PROPERTY CASUALTY 360°

Actuaries as Difference-Makers

SOCIETY OF ACTUARIES

New predictive modeling-focused training will give P&C insurers a fresh pool of analytics-savvy actuaries to help them unlock their big data capabilities.

No segment of the insurance business has done more to bring predictive modeling and analytics into the mainstream than the general insurance (property and casualty) sector. As of last year, **two-thirds of U.S. general insurance insurers were using predictive models for underwriting and risk selection**, up more than 10 percent from the year before, according to the consulting firm Willis Towers Watson.

That far outpaces other sectors of the insurance business. For example, in a separate 2017 **survey of life and health insurers operating in 23 different countries around the world**, only 22% currently use predictive analytics; 46 percent indicated they have no immediate plans to use predictive analytics within the next two years.

“Property and casualty companies really have pioneered the use of analytics and data in the insurance business,” observes Stuart Klugman, FSA, CERA, Ph.D., senior staff fellow at the Society of Actuaries (SOA).

Yet as aggressively as the P&C segment has invested in recent years in digital data-gathering technologies and advanced predictive analytics tools, insurers risk losing the competitive edge these tech investments can provide unless they double down and prioritize the people side of the business, Willis Tower Watson asserts. “Insurers will need to solve internal roadblocks to fully expose data’s potential,” the firm says. And these roadblocks are largely a personnel issue. “People are the biggest challenge to generating business value from data, as insurance companies often lack employees with the right training and skills.”

The Society of Actuaries (SOA) is addressing that need by rolling out a new predictive analytics requirement for candidates pursuing the Associate of Society of Actuaries (ASA) designation on July 1. To earn the ASA designation, candidates will be required to pass a new **Statistics for Risk Modeling (SRM) Exam** and then also must complete a series of online, case-study-based predictive analytics e-learning modules that involve extensive hands-on work applying the generalized linear model, decision tree analysis and other predictive analytics techniques to complex, real-world scenarios and data sets. That course work puts a heavy emphasis on developing actuaries who combine predictive analytics expertise with well-rounded business skills, including the ability to communicate findings through written reports and with data visualization tools.

It all culminates with a new predictive analytics exam that, unlike more traditional multiple-choice or short written-answer actuarial exams, requires candidates to demonstrate they not only know how and when to use specific predictive modeling approaches, they also can effectively portray and communicate their findings in report format. Upon arriving at the testing site for the five-hour exam, candidates are handed a project assignment in which they are asked to solve a business problem with the set of data they're given, according to Klugman. Using a computer equipped with Microsoft Word and Excel, a PDF reader and the RStudio modeling software (but no internet connection), candidates then write their code in the R programming language, conduct their analysis using the modelling approach they believe is appropriate for solving the business problem, and package their findings, along with supporting materials, in a written report that they submit electronically at the conclusion of the exam.

"We want to test our candidates' ability to do analytics by having them *do analytics*," Klugman explains. "We're taking a different approach here, trying to teach our actuaries how to be good analysts and good communicators."

Candidates can begin their predictive analytics course work in late July, when the SOA's new e-learning platform is scheduled to launch. The first administration of the **predictive analytics exam** is slated for mid-December, 2018.

For all the unique requirements of the new exam, SOA needed a uniquely qualified firm to oversee it. For that it chose a long-time partner, Prometric, which has been administering various SOA computer-based preliminary examinations for more than a decade. Prometric provides a stable and sophisticated computer interface for the predictive analytics exam, he says, along with exemplary multi-level security to protect the integrity of the exam, plus a far-reaching global network of thousands of testing centers in some 160 countries in North America, Asia, Europe and elsewhere.

The new predictive analytics exam is but one element of a completely reimagined associateship curriculum at SOA. Developed based on extensive feedback from industry stakeholders, the new curriculum places a heavy emphasis on advanced analytics and modeling, with a new Statistics of Risk Modeling exam covering the basics of applied statistics. This new exam provides a bridge from mathematical statistic-focused course work to predictive analytics and its applications.

SOA's revised ASA curriculum is set to take hold July 1, 2018. Actuarial candidates who have not earned the ASA by that date must complete the new requirements; those who earn an ASA before July 1 are exempt from the new requirements, provided they also earn fellowship within four years — by July 1, 2022. Beginning July 1, 2018, every actuary that earns an ASA designation will bring those techniques and skills to the organizations that hire them.

The new focus on predictive analytics within the associateship track is part of a broader effort by SOA to equip actuaries with the sophisticated analytics skills and real-world problem-solving abilities that P&C insurer's today demand in the face of escalating competition and ever-more-complex risks. Besides the new predictive analytics exam, the SOA also offers an immersive five-month predictive analytics certificate program, in addition to webcasts, podcasts and an annual symposium, all dedicated to predictive analytics and modeling.