Humans Still Rule Machines in Insurance

BY LESLIE SCISM

American International Group Inc. uses one of the industry’s leading algorithmic models to determine how much companies should pay for insurance. It just doesn’t trust what the model computes on its own.

As part of an approach it started rolling out last year, the global insurance conglomerate pairs its models with human underwriters. The approach reflects the company’s belief that human judgment is still needed to size up most of the midsize to large businesses it insures. AIG even has a nickname for underwriters who keep the same price as the model every time: “flat liners.”

Insurance companies such as AIG are among the original financial quants, from tracking ships to derive marine-insurance prices to using quantitative analysis to determine the likelihood of automobiles crashing, hurricanes wiping out beach towns and juries finding doctors liable for malpractice.

Now, promising new techniques including algorithms can help carriers tap into a growing array of detail to price risk: sensors in factories, devices worn by construction workers, employee- sentiment data and satellite imagery, to name a few.

AIG’s commercial-insurance unit alone pays $75 million each business day in claims. The insurer is a major seller of policies that cover such diverse things as the cost of injured workers, wrecks of corporate-owned vehicles, fire and other damage to premises, cyberhacking, contaminated products and offshore drilling rigs.

When an underwriter “turns off his or her brain, we’re done,” said Madhu Tadikonda, chief underwriter for AIG’s commercial unit. “The models by themselves are not perfect” for many of the risks posed by policyholders.

Still, in an example of how data analysis can make a difference, AIG recently informed a hotel client that it should mop its floors at 3 a.m. to reduce slips and falls. It also has advised clients that employees with carpal tunnel syndrome are at high risk of repeat injuries, so the customary push to quickly get a person back on the job can backfire.

Underwriters such as Matthew Lebron call on business clients keeping an eye out for characteristics that distinguish them, “so I can make the judgment call to go upward or downward” from the computergenerated average price. Among questions he asks: Is a business up to snuff with industry safety standards? Is it working with AIG’s loss-control program to try to minimize the risk of claims?

“There’s definitely an element of human touch,” said Brett Herrman, who works as a “technical underwriter” at AIG, running the model when colleagues go out in the field. “We’re diving in on detail and collaborating as a team.”

The need to pair with hu-
Insurers use models to track disasters like wildfires.

JESSICA TEZAK/KNOXVILLE NEWS SENTINEL/ASSOCIATED PRESS

Insurers have not stopped the arms race for data and innovative technology in the industry.

In a recent survey by consulting firm Accenture, 37% of about 550 insurance executives said they plan to invest “extensively” in machine learning over the next three years, and a further 44% anticipate “moderate” investment.

More “insurers are doubling down on their efforts to combine their human intelligence with the fast, effective decisionmaking capabilities of machine intelligence,” said John Cusano, Accenture’s global head of insurance.

Progressive Corp. is among the elite few with successes in hand. Back in the 1990s, the car insurer identified correlations between credit histories and claims, testing a hypothesis that financially responsible people are more cautious drivers. Previously, insurers relied on underwriters to place applicants within broad categories such as age, gender and car type.

More recently, insurers have begun using algorithms to issue policies to small to midsize businesses online. They can draw on data such as construction features of a business’s premises, proximity to fire hydrants and code violations.

Berkshire Hathaway Inc. has such an offering, and last year AIG joined with Hamilton Insurance Group Ltd. and an affiliate of quantitative hedge fund Two Sigma Investments LP in an online venture.

Analysts and executives say algorithms work well for standardized policies, such as for homes, cars and small businesses. Data scientists can feed millions of claims into computers to find patterns, and the risks are similar enough that a premium rate spit out by the model can be trusted.

But risk is increasingly nuanced the bigger the business. Policies often are tailored, and claims infrequent, so there is less information to work with. And, mistakes can be costly.

Former AIG Chief Executive Peter Hancock has been one of the industry’s biggest champions of data analytics, frequently narrating how, about six years ago, researchers at Johns Hopkins Bloomberg School of Public Health studied millions of AIG’s old workers’ compensation medical records and identified problems from overuse of opiates. Now, AIG reaches out to a patient’s medical provider early to suggest nonaddictive treatment.
Mr. Hancock was succeeded last week by Brian Duperreault, formerly Hamilton’s CEO and another leading proponent of data science. As part of his hiring, AIG said it would work with Two Sigma to develop an estimated $250 million “next generation insurance platform” to accelerate its use of data science.

Sitting at his desk with photographs from Apple Inc.’s 1990s’ “Think Different” marketing campaign on the wall behind him, AIG underwriter Mr. Tadikonda said he prefers to see many policies priced both above and below the model-driven average price. He said there are times the modeling team will call an underwriter and say, “Hey, what’s going on? You are down 25%” against what the model recommends. His favorite response from an underwriter: “You’re damn right.”

*Algorithms can help insurers tap into a growing array of detail to price risk.*