

by *BusinessInsurance.com*

New advances in predictive modeling will play an increasingly important role in the property/casualty insurance business in the next decade, panelists told attendees at the Casualty Actuarial Society Predictive Modeling Seminar.

Opening the seminar's plenary session, moderator Jim Guszczka, the national predictive modeling lead for Deloitte Consulting LLP, said there is increasing awareness of the benefits that predictive modeling can bring to all industries, including insurance.

"There is a growing recognition in cognitive psychology, behavioral economics, and business that predictive models across the board in many different industries, including property/casualty insurance, help human experts make decisions more accurately, objectively, and economically," he said.

Guszczka noted that predictive models have enabled insurers to build underwriting models with significant segmentation power and are increasingly being applied in such areas as claims modeling, agency analytics, customer segmentation and target marketing, and price optimization.

"Predictive modeling will increasingly be regarded as a core competency for all forward-thinking property/casualty companies around which they can fashion their competitive strategies," he added.

Robin Harbage, senior consultant, EMB America LLC, noted that predictive models can be used in different areas to help insurers price risks more effectively.

Key new rating variables that are being incorporated into insurers' predictive models include homeowners rates by peril, homeowners rating by building characteristics, vehicle history, and usage-based auto insurance. Citing the example of usage-based auto insurance, Harbage said that predictive modeling allows both commercial and private passenger auto insurers to develop more reliable rates.

"For a long time, we have collected roughly 40 static pieces of information on drivers, and most of that information has nothing to do with how they operate the actual vehicle, except for points and violations," he explained.

In contrast, usage-based insurance uses only driving data "time of day and mileage" to enable insurers to determine more accurate rates.

Harbage cited data from a Canadian study showing that crashes per vehicle increase with annual mileage. "It's fair to say that this may outstrip all the data variables for segmentation that we currently utilize," he said.

Glenn Meyers, chief actuary for ISO Innovative Analytics, observed that there is a lot of opportunity for predictive modeling applications in the area of insurance claims, particularly in fraudulent claims detection.

"We cannot explicitly identify fraudulent claims. Quite often, the individual information on the claim itself is not sufficient to identify a fraudulent claim," he said. But many fraudulent claims are potentially organized, so one valuable approach is to look at relationships over multiple claims.

"You have a claimant in an accident who shares a telephone number with the witness in another accident. Or an insured in one accident shares a Social Security number with an insured in another accident. These are the kinds of connections that cannot be identified on an individual claim," Meyers explained. "New techniques such as data visualization can now be used to inspect the data and see the potential links," he added.

Keith Holler, vice president of The Travelers Insurance Company, identified new technology, data sources, and new statistical methods as the key areas that are driving new predictive models.

"Text mining has a lot of opportunity. The websites that are out there "social media sites like blogs" are a valuable source of data," he noted. For example, Holler said that by mining the blogs you might find as many as 40,000 comments on an individual insurer.

"Why is that important? Because you're getting a panel survey of data that doesn't cost you anything and where people don't know they're being surveyed, so they are telling you what they really think," he explained.

The CAS Predictive Modeling Seminar was held October 6-7, 2008. CAS fulfills its mission to advance actuarial science through a focus on research and education. Among its 4,900 members are experts in property/casualty insurance, reinsurance, finance, risk management, and enterprise risk management.

Source: Casualty Actuarial Society

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