters increase, as the scientists have told us.”

Insurance is “also this really beautiful thing where we all pool our money together,” he added, giving more evidence of his obsession. “If your house burns down, I’ll put in a dollar and they’ll put in a dollar. We’ll all put in a dollar, and we’ll help you rebuild it, because I know if mine burns down the next year, you’ll do the same and we’ll use this trusted third party to help us do that.”

“That’s what insurance is. It’s this really special thing that we do, and it’s really effective and efficient for the economy.”

A Data and Modeling Problem

Manning’s preoccupation with the world of insurance ultimately led a mutual friend to connect him and Engler. Looking past the noble purpose, the co-founders saw a data and modeling problem for insurers and reinsurers.

“If you have the best models, then you’re going to have the best loss ratios, which lets you have the most competitive prices, which lets you win more contracts and also gives the buyer the best product for the best price,” Manning said. But during the last 10 years, insurer and reinsurer loss ratios and overall returns on equity have deteriorated as multibillion-dollar catastrophes have increased.

If models had been keeping pace with the post-climate change world, insurers and reinsurers would have been able to anticipate what he said is a 3x surge in $1 billion-plus catastrophes—and they would have priced accordingly.

(Editor's Note: In California, admitted insurers are restricted in the types of models they can use for pricing by rules requiring them to use simple cat models based on at least 20 years of historical actual experience for cat adjustments to rates and by rules requiring public disclosure of all information provided to regulators in connection with rate applications.)

“The data availability—it felt like a huge opportunity,” Manning said, going on to cite the “amazing improvement in machine learning” that’s happened at about the same time—over the last 15 years. Leveraging machine learning, “a pattern-based approach to understanding risk vs. the traditional insurance way, which is statistical approach, is going to have a better outcome. That was really the genesis for Kettle,” Manning said.

Seeing Patterns: Genesis and Contagion

“The insurance and reinsurance industries hadn’t really adjusted too much around climate change. And AI, if it was being talked about at all, was sort of a throwaway comment. No one was actually adjusting how they were underwriting... Maybe there was a little AI innovative example they could put in a slide presentation,” he said, summarizing the conditions in which Kettle could make things happen for the good of the industry and consumers by building machine learning models to better understand climate change-exacerbated risks.

Online descriptions of Kettle’s technology refer to swarm neural networks and to two Kettle-specific technologies: a Genesis model and a Contagion model.

“The swarm component basically just means that we have multiple [neural networks] used in an ensemble model... There’s a neural network trained on wind, and there’s another one trained on vegetation moisture index. Then you’re piecing these together,” he said.

(Editor's Note: Online sources, including Amazon Web Services, TechTarget and Wikipedia, define artificial neural networks as systems of hardware and software, or machine learning models, that use interconnected nodes or neurons in a layered structure resembling the operation of neurons in the human brain.)

The Genesis model, he explained, is an

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ignition model. In other words, it is "focused on training how fires start" by picking up patterns from the data that Kettle ingests—predominantly satellite imagery, weather data, real estate data and then some utility information. (According to Kettle's website, the technology is trained on 3 petabytes of data.) "To anthropomorphize what the model is doing, what it's saying is, 'I noticed that 97 percent of fires that start, start when you have a brown dot next to these straight lines of gray dots,'" Manning said. Translation: 97 percent of fires start alongside roads. "It just notices that because we're running millions and millions of simulations training it."

Offering the reason for the pattern, Manning explained that "most fires start alongside roads because that's where electricity lines are and people throw trash out and different things can happen."

"It's taking a pattern-based approach vs. a stochastic [probabilistic] approach," he said, differentiating the technology from the property-catastrophe models that insurers and reinsurers have been relying on since the 1990s.

Continuing to learn patterns, the AI model will notice that if you have a gray line near a big gray splotch, it never turns into one of the 10 fires that caused 99 percent of the damage. "That's because if a fire starts and runs into a Walmart parking lot, it doesn't go anywhere," he said, describing the Contagion component.

Kettle co-founders Nathaniel Manning (left) and Andrew Engler (right)

On the other hand, the Contagion model may pick up higher risk probabilities for a fire turning into a top-10 contagion event if there's 20 miles of brown area east of the road where the fire started—"where you've got lots of forest land and it hasn't rained and the vegetation moisture index is really low, and you've got no other road access so that fire trucks can't really get into it," he said. Manning went on to paint a picture of two hills west of the road—"causing a 50-mile-an-hour wind coming off the coast to turn into a 90-mile-an-hour wind" as it tunnels through the hills, creating "a real hotspot," also noting that fires burn faster uphill than downhill.

"Then, if that fire burns through that 20-square miles really fast and there's a big development right on the other side, that community is a high risk," he said, summarizing the basics of the Genesis and Contagion models. He noted that a building model figures into the mix also, factoring in home hardening efforts and conditions such as brush near the home.

Reinsurance Lens

How do these models differ from other AI predictive models that have been developed in the wildfire space in recent years?

"I would say we start from a reinsurance lens...We're looking at the earth environment and how fires are starting," he said, distinguishing the approaches of new players that are predominantly starting with the insurers' vantage point first.

"When you think about it more from an insurance perspective, if you're just looking at that single house, then what you're looking at [measures like] just how close is the tree to the house" to determine if it's a high risk. "But what matters a lot more is where's the fire starting and how is it going to spread—because if you're in a house in the middle of a giant fire, you're pretty much toast. But if you're a house on the edge of a fire and it's throwing off a bunch of embers, then it does make a big difference whether or not you have closed your vents or have cut trees back," he said.

After running a building index, the last step of Kettle's modeling process is to do "portfolio balancing from the ground up." Manning explained this by starting with the simplified example of a homeowner securing coverage for $1 and sharing the news with his neighbor. When the neighbor asks his agent to buy the same fire coverage, "it hits our API and it comes back with a $2 quote even though the properties are literally exactly the same right next to each other. That's because it's more risky for us to cover two houses on the same street. They're both going to get burned down by the same fire. The second one is going to have to cost more because of that," he said. The model "is live, doing that based upon the balance," he said, going on to describe how the model would also adjust prices downward as the portfolio diversifies. "If we then sold three other properties down in Santa Rosa and two down in Beverly Hills, six months later that $2 price could drop back down to $1.10 or something lower."

What Kettle Offers

Kettle has leveraged its technology to offer a reinsurance product known as a Grid Rated Industry Loss, or GRIL, and two insurance products.

The first insurance product, launched in partnership with Amwins, was an excess wildfire insurance product that kicks in over the California FAIR plan's $3 million coverage for high-value homes in wildfire-prone areas. More recently, as Californians deal with the affordability and availability crisis, Kettle has rolled out a commercial wildfire insurance product, Manning reported.

GRIL, also focused on wildfire, is similar to an index-based product that catastrophe ILS manager Nephila created for wind and earthquake known as County-Weighted Industry Loss, or CWIL. "We divide the whole state into these square kilometers," Manning said, describing GRIL as a parametric product similar to CWIL but using smaller, more high-definition grids—419,000 of them, focused on fire only. "We then put damage ratios and the values into each kilometer based upon the existing [insurance] book. We price it accordingly, saying, 'If fire enters into this square kilometer, we will pay out.'"

Kettle works with insurers to select the square kilometers they want covered.

Capacity providers for GRIL are Everest, Vantage and Ariel, Manning said, noting that a handful of other reinsurers can provide "line boosting." In other words, Kettle has the pen for the trio, but if demand exceeds committed capacity, others are ready to offer more.

Both GRIL and the excess FAIR plan product were launched in 2022. Arch and SiriusPoint were the original capacity providers for the Amwins product, but the program was relaunched for 2023 with PartnerRe providing the coverage.

Asked about Kettle's role in restoring insurance availability in California, Manning said the GRIL reinsurance product can help, alluding to the fact that higher reinsurance costs are among the problems sending admitted carriers packing. The more recent product—a commercial wildfire product with a parametric trigger—may be even more helpful, he said, noting that Kettle has seen growing demand for this since the product launch in March. It's in the E&S market, and it's sold in combination with another carrier that covers claims from all other perils, he said, confirming that demand is coming from communities of garden-style condominiums and golf course groups, for example.

"There are 55,000 HOAs in California, [where] 35 percent of the state lives in an HOA community," he said, noting they range from small HOAs in the city, a condo building, all the way to garden-style communities. Estimating that the latter make up some 40,000-plus properties, he said, "They really are getting hit because [they're] stuck in between." It looks like residential but is commercial.

Read more about Manning and Kettle and a discussion of two other product ideas that didn't get off the drawing board in the related online article, "Evacuation Policies and Cat Strips: Wildfire Insurance and Reinsurance Ideas That Failed." CM

kettle

What's Next for Kettle

Kettle hasn't rolled out a purely residential wildfire insurance product. COO Nathaniel Manning explains that finding a partner to write the other non-fire perils is the tricky part of delivering a residential or commercial offering, although that is more easily accomplished in for commercial E&S.

Another reason to test the waters there is that commercial buyers are a little more insurance-educated. They usually have a CRO and buy at higher price points, he said, noting that they are probably spending hundreds of thousands of dollars on property, and they're more used to the process of assembling different policies for a full package of coverage. "For a regular homeowner that's pretty difficult."

Looking ahead, Kettle aims to offer an all-perils policy instead of a cat carveout, he said, noting that the buildout will start on the commercial side. Kettle is also in the process of launching GRIL and the commercial wildfire product in all lower 48 states. And in late June, Kettle launched a wind GRIL product in partnership with ClimateTech Reask.

Asked about the pricing of the existing California E&S and GRIL products, Manning said that if there are competing policies, Kettle typically wins the deal because it's cheaper. "But a lot of times, it might be the only option in the market.... Or maybe the only other option is the FAIR Plan."

On the reinsurance side, he confirmed that a lot more coverage has come into the market in 2023 vs. 2022 when buyers had no other alternative to fill their towers. "I think all things held equal, most buyers are always going to try to buy a UNL [ultimate net loss] product—a traditional indemnity claims product, instead of an ILW or a parametric product. Those work well in a very hard market," he said. CM

How Lawyers Sank Florida Carriers –
and Target 'Travellers' With SEO

By Susanne Sclafane

A troubling phone exchange reveals a problem for insurance carriers that started in Florida and is expanding beyond the state's borders, according to an actuary who recalled the dialogue at a recent meeting.

Phone Caller: Is this XYZ Insurance Company claims department?

Response: This is the claims department.

Caller: Are you the XYZ Insurance Company claims department?

Response: This is the claims department.

Caller: Are you an employee of XYZ?

Response: We are not XYZ.

Joe Petrelli, president and co-founder of insurance rating agency Demotech, reported the words similar to those he spoke—and what he heard on the other end of the line—when he called a phone number displayed on an Internet-based advertisement showing an insurance company's name next to an 800-number for claims.

The responder wasn't a person from the claims department of the carrier. It wasn't an automaton either. Instead, it was a representative of a law firm, he said, noting that the person on the other end of the line finally did reveal their identity to him.

"They were eventually honest," Petrelli, a member of the Casualty Actuarial Society, told a group of peers gathered at the CAS Seminar on Reinsurance in early June during a session on recent developments in the Florida insurance market and implications of what he repeatedly referred to as "tech-enabled claim instigation" for carriers across the nation. He used the phrase to sum up the misdirected phone call and a variety of

tech-driven activities like litigation marketing and search engine optimization (SEO), as well as the emergence of litigation management platforms for law firms, all of which he believes helped bring about the demise of Florida residential property insurers in recent years. In short, they used technology—opportunistically, but in many cases legally—to bring more plaintiffs to their firms to sue insurance companies.

Litigation funding adds fuel to accelerated lawsuit trends beyond the confluence of tech tools, according to Petrelli, who is also co-founder of 4WARN, a firm that is flagging the risks of tech-enabled claims by offering data-driven analytical insights to carriers. Petrelli and 4WARN Co-Founder Todd Kozikowski believe "opportunists"—law firms and public adjusters using tools like SEO to buy Google keywords related to insurance—are at the root of the litigation crisis that sank Florida-focused residential property insurers to the point of insolvency.

But it's not simply a Florida problem, Petrelli told *Carrier Management* in an email after the CAS meeting. "This is a national issue...The opportunists utilized the disparate, disproportionate litigation levels in Florida as well as claims emanating from catastrophes as camouflage to develop, refine and hew their tools," he wrote.

At the CAS seminar, he reported that Kozikowski's analysis of 600 billion search return pages revealed one law firm diverting 10,000 Google searches intended for a national insurance carrier to a page on the law firm's website inviting searchers to sue the insurer. "They tried 10,000 times—one month, one law firm," he stressed.

"Yes, there's a problem in Florida," where opportunists perfected their craft. But they have "gone national. Every line of business, every state, every company."

The Florida Problem

Petrelli said he and Kozikowski started their research in March of 2022, "when we basically saw that the companies that were built to withstand disparate litigation" were among the insolvencies in Florida. He displayed a slide with the names of six failed Florida carriers as he spoke: St. John's Insurance, Southern Fidelity, Gulfstream Property & Casualty, UPC Insurance, Weston Insurance, and Avatar Property & Casualty Insurance Company.

"I thought of them as Olympic swimmers, and they drowned in the kiddie pool. We wanted to know why," he said, describing his decision to reach out with Kozikowski, a technologist and former executive of a number of tech companies (including InsurTech Clearsurance) to find answers.

"We knew that it couldn't be billboards. It couldn't be door knockers," Petrelli said, referencing a slide that showed a 20-fold increase in new litigations for St. John's

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between 2016 and 2021. "It had to be something else," said the rating agency owner who had a vested interest in the joint mission with Kozikowski since Demotech had rated the failed insurers before they tanked.

(Editor's Note: *Carrier Management* could not exactly reproduce the number of litigations referenced by Demotech for St. John's from 2016-2012, but the pattern of spiking litigations for St. John's and all of the failed carriers is clear by entering their names into Legal Service of Process Reports available online from the Florida Department of Financial Services. *Carrier Management* was able to reproduce similar trends for some national carriers, as well.)

"Despite the FLOIR [Florida Office of Insurance Regulation] documenting disparate, disproportionate levels of litigation in Florida's residential property insurance marketplace from calendar 2016 forward, I viewed the carrier liquidations of 2021, which included American Capital Assurance Corporation, dual-rated at a high level by Demotech and a well-known insurer rating agency, as surprising," Petrelli wrote in a recent article for a Demotech publication (Spring 2023, "The Demotech Difference," p. 14)

The documentation he referred to is an oft-cited analysis of FLOIR and NAIC data by Triple-I finding that nearly 80 percent of all home insurance litigation in the U.S. stems from Florida despite the state accounting for less than 10 percent of all home insurance claims.

The dual ratings that American Capital had were an "A" from Demotech and an "A-minus" from AM Best prior to March 2021.

"[T]hese carriers had adapted to the disparate litigation levels through rate increases, changes in coverage, revisions to business models, enhanced underwriting criteria, capital infusions, etc.," he wrote, describing actions that should have kept the companies afloat.

They didn't.

"We did a post-mortem," Petrelli said during the CAS meeting, presenting the evidence that the accelerated pace of tech-enabled claims was too far out of bounds to be reined in by any of those actions.

Among the proof points, according to 4WARN:

- One public adjuster, a sole proprietor, spending $650,000 a year on Google Ads, resulting in 71 percent of the traffic to the adjuster's website.
- Pay-per-click activity for law firms and adjusting firms surging in conjunction with storm activity. "People were buying company names. People were buying key search words," Petrelli said, showing activity around keywords like names of insurance companies or phrases like "mobile home insurance in Louisiana." When adjusting firms and law firms buy enough to outrank an insurance carrier's claim department, the result is phone calls like the ones described earlier.
- Evidence of tactics like keyword "stuffing," "cloaking" and "redirecting."

In an article on Demotech's website written by Kozikowski and Petrelli, they explain that stuffing refers to filling content with irrelevant keywords to manipulate where they rank in search engine results, while cloaking is the practice of showing different content to users and to search engines that rank webpages. ("The 1990s Are Calling—Your Enterprise Risk Management Process Needs a Serious Upgrade," Spring 2023 edition of "The Demotech Difference.")

Beyond these tactics apparent early in 2022, Kozikowski found active and aggressive marketing in the form of new advertisements and webpages going up on law firm and adjuster websites five and six days before Hurricane Ian ever hit Florida. They were basically coaxing potential claimants to get in line in advance of the storm, Petrelli suggested at the CAS conference as he showed a slide with ads headlined "Hurricane Ian Insurance Lawyer" and "The Best Public Adjuster in Fort Myers."

Beyond Florida

"No one is immune," Petrelli said as he displayed a website photo of a group of business people under the heading "Hartford Insurance Claims." Explained Petrelli, "Those are not Hartford insurance folks. Those are attorneys who want to sue Hartford Insurance. But behind that picture could be the keywords that they've bought."

In addition, 4WARN found evidence that the likes of Cincinnati Insurance and Travelers have been targets. As an example, one slide noted that typing words like "Travelers Insurance Personal Injury Settlement" into Google returns a law firm link as the first search result. (Note: Readers can test this out. *Carrier Management* was able to reproduce that particular Travelers example but did not experience a similar result when typing "Cincinnati Insurance claims" into the search engine in mid-June 2023.)

"The ultimate concern is that carriers are now no longer in control of their claim frequency. And, of course, we all know that the litigated and contested claims actually will wind up costing more than non-litigated claims," Petrelli told the actuaries. The article he wrote for the Demotech website gives a numerical example of the impact assuming a frequency of 5 claims per 100 policies in pricing, while tech-enabled instigators were pushing it up to 6—and the double whammy impact from reinsurers who base their prices on the reality of a 6 percent frequency.

At the seminar, Petrelli showed a bubble graph indicating the top targets of litigation marketing efforts of five law firms, including State Farm, FedEx and GEICO in the biggest bubble for a nationally known personal injury law firm. The smallest bubble, for a national firm that actually represents insurance companies, had life insurance company names tied to its marketing efforts. In the middle of the pack, a Coral Gables, Fla.-based firm is targeting Allstate, Walmart and People's Trust.

"People's Trust, the Florida company, is like 1 percent the size of Allstate and Walmart, yet it represents that large percentage of this company's activity." Petrelli believes the reason the law firm

had its litigation marketing firm zero in on People's Trust ties back to a verdict the firm had against the carrier "that was a surprise to the company because they thought their wording would be effective." In Petrelli's words, the law firm sensed it had exposed "a chink in the armor."

Opportunists Everywhere

"This is what they're doing through search engine optimization. They're attacking your cedents, all lines, all states," he told the reinsurance actuaries gathered at the CAS meeting.

Petrelli and Kozikowski have presented their findings in a similar manner to carriers and regulators outside of Florida. "When we presented our research to the Southeastern Regulators Association at the end of October 2022, [Louisiana] Commissioner Donelon said, 'This is opportunism. I don't see anything illegal. As soon as it's illegal, we'll do something,'" Petrelli reported.

"I thought of them as Olympic swimmers, and they drowned in the kiddie pool. We wanted to know why," said Petrelli, referring to a group of now-insolvent Florida insurers.

In February 2023, the Louisiana Department of Insurance did, in fact, react to illegal activities by the firm McClenny Moseley & Associates, issuing a cease-and-desist order and imposing $2 million in fines against the firm and three of its partners in May, the maximum amount allowed by law. As reported by *Carrier Management's* sister publication, *Claims Journal*, Donelon said that MMA attorneys' own admissions during hearings before federal court judges showed the law firm knowingly attempted to defraud Louisiana insurers—leading insurers to believe it represented homeowners in 856 instances when it represented roofing contractors.

The MMA saga is recounted in over two dozen *Claims Journal* articles, which reveal that MMA filed more than 2,000 hurricane-damage lawsuits over the course of several days in Louisiana, many of which duplicated other filings or contained blatant fact errors (wrong insurer, wrong hurricane or citing damage to properties not in a hurricane's path). One aspect of the story that caught Petrelli's attention was the law firm's admission that it agreed to pay $13.9 million for "pre-screened client leads" generated by a marketing company known as Velawcity, which

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signed up potential clients through a hurricane damage website.

"They went over the line," Petrelli said, referring to thousands of consumers for which the law firm filed suits against insurers even though they were not actual claimants. "But the opportunism part of it is if they stay within the lines, they're going to be OK," he noted.

Offering another example of opportunism, Petrelli reported 4WARN findings of three national law firms that attempted to redirect traffic intended for Travelers' website 17 million times in a single month. "They got 104,000 clicks out of that—a little less than 1 percent," he said. "However, when you annualize it, it's over 1.2 million clicks a year that three law firms get where somebody's trying to reach Travelers."

Petrelli shared that one of his favorite examples of tech-enabled claims instigation uncovered by Kozikowski involved a law firm willing to pay $10 a click for "Travellers" misspelled with two Ls. Why is that worth the price? Petrelli thinks the firm has reasoned that a person not sharp enough to spell Travelers correctly will be easily duped into clicking on its ad instead of a link to the insurer.

Among the articles authored by Claims Journal Editor Jim Sams about the MMA law firm fraud are these:

- Judge Poised to Sanction Law Firm That Filed Hundreds of La. Hurricane Lawsuits (Oct. 27, 2022)
- Transcript Shows Judge Blasted 'Bottom Feeder' Law Firm for Sloppy Mass Filings (Nov. 1, 2022)
- Law Firm That Touted Technology Accused of Fraud, Hits Blockade in La. Courtroom (Dec. 27, 2022)
- Attorney for Insurer Says Law Firm Working With Contractors to Find New Hurricane Claimants (Jan. 25, 2023)
- La. Insurance Commissioner Accuses Hurricane Claim Law Firm of Fraud (Feb. 17, 2023)
- La. Insurance Commissioner Fines Hurricane-Damage Law Firm $2 Million (May 3, 2023)

"This is opportunism. I don't see anything illegal. As soon as it's illegal, we'll do something," Petrelli recalled Commissioner Donelon saying.

Concluded Petrelli: "The Florida situation, yes, it did some damage. They mowed down six companies. They litigated them to death, in effect, perfecting their process."

"Now it's everywhere," he said, reporting that a quick 4WARN analysis of happenings on the West Coast after announcements about State Farm and Allstate pulling out of California reveal litigations "taking off like a hockey stick."

During his presentation, Petrelli also pointed to the use of cloud-based operating platforms, which are now used by law firms to make litigation management activities more efficient, as a contributing tech-enabled factor that is fueling litigation against insurers. "We're not talking about word processors as litigation platforms. We're talking about IBM Watson learning how to beat the chess masters—machine learning and analytics," he said.

"If there's a bad decision on a claim, [law firms] can now find that carrier through the litigation marketing effort. They know because we have to file form changes. They have 12 months from when that filing is approved to go find our insurance with the old provision because we can't endorse the renewals quickly enough...They also know what our endorsement says. So, they feed it into the litigation platform to figure out, 'How do I beat the old endorsement language? How do I beat the new endorsement language?'" Petrelli said.

He highlighted a particular platform known as Litify, which was co-founded by John Morgan of the well-known personal injury firm Morgan & Morgan, and Reuven Moskowitz, a legal and tech entrepreneur who now serves as chief operating officer for Morgan & Morgan. Morgan has been in insurance journals recently confirming deliberate attempts to direct lawyers to flood Florida courts with insurance claim actions before a recent tort reform was signed into law, ultimately resulting in some 280,000 filed by his firm and others. And Moskowitz has reportedly told the firm's lawyers not to extend any courtesies, such as requests for continuances and extensions to insurance industry enemies against which Morgan has filed 25,000 of the suits with the help of technology. (Source: "25,000 of the suits with the help of technology," April 5, 2023, Reuters)

A prior article in the National Law Journal about the launch of Litify, and Morgan's desire to create a Google-style operation that ultimately produced a 500 percent spike in cases and revenue, led Petrelli to read between the lines that there was an initial intent to go after insurance companies with the Litify platform. (Source: Inside the 'Google-style' Tech Hub Driving Plaintiffs Firms' Growth," Nov. 15, 2021, National Law Journal) Online accounts of Morgan and Moskowitz's initial meeting, however, don't reveal any motives beyond building a differentiated brand with scale, better software and automation into a legal technology operating platform.

A recent press release about a venture firm taking a major stake in Litify describes the platform as "an end-to-end legal operating platform that breaks down business silos to power better processes, collaboration, insight, and performance" that was built on Salesforce to streamline and automate "matter and task management, document generation, timekeeping, billing, and client communications, while providing data-driven insights that allow law firms and legal teams to scale and improve their financial performance."

Litify customers don't just include law firms that sue insurers. In fact, Litify offers insurance defense practice management software as well as claims litigation software used by insurance carriers. CM

Closing the Gap on Insurance to Value in Property Policies

By Mohit Pande

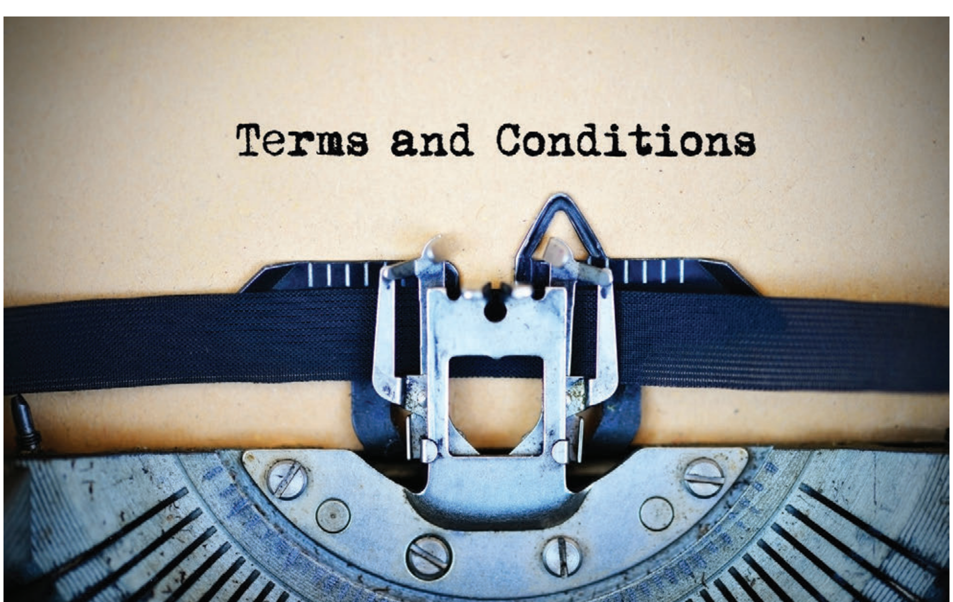
Inadequate valuation of physical assets in property policies results in a shortfall in premium collected, which in turn hinders the ability to rebuild fully after a loss.

This is a problem for insurance customers, carriers and reinsurers. Ensuring value adequacy helps avoid costly surprises at claims time and puts the industry on more solid footing when it comes to capital management and balance sheet strength.

Value adequacy always has been an imperative, albeit at times overlooked, aspect of property underwriting. However, recent events such as the COVID-19 pandemic, outsized inflation, supply chain issues, demand surge and shortage of skilled laborers have magnified the importance of the issue.

Government lockdowns during the pandemic halted production of critical goods, which later resulted in a shortage when demand for these goods climbed sharply. Reconstruction costs tend to increase 2-4 percent annually, relatively in line with inflation, but the shortage of both labor and materials led to increases as large as 8 percent between April 2020 and April 2021. Additionally, as natural catastrophes continue to increase in both frequency and severity, increased demand for labor and materials after an event creates a phenomenon known as demand surge.

The presence of these economic forces means insureds and brokers are reporting woefully inadequate replacement costs to insurers. Insurance companies charge rates based in part on these reported values and collect far less premium than necessary, which leaves them holding the bag after a large loss.



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So, what's the solution?

The most obvious remedy is to write provisions in contracts that protect an insurance company from undervaluation, or even possibly penalize the insured for under-reporting. For example:

- One common provision is the Margin Clause. A Margin Clause states that the most the insured can collect for a loss at a given location is a specified percentage of the values reported for that location on the insured's SOV (statement of values). These percentages usually range from 105-125 percent.

- Arguably even more effective than a Margin Clause is an Occurrence Limit of Liability Endorsement. This states that the most an insured can collect for a commercial property loss at a given location is the amount reported on the SOV.

- A Coinsurance Clause charges the insured a penalty if the insurance purchased is not at least a specified minimum amount of the value of the risk.

- Finally, an insurer could impose a percentage deductible instead of a flat deductible, especially if it bases that deductible on the value of a location at

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time of a loss rather than per listed unit of insured.

Vendors to the Rescue

Vendor tools to assess the accuracy of values are gaining popularity. The most well-known tool is the Marshall & Swift/ Boeckh (MSB), which can assess the accuracy of a building's value based on square footage, year built, number of stories, construction and occupancy. This tool has earned credibility in the broker and insured community; when an underwriter presents a case of the MSB tool showing certain risks as undervalued, it usually gets taken seriously.

Unfortunately, the tool is not without limitations. For one, it only can assess building values and not contents or business interruption. This can be problematic as business interruption is identified as most crucial to solving the undervaluation issue.

Also, the tool won't work unless all five fields listed above are completed. This is less of a problem for larger insureds, but it can present issues for insureds that don't have the resources to track down all those attributes.

The tool also has limitations when it comes to complex occupancies like manufacturing.

Nevertheless, it is widely popular and useful when its limitations are accounted for. There are other vendor tools to help calculate valuations, but assessing their credibility is still in the early stages.

Knowledge Is Power

The most effective antidote is education, and management must insist on it. Often an underwriter will learn the vital elements of underwriting such as technical pricing, terms and conditions, deductibles, limits, and cat accumulations. However, it's imperative to include ITV on this list.

Given the volume of accounts and workload, underwriters tend to roll forward exposures when renewal submissions come in without fully understanding the importance of an inadequately valued risk. This is where insurance companies need to make valuation a priority.

Carriers also can educate their underwriters in the following ways:

- Flag which occupancies are more likely to be undervalued.
- Offer training on how to fill out BI (business interruption) worksheets.
- Ask Claims to share lessons from losses involving underreported values.
- Stay abreast of changes in laws or ordinances pertaining to standards for rebuilding.

Accurate insurance-to-value is an ever-present challenge for the property insurance industry. By implementing even one of the actions outlined above, many insurance companies might find themselves surprised in a positive way the next time a large risk loss is reported. CM

A version of this article, titled "Closing the gap on insurance to value," was published as a blog item on the Swiss Re website earlier this year. It is republished here with permission.

'Synthetic' Agents?

Lemonade Says Finance Deal Limits Cash Burn

In late June, Lemonade announced a financial agreement to borrow 80 percent of the costs it incurs to acquire insurance customers from a venture firm.

The InsurTech carrier revealed the deal in a media statement and several social media messages.

The collection of announcements referred to Lemonade's new financial backers as "synthetic agents," causing some confusion among readers of the social media messages who initially assumed that Lemonade was unveiling an AI-enabled digital agent that would do automated marketing for the company. Among the messages sparking requests for clarification was a thread on X, formerly known as Twitter, from CEO Daniel Schreiber beginning with the words: "Big News: We've invented 'Synthetic Agents' to enable rapid growth without burning cash!"

While images of pastel pink men and women covered with "synthetic" material, wires and circuits accompany the X messages, a separate press release and a blog item went on to describe "a novel financial structure" rather than the birth of a new breed of insurance agent.

Under the program, which commenced July 1, General Catalyst, an early Lemonade investor, has agreed to finance up to 80 percent of Lemonade's customer acquisition costs (CAC) in return for 16 percent of the stream of premiums they help to finance, Lemonade said in its press release. Once General Catalyst has recovered its investment and a "capped return" on any specific cohort, "the remaining lifetime value of the customers from that cohort accrues to Lemonade, entirely and forever," Lemonade's press statement said.

The blog item, authored by Schreiber, went into more detail describing a cohort as all the people who join Lemonade in the month for which "synthetic agents"—financers—bankroll the CAC spend and receive a 16 percent "synthetic commission." (Source: "Lemonade's 'Synthetic Agents'" — Lemonade Blog)

Explaining why Lemonade is using the term "synthetic agents" to describe the deal, all of Lemonade's messages note that other carriers use independent agents to solve the problem of a "cash flow gap" that exists when growing companies have to pay upfront sales and marketing to obtain customers. While Lemonade acknowledges that independent agents deliver benefits beyond the delivery of "CAC-free customers," it is that particular benefit of agent-carrier relationships that the financial arrangement with General Catalyst is meant to replicate.

Both Lemonade and General Catalyst describe CAC outlay as a particular problem for companies in growth mode because the cash flow gap forces these companies to pass up opportunities for profitable growth. Because they don't see the gross profit payback on customers for several years, companies like Lemonade, which aren't using independent agents for distribution (or "vintage agents" in the language of one of Schreiber's Twitter threads), have to wait and defer their growth or depend on equity capital as they burn cash.

Lemonade believes the financing deal is a better solution to its CAC-spend problem than relying on independent agents because independent agents "own the customer"—and because they receive commissions over the life of the customer relationship, "siphoning off much of the stream of gross profit" from a carrier.

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The "synthetic commissions" being paid to General Catalyst are capped, the parties to the deal emphasize.

"We think the Synthetic Agents program is something of a game-changer for Lemonade," Schreiber said in a press release. "Thanks to Synthetic Agents, we believe we will be able to accelerate growth without drawing down our capital reserves or selling more equity. That means generating a significantly larger business, sooner, with more cash in the bank and with a materially higher return on capital."

Pranav Singhvi, managing director, General Catalyst, agrees. "We believe Lemonade's Synthetic Agents program gives Lemonade a balance sheet to invest in growth, so it can preserve its own capital for investments in its amazing technology and people," said Singhvi, who is described as the architect of the Customer Value strategy—the strategy used to structure the financing arrangement.

In a separate writeup on General Catalyst's website titled "The Unbundling of Growth Equity," the investment firm describes other applications of this type of financing, noting that it is designed for businesses where customers become more valuable over time. The article doesn't refer to insurance at all but instead to "subscription-like business models" with pay-as-you-go pricing structures, such as on-demand streaming services. In these models, "the faster your business grows, the more cash it burns from [sales and marketing, which means that] businesses effectively finance a customer's lifetime value using their own balance sheet, versus realizing it at the point of sale."

The article goes on to note, in an analysis similar to the Lemonade writeups, that "the acquisition of each customer represents a cash 'trough' on Day 1, which is only paid back in months and years to come by the lifetime value of that customer," and explains that fast-growing companies continually burn cash as they spend on new customer acquisition.

Lemonade estimates that for every dollar it spends on CAC, the company gets back $3 in gross profit over the lifetime of a customer. But it also takes at least two years to earn back the initial spend.

According to the General Catalyst, founders ultimately become dependent on "'growth' equity capital to fund their ambitious goals." The price of this is that founders' shares are diluted over time, the venture firm notes, also referencing the fact that "the days of free-flowing late-stage capital are gone."

The General Catalyst writeup says the solution it created, referred to as the "Customer Value Strategy," effectively treats CAC as an asset. The firm "pre-funds" a company's sales and marketing budget, and in return it is "only entitled to the customer value created by that spend"—capped at a fixed amount.

The writeup also affirms that the venture firm "owns the downside" of the deal, only getting pay "if and when" a company like Lemonade engaging in this type of arrangement gets paid. "The company never comes out of pocket to pay GC [General Catalyst] back," the writeup says.

Lemonade said that its initial agreement with General Catalyst makes $150 million of committed CAC financing available to the InsurTech over the next 18 months, in the blog item penned by Schreiber. "The parties intend for this framework to adjust, renew and upsize in concert with our expanding business," he added.

Lemonade CAC Borrowing Program Mechanics

The internal rate of return from the stream of commissions on any cohort is fixed at 16 percent, and the agents receive no more once the capped return is reached (roughly two or three years down the road). Should commissions "peter out" before General Catalyst recovers its investment in a cohort, it bears the loss, with no recourse against any other cohort or against Lemonade, the blog item says.

Source: Lemonade's "Synthetic Agents" – Lemonade Blog

Vintage Agents and Lemonade

As for independent agents, Schreiber said they have only a limited role to play in reaching Lemonade customers—"primarily to extend our reach to customers whom we cannot onboard through digital channels."

Explaining why "the overwhelming majority of our business will continue to be direct to consumers," he said that when "agent-mediated business replaces the magical [online] Lemonade experience with the agents' interface," this commoditizes the Lemonade brand and waters down the data the company collects.

Also repeating his distaste for allowing agents to "siphon off as much as half of the gross profit of the customer for the life of the customer" through commissions, Schreiber concluded: "For business we cannot reach through other means, agents make sense; they are accretive when they are not cannibalizing. But for customers we can reach on our own, we're better off going direct..." CM

How Reinsurers Can

Win the Game of Volatility

Executive Summary: Reinsurance underwriting is all about finding equilibrium between their reason for being—reducing the volatility of cedents earnings—and producing stable profits in their own businesses. With new laws promising to change a Florida litigation environment that was out of control, reinsurers are selectively leaning in, even though catastrophe exposures, amplified by climate change, remain throughout the coastal state.

By L.S. Howard

Successful reinsurance businesses strive for profit stability while promising to reduce the volatility their cedents experience. But now some reinsurers have been cutting their property-catastrophe exposures in high-risk regions. For them, the earnings volatility was just too high.

"Given the volatility of catastrophes, reinsurers are responding through rate increases, catastrophe modeling enhancements, greater stress testing and varying degrees of exposure reduction," according to a January 2023 report from Moody's.

"Nevertheless, the effects of climate change amplify earnings volatility risk for reinsurers. They will need to continue to manage their portfolios effectively, look for new opportunities and price risk appropriately in order to be able to continue to assume these increasing physical climate risks," Moody's said.

If reinsurers move away from volatility, they will start to make themselves redundant, an executive of a major broker told *Carrier Management,* in off-the-record comments, which have been echoed by other brokers.

Natural catastrophes are here to stay, and, indeed, climate change is a growing factor in losses, but the broker suggested that this is where good underwriting and accurate disaster modeling come into play.

The reinsurance industry is in "the game of volatility. That's what reinsurance is; that's what reinsurance always has been," he stressed. "We need to be able to price and underwrite better."

But in certain markets, regulatory and legal environments have made it hard for normal laws of economics to work—making it difficult for insurers and reinsurers to operate profitably. One such market has been Florida, where high catastrophe losses since 2017 combined with inadequate prices and an out-of-control legal environment to make reinsurers reconsider their capacity deployment.

Out of necessity, the Florida legislature took action, enacting two laws last year—Senate Bill 2A and Senate Bill 2D, which (among other provisions) aim to resolve excessive litigation that had been raising the cost of homeowners insurance. SB 2A, enacted in December 2022, repealed two litigation drivers: one-way attorney fees and assignment-of-benefits (AOB) agreements in property claims. SB 2D, passed in May 2022, aims to reduce frivolous claims by limiting when attorneys can get fee multipliers in homeowners insurance cases and by barring attorney fees for those who are assigned benefits. (An AOB is an agreement that transfers the insurance claims benefits of a policy to a third party, which can inflate claims.)

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"I don't think people truly understand how much money has gone to the litigators and not to the policyholders," which also has been driving up primary insurance rates for homeowners, according to Adam Schwebach, executive vice president and Tampa branch manager, Gallagher Re.

The numbers say it all. Florida is the site of 79 percent of all homeowners insurance lawsuits over claims filed nationwide, while Florida's insurers receive only 9 percent of all U.S. homeowners insurance claims, according to a 2022 Triple-I analysis of Florida Office of Insurance Regulation (OIR) and National Association of Insurance Commissioners data.

"I don't think people truly understand how much money has gone to the litigators and not to the policyholders."

Adam Schwebach, Gallagher Re

Net underwriting losses for Florida's homeowners insurers have exceeded $1 billion in each of the last three years (2020, 2021 and 2022), according to OIR (Property Insurance Stability Report, July 2023).

Since passage of the new laws, there definitely has been renewed interest from reinsurers going into the midyear renewal period, Schwebach said. After a tough Jan. 1 renewal, reinsurers were able to achieve acceptable price levels that cover their cost of risk and consequently have begun to redeploy their capacity, he indicated.

While there are plenty of headlines about national carriers pulling out of the state, he noted that "Florida domestics," or locally domiciled insurers, are staying put. "There hasn't been a [local] company that's voluntarily said, 'This is not a geography where we can continue to make money and we're going to exit it.'"

Pointing to another positive sign for the state, Schwebach said he is aware of at least 8-12 groups actively considering entering the Florida insurance market with new carrier startups. "That would be fresh capital entering the state. They view it as an opportunity to come in without any of the legacy issues and in a new legislative environment that they view as extremely attractive," he said. He noted that these startups tend to be a mix of stock companies and reciprocal insurers. (In the reciprocal setup, the carrier is owned by policyholders but managed by a separate entity called an "attorney-in-fact.")

Positive Changes

Schwebach explained that the two pieces of legislation, which aim to curb excessive litigation, will take time to play out but reinsurers are viewing the changes positively. It was the legal landscape that "caused reinsurers to step back and look at what assumptions they were making."

While they understand cat risk, reinsurers determined that unless there was significant change in Florida, the social inflation risk, the political risk and the litigation risk that went along with operating in the state were "too hard and too burdensome for them to underwrite," he said.

"I give a lot of credit to the governor and the legislature in the state of Florida because they have passed tort reform that should deal, over time, with a lot of these issues," commented Juan C. Andrade, president and CEO of Everest, the P/C insurance and reinsurance group. The legislative action taken is going "to help the environment in Florida for years to come because that's a very good way to be able to tamp down on the fraud and abuse that has existed in the state."

He noted that insurers and reinsurers have to make money, too. "And if you're in an environment where there's so much fraud, there's so much abuse, and on top of that you have climate-driven catastrophes, [reinsurers] can't make the returns they need to make for their shareholders."

Participation in a market is not only about underwriting. It's also about pricing, the regulatory regime and the tort system, Andrade said. "We have been consistent supporters of Florida for a long time, but we are cautious about who we do business with." If some of the domestic companies in Florida are not as well capitalized as they should be, that's a filter that also needs to be included in the underwriting, he said.

During Everest's second-quarter earnings' call, James Williamson, executive vice president, group chief operating officer and head of Reinsurance at Everest, noted that the company adjusted its portfolio in Florida during the quarter. "A number of the Demotech-rated Florida specialists, frankly, did not pass our financial underwriting standards, and we moved away from them and redeployed the capital elsewhere."

Up until and including this year's January renewals, the reinsurer SCOR significantly cut property-catastrophe capacity in regions exposed to climate change, according to Thierry Léger, the reinsurer's chief executive officer. "Usually, but not only, that's what you find in lower layers, frequency layers in aggregate covers."

However, during the April, June and July renewals, SCOR has been able to grow "at a low pace, together with the market," he said, explaining that the more attractive areas grew more than others and that most of the growth came from higher premium rates. (He made his comments during a media briefing to discuss first-half results.)

Swiss Re remains underweight in Florida, despite price increases after Hurricane Ian and the legislative changes, according to Swiss Re Group Chief Financial Officer John Dacey during a media briefing to discuss first-half results.

Although the legislative changes are "at least directionally correct," it remains to be seen whether they will be effective in reducing some of the excessive loss costs that resulted from the AOB excesses in the legal industry, Dacey said. "Our overall view is this market still is not functioning as it probably should economically, and we need continued adjustments both in the structure of the market but also in the ultimate pricing for us to be more comfortable to have a market weight," he said. He noted that Swiss Re is writing business for a number of clients in Florida, "but we remain cautious in the state."

He explained that one responsibility of Swiss Re is to give clear indications in any jurisdiction of what prices are required to manage specific risks. "We've got...detailed models for what we expect losses to be and how expensive they will be. And as a result, we've charged our prices appropriately to recover the expected loss in any one year."

However, what Swiss Re sees in some markets is either governmental authorities or regulators intervening in multiple ways—such as not allowing primary companies to charge adequate rates at the beginning of the value chain to cover expected losses, or encouraging non-economically based rates for reinsurance.

"We have been consistent supporters of Florida for a long time, but we are cautious about who we do business with."

Juan Andrade, Everest

Improvements have been made in many jurisdictions, he said, but Swiss Re is not convinced they are functioning as well as states where there is less regulatory and governmental intervention.

Munich Re remains cautious about the Florida market and continues to have a selective appetite, according to Christoph Jurecka, Munich Re's chief financial officer. While there have been changes in legislation, it's too early to see any benefits, he said during a briefing to discuss first-half results. "There needs to be some stability in the market, and we also need to get some comfort again before we would be able to deploy more capital into Florida..."

Hannover Re has continued to provide Florida capacity mostly in the context of global or U.S. nationwide programs rather than on Florida-specific placements, said executive board member Sven Althoff, in an emailed statement. "This is not necessarily a reflection on the pricing levels achievable in today's market, but we prefer to write natural catastrophe-exposed business as part of a wider client relationship rather than looking at it as a standalone opportunity."

Pricing Adequacy

Another roadblock for reinsurers in Florida was inadequate prices for the risks they were assuming. But that's also improving.

"Risk-adjusted rate increases for U.S. and Florida property-catastrophe covers [during the midyear renewals] averaged between 25 and 35 percent, although the level of increase is slowing," according to an Aon report, titled "Reinsurance Market Dynamic—June and July 2023."

"At these pricing levels, reinsurers were willing to support current terms in a meaningful way, and some have demonstrated appetite to grow and support increased demand for limit," the report said.

Recent tort reform in Florida and early clarity around state reinsurance support in 2023 has brought a change in fortunes and encouraging signs of stability for that challenging market, said Aon.

Schwebach said the availability and cost of retrocessional coverage has played a role in reinsurers' decisions to pull back their Florida capacity or redeploy it. However, certain reinsurers are not nearly as dependent on retro coverage—often referred to as "gross-line underwriters." They underwrite for their gross exposure, and there's no retro to back them up, he said. Gross-line underwriters manage a portfolio against their capital, aiming to make a return regardless of what retro providers are charging for that risk, which tends to create more stability in underwriting and capacity decisions.

Some retro renews at 1/1 and some renews at midyear, he said. "Depending on when those retro renewals come into play, reinsurers are often unable to make decisions until that happens," which Schwebach explained can hold up capacity deployment.

Primary carriers really need consistency, he said. "For as long as I've been involved in reinsurance, it's been viewed as a relationship business, and many of those relationships have held up over the past three to five years during difficult renewal periods."

However, Schwebach said, there are now a handful of primary carriers that are disappointed with the relationships they thought they had with reinsurers when they were simply let go without much explanation. CM

Transforming Enterprise Risk Management From **'Have To' to 'Want To'**

Executive Summary: Whether it's to fulfill ORSA requirements, boost credit ratings or comply with SEC regulations, the vast majority of insurance companies establish ERM and go through the motions each year because it's something they have to do. But ERM doesn't have to be something you just check off a box. When the goal or scope of ERM moves beyond preventing failure and complying with regulations to include strategic planning and execution, decision-making, and ensuring the company's success, it can transform from being a cost-center into a valuable tool.

By Carol A. Williams

Carol A. Williams is the CEO of Strategic Decision Solutions, a consultancy that has helped numerous P/C insurers address unique challenges to their success. Williams started her career in insurance and risk management with the Florida Office of Insurance Regulation nearly 20 years ago, more recently holding various ERM leadership positions for Citizens Property Insurance Corporation. At Strategic Decision Solutions, she focuses on helping carriers move beyond putting out fires to achieving strategic goals. Reach her at Carol@strategicdecisionsolutions.com.

Enterprise risk management (ERM) can be like eating your vegetables or doing homework as a youngster: Most kids didn't particularly enjoy it; they only did it because parents and teachers made them.

While these necessities of childhood change as we grow into adults, the fundamental concept does not. There are things we don't take pleasure in, like renewing our car registration or getting a root canal. We just do them because the consequence of inaction is much worse. ERM can be much the same way for insurance carriers.

Whether it's to fulfill ORSA requirements, boost credit ratings, or comply with SEC or stock exchange regulations, the vast majority of insurance companies establish ERM and go through the motions each year because it's something they *have to do* rather than something they *want to do.*

To many carrier executives, ERM is just that—a nuisance to check off the list and move on. As Norman Marks explains in his book "World Class Risk Management": "...when risk management is implemented in response to regulation, it becomes a cost of doing business instead of a way to do business more effectively."

Like nutrition and exercise, ERM doesn't have to be something you just check off a box. When the goal or scope of ERM moves beyond preventing failure and complying with regulations to include strategic planning and execution, decision-making, and ensuring the company's success, it can transform from being a cost-center into a valuable tool (i.e., from something you have to do into something you want to do).

You'll probably agree this transformation will be a challenge, but thankfully, it's not one that requires huge, expensive or time-consuming investments in software or elaborate models.

Despite widespread adoption of ERM, especially in the insurance industry, surveys like the 2022 State of Risk Oversight Report from NC State and Protiviti indicate that only 15 percent of financial services firms believe their ERM process either mostly or extensively is a "proprietary strategic tool that provides a unique competitive advantage."

But to understand what needs to be fixed to change this belief, you first need to understand what's broken and how this can keep your company stuck.

Based on my observations of practices over the years, the struggles that insurers experience with ERM can be broken into three main areas.

Struggle #1—Risk meetings occur sporadically and are all about documentation.

Since regulators ask to see a risk register, audits of risk controls and other supporting documentation, risk meetings (whether held quarterly or annually) will just review a list, talk it over for a few minutes and move on. As long as the risk discussion is documented, everything is fine—or at least, that is what people think.

The problem with this style and purpose of meetings is that they don't provide insights to help the leadership make better decisions around prioritizing strategic initiatives, allocating resources to operational or administrative projects, pursuing opportunities, and responding to issues or crises that inevitably come up.

Much of the discussion results in simply putting what everyone already knows down on paper. This may be good for satisfying regulators, but since risks change so quickly, this information is usually obsolete before the report is even finished.

Solution #1—Instead of quarterly, semi-annual or annual risk meetings, embed risk into more frequent, existing executive team meetings.

It's customary for the executive team to meet more frequently than a few times a year; in fact, my experience shows leadership typically meeting anywhere from once a week to every other week. To effectuate better decisions and transform beyond a cost center, ERM needs to have a seat at that meeting for business discussions and not be considered some separate activity with limited value.

The individual who fills the ERM role at the table can be a CRO, but if this person holds multiple titles or fills multiple rolls (i.e., wears too many hats), they may not have the experience or even the time to devote to it. What's needed is someone with enough knowledge of the business to provide good input and ask good questions. In the end, this is the role of the ideal risk professional—to challenge assumptions and ask questions in real time as decisions are being made.

For example, management must deal with a vendor who isn't meeting its service metrics and figure out the next steps. Risk can be there to ask: What is that vendor being used for? How critical are they for the company? What processes/functions do they support? How is this vendor impacting our policyholders, our agents, our employees? Can we get along without them, and if not, why? What will we need to do if this situation continues to deteriorate? What do we need to do to get this relationship back on solid footing? How far are we willing to let it go before taking action?

You can see from this one example how questions like these can help ensure better decision-making.

As for reporting risks to regulators, there doesn't need to be a separate meeting just to have "risk committee minutes." You don't have to share every private detail of a corporate or executive meeting. Instead, simply take a summary of what was discussed in the executive meeting, list what risks were discussed, what action items were agreed upon and who is responsible.

Struggle #2—Risk assessments only occur annually.

Between conducting interviews and surveys, aggregating the information, and prioritizing the risk(s), it often takes months to conduct a risk assessment for

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To effectuate better decisions and transform beyond a cost center, ERM needs to have a seat at business discussions and not be considered some separate activity with limited value.

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one business area. By this point, the competitive and operational environment has likely changed, and the risk information it took months to gather is now obsolete.

As a decision-maker and executive, this pattern can be especially frustrating because it seems to be a repetition of what you already knew. As a result, any reports are cast aside, little to no value is gained from the entire exercise, and everyone feels like it was a huge waste of effort.

Solution #2—Conduct risk assessments more frequently but use different approaches each time.

Rather than one big annual assessment leading up to ORSA, ERM should be cycling through the business functions at least quarterly and having shorter, quicker conversations with leaders of these disparate areas of the company. These conversations don't have to be in-depth and can even use different techniques. Instead of an interview, use electronic surveys, workshops or self-facilitated focus groups.

Also, these check-ins should not be an update of what's already been identified but rather an opportunity to ask in-depth questions beyond, "What's keeping you up at night?"

Example questions can include:

- What's changed in your business area over the last quarter?
- Have any operational issues come up? If so, what?
- Were these issues resolved to your satisfaction?
- What are you seeing on the horizon that concerns you?
- Do you feel like you have the resources needed to accomplish what you have on your plate for this year?

A process can be developed to aggregate this information quickly. Again, not something so complex that it takes months to complete.

This approach transforms risks from a list into more of a narrative around management's concerns and provides an opportunity and forum to discuss in real time the concerns that can impact the business, both strategically and tactically.

Struggle #3—Board presentations occur annually simply rehash what everyone already knows or are so high level to be useless.

For many companies, management will only present "top risks" to the board once a year. Many regulations, like the Dodd-Frank Wall Street Reform and Consumer Protection Act, require banks of a certain size to keep boards informed on the bank's top risks. Ratings agencies are increasingly assigning credit rating based on how robust (and useful) a company's ERM processes and board reporting are, irrespective of any formal rules.

A company's board can no longer abdicate their responsibility to know and understand risks to management. Nor can they claim they didn't know a particular risk was a problem for the company without suffering any consequence.

However, in many cases, board-level risk presentations are hurried (15 minutes or less), and there's little to no time for questions or in-depth discussion of supporting documents. The board may glance at the two-to-three-page report, but they quickly put it aside. And those documents put into the appendix for the board or board committee to read at their own leisure—that isn't happening either due to lack of context, details or a person to answer questions.

Solution #3—Delegate real risk oversight to a board-level risk committee.

Financial services firms of a certain size are required to have a board-level risk committee, but it's valuable for any company to have one regardless of any requirements. These committees are where in-depth conversations about particular risk(s) can happen quarterly, although I personally prefer monthly or every two months. Doing this will enable the committee to understand what's currently going on in the business, what's being done about it, and how risks that have been accepted are being monitored and handled.

The environment of the business, within and without, is too volatile to keep in-depth risk discussions to quarterly, and sadly, if you want accountability to get action plans done, ask about the status of those action plans more frequently. The action owner will want to demonstrate progress between inquiries.

While this board-level risk committee can handle the in-depth discussions, the discussions held during committee meetings will need to be summarized and provided to the full board. These updates can occur semi-annually and consist of something along the lines of what was talked about recently, any risk acceptances and status updates on risk mitigation action items that were assigned to various members of management.

Besides obtaining insights from board members to enable better decision-making on the part of management, the general public and investors will have greater confidence that the company is being run well.

Struggles like these are real and can keep an insurer's ERM practices stuck in the past if not addressed. With game-changing technology across the insurance market, increasing litigation, escalating claim volume and complexity, financial market volatility, and other challenges, insurers can no longer afford to keep ERM limited to satisfying regulators and preventing failure.

This is a recipe for failure in the long run.

Transforming ERM into an active decision-making role starts with you, the carrier executive. It starts with leadership's tone at the top.

Without leadership being totally behind the changes that need to be made and fostering the right culture, the rest of the company will not understand the value ERM can provide and will continue with business as usual. While the right risk leader can build out processes and so forth, executives will need to be there to keep the ball rolling in the right direction while ensuring any changes are lasting and providing value to the company. CM

D&O Underwriters May Be Worried About the Wrong Greenhouse Gas

Adam Grossman, Ph.D., is Praedicat's Senior Scientist and Vice President of Modeling.

Mark Kriss is Co-Founder and CEO of Geofinancial Analytics, a science-driven geospatial technology firm that helps insurers and institutional investors innovate and avoid major emerging climate-related risks in the energy sector.

Graham Tibbets is the Director, Product Management at Praedicat.

Executive Summary: Both scientists and activists have begun labeling methane as the most important target in the climate fight. That's because over the first decade or so in the atmosphere, methane is 85 times more powerful than CO2 at trapping heat, say executives from Praedicat and Geofinancial Analytics.

By Adam Grossman, Mark Kriss and Graham Tibbets

Greenwashing lawsuits, while still relatively uncommon, have seen an uptick in recent years, with some alleging harm to consumers and others alleging harm to shareholders.

Coca-Cola defended against two consumer suits alleging the company's environmental statements were misleading to consumers given that Coca-Cola products contribute significantly to global plastic pollution. 7-Eleven also defended against a consumer lawsuit alleging that its product packaging was misleading; consumers took issue with labeling a product recyclable when, in fact, it may not be able to be recycled in jurisdictions in which the stores operate. Finally, Danimer Scientific is currently defending against an ongoing securities class action alleging it overstated its polymer product's biodegradability, particularly when that product ended up in landfills and oceans.

Greenwashing with respect to climate change is an area ripe for securities lawsuits. Companies have made a point to improve their disclosures related to CO2 emissions and have also made net-zero commitments. But their ability to meet their emission targets is unclear, leaving many D&O underwriters concerned that widespread failure to meet them will lead to a wave of D&O claims. However, it will take several years before we know whether companies meet their goals. In the meantime, D&O underwriters might be worrying about the wrong greenhouse gas.

The short-term battle against global warming may best be fought over methane rather than CO2. That's because over the first decade or so in the atmosphere, methane is 85 times more powerful than CO2 at trapping heat. The discrepancy is so large that both scientists and activists have begun labeling methane as the most important target in the climate fight. That means any corporate activity that increases methane emissions should be looked at as a potential litigation target, especially as media outlets like the New York Times continue to point out that "if gas leaks, even a little, it's as bad as coal."

There are many sources of methane in the atmosphere, but in the U.S., nearly half of escaped methane comes from the agricultural industry—primarily raising livestock—and a similar amount comes from energy production. Within the energy sector, most of the emissions come from oil and gas production.

The oil and gas producers' enormous share of emissions alone isn't enough to present a risk of greenwashing litigation, though. Oil and gas production companies are required to report their emissions to the EPA, and their responsibility to report has been governed, since 1995, by the "inventory method." This obsolete methodology requires companies to provide an inventory of all the pumps, valves and fittings at each facility and apply an EPA-specified "leak rate" for each piece of equipment. This approach has major limitations from a scientific

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We've estimated that over the first three years of fines, some of the largest producers could be liable for as much as $4.8 billion—amounts that could lead the stock market to reassess the long-term prospects for a company's value, causing a significant stock drop.

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perspective, since it's been shown that the inventory method underestimates methane leakage by as much as eightfold or more when compared to direct observations of methane emissions.

Furthermore, the inventory method is susceptible to gaming. Bloomberg recently reported the case of a Pennsylvania energy producer that reported a 93 percent reduction in methane emissions. A key factor in that reduction was a change in how it computed emissions under the inventory approach. Previously, like most producers, this firm assumed the equipment in its inventory operated 24 hours per day. But in 2022 it changed that assumption on its 11,610 intermittent-bleed pneumatic devices—which use pressure to open and close valves—from 24 hours to just 8 minutes per day. That decision, also employed by other firms, contributed significantly to the reported reduction in emissions while obviously having no effect on the true emission rate.

The scientific realization that the inventory method has severe shortcomings led the U.S. Congress, as part of the Inflation Reduction Act, to mandate that energy producers directly measure their methane emissions when completing statutory reports for the EPA. Furthermore, energy companies will be subject to per-tonne fines if their emissions over the year exceed a specified level. The fine will be $900 per tonne in 2024, $1200 per tonne in 2025, and $1500 per tonne in 2026 and later.

Under the inventory method, these fines would likely only apply to a small number of companies. However, new measurement techniques, including the ability to detect methane from space, are transforming our understanding of the emissions landscape and giving investors and regulators access to independent information about methane sources, emission rates and the responsibility of parties to address those emissions—including their potential liability for fines from the federal government.

The fines are, at least in some cases, quite large. We've estimated that over the first three years of fines, some of the

According to satellite observations, nearly every top 100 oil and gas producer currently underestimates their methane emissions, and this systematic misreporting has the potential to turn into a large D&O insurance event.

largest producers could be liable for as much as $4.8 billion—amounts that could lead the stock market to reassess the long-term prospects for a company's value, causing a significant stock drop.

Furthermore, some of these companies report emissions today that would lead to fines that are only a tiny fraction of the estimated amount using independent and direct observation methods via satellite. As investors realize the company may be knowingly underreporting its methane releases, it wouldn't be a leap to imagine them filing a lawsuit against the company and its directors and officers for failing to adequately disclose this material information.

According to satellite observations, nearly every top 100 oil and gas producer currently underestimates their methane emissions, and this systematic misreporting has the potential to turn into a large D&O insurance event.

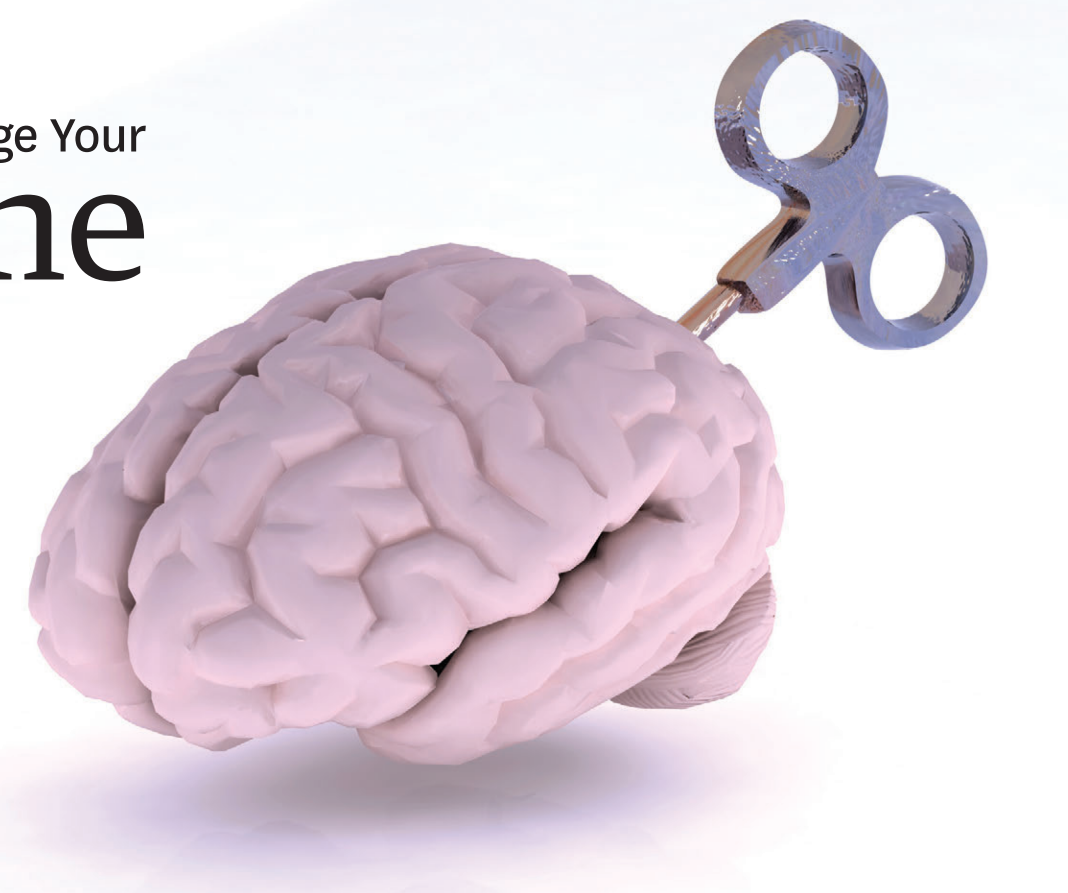
Companies and their insurers have another reason to be cautious with respect to methane emissions: Many investors already have taken note of the inadequacies of methane measurement.

Shareholders of major oil and gas distribution companies increasingly have voted to support resolutions asking the company to provide more detailed information regarding its methane emissions. Last year, shareholders of Chevron passed a resolution to this effect. This May, 36 percent of shareholders of Exxon Mobil voted in favor of a proposal asking the company to provide more detail about the reliability of its measurement of methane emissions.

Investors are also anticipating that the Securities and Exchange Commission will soon require companies to include certain climate-related disclosures in their registration statements and periodic reports. Following enactment of the SEC's proposed rules, oil and gas companies will need to specifically address methane emissions in disclosures to shareholders and other potential investors.

The increased transparency of methane emissions and the fact that satellite observations show methane emissions intensity is increasing rather than decreasing raises the risk that shareholder actions may be filed to force companies to behave more responsibly. Underwriters should prioritize writing companies that take proactive steps now to reduce these risks by fully understanding their emission profile and taking immediate action to reduce emissions intensity for real—rather than using accounting tricks like saying a valve operates for only 8 minutes per day. CM

8 Tips to Recharge Your Engine



By Kimberly Tallon

1. You don't always need to be "present."

Despite the shift to flexible and remote work in many companies since the pandemic began, employees are still exhibiting "presenteeism"—a compulsion, often performative, to work long hours and be available around the clock even when they unwell or unproductive.

In fact, the problem may be getting worse due to a perceived lack of trust from employers and the inability of many employees to draw firm boundaries between work and personal time, according to a BBC article.

The daily commute used to give people a chance to shift gears and wind down at the end of the day. Without a clear physical separation between work and home, people often find it difficult to "turn off," leading to longer working hours, increased workloads and difficulty taking personal time. Many employees working from home also feel the need to prove their dedication and productivity by being constantly available—checking emails and working over the weekend, during vacation or even when they're sick.

To combat presenteeism, clearly define your working hours and don't engage with work during personal time—unless it's a true emergency.

It's also important to lead by example. Senior leaders need to stop celebrating people for being "always on" or praising them for working overtime.

Source: "When so much at work has changed, why can't we shake presenteeism?" BBC, July 24, 2023

2. Forget work-life balance—focus on integration.

Pursuing work-life balance is impractical and can lead to disappointment, guilt and even more stress. Life is never in balance—sometimes work or family needs to take top priority, while at other times we may just need time to take care of ourselves, according to James Kerr, a management consultant and leadership coach.

Using the term balance also implies that everyone places the same value on their work and personal life. Some individuals find fulfillment and satisfaction in dedicating a significant portion of their time to work, while others may prioritize personal pursuits or relationships.

A better goal might be work-life integration: finding ways to harmonize and blend your work responsibilities with your personal life in a way that supports your overall well-being and satisfaction. This holistic approach enables us to shift our mindset and adjust expectations so we can do everything in our lives more fully and with greater satisfaction.

How to start:

- Figure out what's important. Consider your long-term goals and the things that bring you joy and fulfillment.
- Determine specific times or even days when you are fully dedicated to work and others when you will focus solely on

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personal matters—and communicate your schedule to loved ones and colleagues.

- Talk to your employer about options such as remote work, flexible hours or compressed workweeks that allow you to balance your professional and personal commitments effectively.
- Learn to delegate tasks or ask for help when necessary. Delegation not only relieves your workload but also allows you to focus on high-priority tasks and responsibilities.
- Make self-care a priority—regular exercise, mindfulness practices, hobbies, spending quality time with loved ones, and taking breaks throughout the day to recharge and rejuvenate.

Source: "Why Work-Life Balance Is the Wrong Goal," Psychology Today, July 31, 2023

3. Fight "tech neck" with yoga.

Staring at our phones, tablets or computers all day causes us to strain muscles in our necks and backs, leading to a painful problem commonly referred to as "tech neck." Some key signs that show your posture is starting to take a toll include frequent headaches, pain between the shoulder blades, a stiff or immovable neck, and even jaw pain.

Simply changing how you hold your device makes a big difference in combating long-term posture problems. One easy fix is to raise your devices so that they're at eye-level. It's important to be conscious of how straight you sit—slumping can lead to neck and shoulder strain.

Practicing yoga moves also works to stretch and relax the muscles that become tense during the day. Erika Weiss, a wellness expert from ISSA Yoga, says to focus on low-impact moves that bend your spine without causing unnecessary stress to your sore muscles, as the goal is to strengthen them, not strain them. She recommends Standing Forward Bend, Warrior II Pose, Extended Triangle Pose, Cat Pose and Thread the Needle.

Source: "Yoga expert reveals quick fix for 'tech neck,' as new ranking finds California has one of the worst postures in the US," PR release from ISSA Yoga, July 18, 2023

4. Reflect and recharge.

Pushing yourself too hard can take a toll on your body and mind—stress levels go up, the quality of sleep goes down, your immune system loses strength, and your creativity vanishes.

Sometimes the best way to get things done is to do nothing at all, writes Ken Blanchard on his How We Lead blog. Stepping away can help us see more clearly and feel newly inspired. In other words, break away from your routine of constant activity to reboot your mental and physical health.

No matter where you live or what resources you have, it's important to find a place where you can reflect and recharge. Maybe it's a nearby park, a beach or a campground. Once you find that special place, prioritize spending time there; it will make you more productive and also allow you to experience the joy of nature—alone or with someone you love.

Source: "How to Recharge Through Rest and Reflection," How We Lead blog, July 26, 2023

5. Take a vacation.

Whether you prefer lounging by a pool sipping piña coladas, going hiking or cycling, or even just enjoying a staycation, taking a vacation is beneficial to your mind and body.

Being overwhelmed at work can lead to cognitive fatigue, difficulty concentrating, forgetfulness and impaired problem-solving ability—and even affect your immune system, leaving you more prone to sickness, Executive Coach Rebecca Zucker writes in Harvard Business Review.

Taking a vacation provides greater opportunity for rest and better sleep, which can help unclutter your mind and allow you to think more clearly. It can also boost your mood and allow your immune system to recover.

Physical activities like hiking, biking and swimming can improve your heart and respiratory health, build stronger bones and muscles, and improve balance. If you prefer to be pampered on vacation, getting a massage is not only relaxing but also improves circulation and flexibility while decreasing muscle stiffness and joint inflammation.

Source: "How Taking a Vacation Improves Your Well-Being," Harvard Business Review, July 19, 2023

6. Head off vacation anxiety.

Vacation is meant to be a time to recharge and rejuvenate, but it can also lead to stress as you think of the mountain of work that's going to pile up in your absence.

Rather than giving in and working through your vacation, mental health experts speaking to WorkLife News recommend mitigating that anxiety with a few simple steps:

- Create a to-do list to ensure important tasks are finalized before your vacation begins.
- Let your team know that you'll be unavailable and assign tasks as needed. It might be helpful to have a knowledge-sharing session with your cover to make sure everything runs smoothly while you're away. Also consider establishing a

point of contact on your team who can share what you missed upon your return.

- Don't forget to create an out-of-office alert complete with contact information for a relevant colleague. You can provide your cellphone number in case of emergency—but make sure your team understands your definition of an emergency.
- If you feel the need to check email or phone messages while on vacation, limit it to the very beginning or end of each day.
- Returning to work mid-week and limiting meetings may help keep you from feeling overwhelmed when you get back.

Source: "Post-PTO scaries leave workers feeling anxious, stressed," WorkLife, Aug. 2, 2023

7. Time for a sabbatical?

If you're feeling burned out and ready to quit, a one-week vacation might not be enough to get you back on track. You might want to consider taking an extended break instead.

Taking a sabbatical can help you find renewed focus at your current job, or even help you realize that you're ready for a career change.

Don't wait until you're already burned out to start considering a sabbatical. Plan for it in advance—maybe setting a goal of taking an extended leave in three years and actively saving up money for it.

Make sure you take enough time to truly reap the benefits—at least six months if you're able—and to commit as much as possible to unplugging from your day-to-day work during that time. This will give you time to not only recover but also explore. Recovery could involve spending time in nature, going on a yoga retreat, visiting family or friends. As for exploration, you might consider traveling, taking a class, starting a new hobby.

Source: "When a Vacation Isn't Enough, a Sabbatical Can Recharge Your Life—and Your Career," Harvard Business School Working Knowledge, Feb. 14, 2023

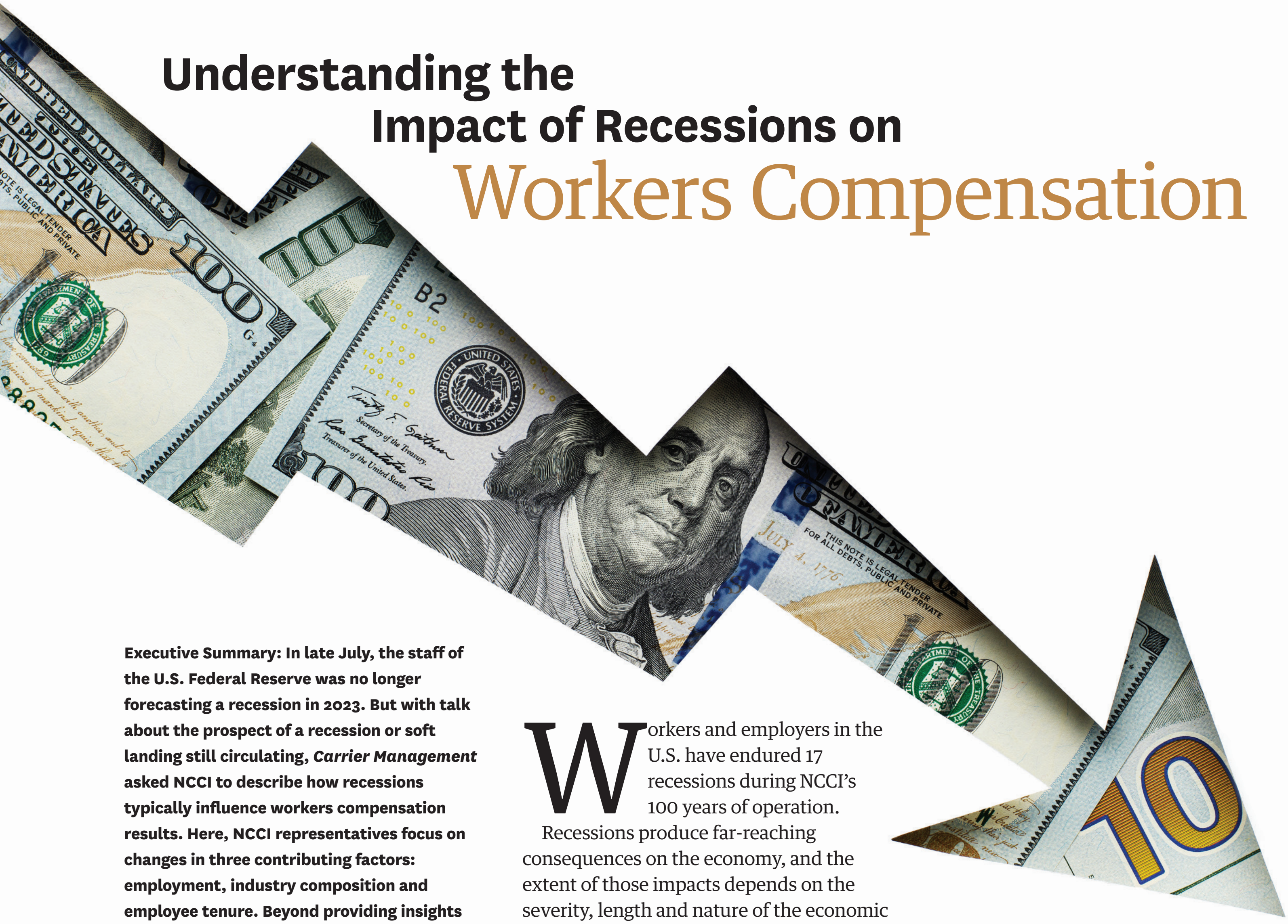
8. Stay positive.

Maintaining a positive attitude can improve nearly every aspect of your life, but it isn't easy. Steve Keating, author of the Lead Today offers these tips:

- Focus on the things you are grateful for in your life. Regularly acknowledge and appreciate the positive aspects, no matter how small. Keeping a gratitude journal can be helpful.
- Spend time with people who uplift and inspire you. Supportive relationships can have a significant impact on your attitude and outlook.
- Instead of dwelling on problems, direct your energy toward finding solutions.
- Identify activities that make you feel happy and fulfilled—hobbies, sports, simply spending time in nature.
- Pay attention to the information you consume, whether through the news, social media or conversations. Limit exposure to negative or toxic content.
- Acknowledge your accomplishments, no matter how small they may seem. Make sure to celebrate your progress and give yourself credit for your efforts.

Source: "How to Maintain a Positive Attitude," Lead Today blog, Aug. 6, 2023 CM

Understanding the Impact of Recessions on Workers Compensation



Executive Summary: In late July, the staff of the U.S. Federal Reserve was no longer forecasting a recession in 2023. But with talk about the prospect of a recession or soft landing still circulating, *Carrier Management* asked NCCI to describe how recessions typically influence workers compensation results. Here, NCCI representatives focus on changes in three contributing factors: employment, industry composition and employee tenure. Beyond providing insights into how future recessions might impact the comp landscape, this look at 17 past recessions reveals that commonly held assumptions about their impact on workers comp claims may not hold up under scrutiny.

By Patrick Coate and Cristine Pike

Workers and employers in the U.S. have endured 17 recessions during NCCI's 100 years of operation.

Recessions produce far-reaching consequences on the economy, and the extent of those impacts depends on the severity, length and nature of the economic downturn. While there are some similarities across recessions, each one has impacted the economy, workers and the workers compensation system in unique ways.

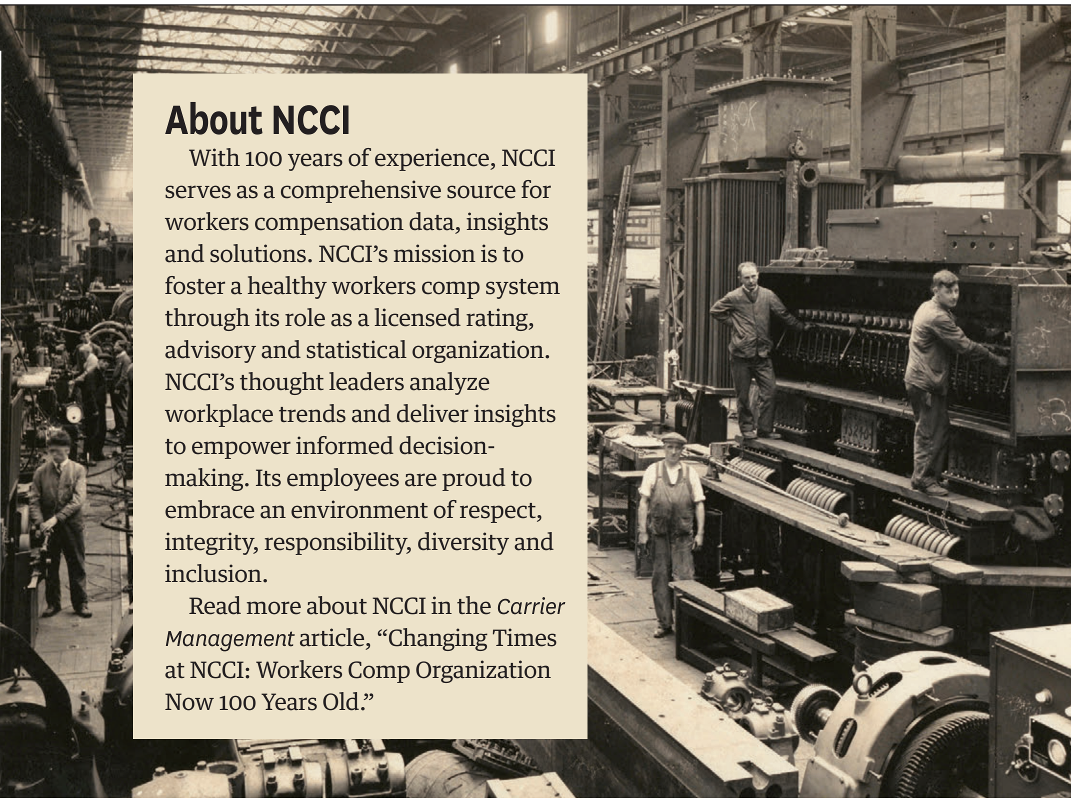
Employment, Industry Composition and Employee Tenure

During a recession, employment levels decline as businesses face economic challenges and reduce their workforce. The simplest impact on workers compensation is that with fewer workers, overall payroll decreases, leading to a reduction in workers compensation premium.

NCCI's research, conducted across several decades, has explored the relationship between injury frequency and fluctuations in employment. There are two main channels by which this occurs.

First, as businesses reduce their workforces, the industry composition changes. For example, in the Great Recession, the construction and manufacturing industries suffered the largest percentage of employment losses. These industries have high injury rates per worker or per payroll.

Second, in a recession, businesses make fewer new hires and new workers on the job are typically the first to be let go.



About NCCI

With 100 years of experience, NCCI serves as a comprehensive source for workers compensation data, insights and solutions. NCCI's mission is to foster a healthy workers comp system through its role as a licensed rating, advisory and statistical organization. NCCI's thought leaders analyze workplace trends and deliver insights to empower informed decision-making. Its employees are proud to embrace an environment of respect, integrity, responsibility, diversity and inclusion.

Read more about NCCI in the *Carrier Management* article, "Changing Times at NCCI: Workers Comp Organization Now 100 Years Old."

Short-tenured workers tend to have higher injury frequency than longer-tenured workers. Thus, as the proportion of short-tenured workers in the workforce diminishes, there is a reduction in overall injury frequency.

NCCI identified that the share of short-tenured workers is a crucial factor in driving injury frequency during recessions. A common misconception is that workers tend to file workers compensation claims at a higher rate during a recession. NCCI data indicates that the opposite is true, which can be partially explained by the changing mix of workers across industries and worker tenure.

When the economy starts recovering and companies expand hiring again, there are more new workers, and construction employment often booms. These factors put upward pressure on the frequency of claims during the period of economic recovery.

These patterns have been generally observed throughout previous economic downturns; however, there is no one-size-fits-all model when understanding the impact of a recession.

Shifting Workplace and Workforce

The COVID-19 pandemic led to significant shifts in the workplace and workforce. Many of these shifts were different than changes in previous recessions and tell a different story.

The biggest shifts relate to the nature of job loss and recovery from the COVID-19 recession. Job losses were larger than any downturn since the Great Depression and occurred in a very short time frame, primarily from February to April 2020. The Great Recession's employment losses had occurred over two years—not two months. But the recovery was also much more rapid than in the Great Recession. These head-turning changes in the workforce were unprecedented.

Another key issue is that the pandemic-related recession was primarily a "services recession." Because of pandemic-related shutdowns and quarantines, as well as voluntary changes to behavior, the largest job losses occurred in sectors that provide in-person services, especially leisure and hospitality.

This led to a dramatically different impact on the mix of workers in the economy and in workers compensation than in most downturns. The changing workforce composition led to a temporary spike in average worker wages because lost restaurant jobs averaged far lower wages than those remaining.

A Great Reshuffle began in the second half of 2020 as the economy reopened. Businesses posted record numbers of job openings, and many workers moved across jobs, occupations and sectors. This led to a spike in short-tenured workers in late 2020 and 2021, which put upward pressure on injury frequency. However, the impact was somewhat moderated because the injury differential between short-tenured and full-tenured workers is smaller for service sectors such as leisure and hospitality than for sectors such as construction and manufacturing.

At the same time, there were other major changes to the workforce. Most notably, the pandemic led to a large-scale adoption of remote work. While there has since been a partial return to the office, there is no doubt that the share of remote work dramatically and permanently increased. This change led to a reduced number of injuries in office and clerical occupations where remote work is most prevalent. It also led to a temporary reduction in motor vehicle accidents and a rise in telemedicine. Other changes to the

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workforce in the post-pandemic recovery, such as a relative decrease in labor force participation for those over age 65, can also impact the economy and workers compensation.

Today's Economic Outlook

At midyear 2023, employment and wage growth remain above pre-pandemic averages. There has been substantial slowing in labor market growth since the fast recovery period in 2021 and early 2022, but economic indicators are more consistent with continued gradual cooling off than an imminent recession.

Both residential and nonresidential construction employment and spending are robust, and the manufacturing sector's indicators are holding steady. These sectors, which are sensitive to changes in economic demand, play a crucial role in impacting workers compensation premiums and losses.

Small businesses played an outsized role in catch-up employment recovery. Despite concerns of cutbacks due to tightening credit conditions, small business continues to steadily add jobs each month through the present writing.

One potential driver of slowing growth relates to household income and consumption patterns. Real household income has fallen below pre-pandemic trend due to higher inflation, but personal consumption has remained consistent with the pre-pandemic trend. To maintain this consumption, households have been spending down surplus savings accumulated early in the pandemic. This surplus is likely to run out late in the year, which will likely cause consumption to dip below the trend.

A common misconception is that workers tend to file workers compensation claims at a higher rate during a recession. NCCI data indicates that the opposite is true.

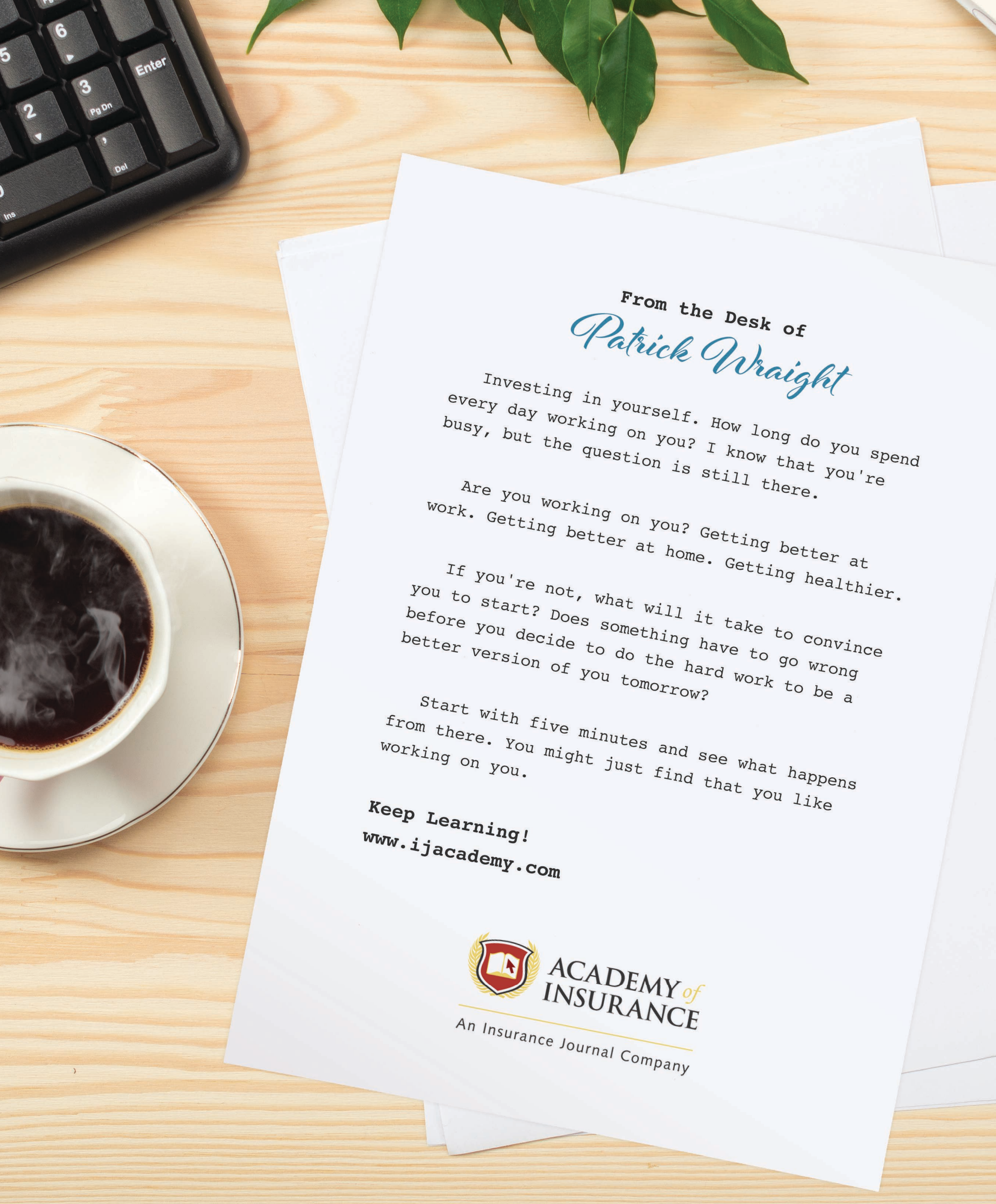
This potential slowdown in consumer spending would contribute to a deceleration in economic growth, but a slowdown is not necessarily indicative of a full-blown recession. Although the possibility of a contraction exists, it's likely that employment and wage growth may level off, but without the disruption of significant job losses or payroll declines. NCCI's recent "Quarterly Economics Briefing-Q2 2023" examines the current state of the economy in further detail.

Unique Moments in Time

Recessions have a multifaceted influence on workers compensation, impacting employment levels, payroll and injury frequency. Understanding the changes in workforce composition during economic downturns provides valuable insights into the dynamics at play.

During the last 100 years, we have experienced more than a dozen recessions, with each scenario impacting the economy differently.

There is one constant: There's not one indicator or one formula that explains how an economic downturn will impact workers, employers and workers comp. Each moment is unique, and while we can learn from experience, we must also remain vigilant and be prepared for the next economic challenge.



From the Desk of

Patrick Wraight

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