

# Insurers Seek Competitive Edge Through Underwriting Analytics

**Analytics are increasingly being applied in the insurance underwriting realm to create a competitive edge in an increasingly commoditized business, both at the micro level of pricing and at the macro level of product portfolio and line of business performance.**

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The application of predictive analytics to underwriting often has been cast as a question of art versus science. Traditionally, underwriters have shown some resistance to the penetration of technology into their territory on the grounds that, when all is said and done, underwriting is an art. But more recently, they seem to have acknowledged that rather than being adversaries, science and art are partners in a common enterprise.

Underwriters have come to appreciate technology much the way agents have: They have discovered that it makes their lives easier, freeing them of administrative drudgery and conserving their time for tasks that genuinely require their intelligence and expertise.

A further driver of the penetration of analytics into underwriting and pricing is the inexorable demographic fact that underwriters are becoming scarce. With the number of underwriters diminishing, technology simply is necessary to pick up the slack. That has been the case in the increasing development of underwriting support systems that use rules engines and analytics to "jet issue" or otherwise simplify the underwriting process by automating those aspects of it that -- with the aid of technology -- can literally be called "no-brainers."

The utility of analytic technologies for underwriting and pricing, however, goes well beyond the efficiency gains. More and more, analytics are being applied to create a competitive edge in an increasingly commoditized business, both at the micro level of pricing and at the macro level of product-portfolio and line-of-business performance.

"We're taking this to the next level of sophistication in terms of identifying the analytics that will generate truly unique insights for building more competitive products because that's really where the game in insurance will be won," opines [Gail McGiffen](#), a partner with Accenture (Chicago). Unfortunately, carriers anxious to improve their competitive position all too often have embarked on data capture efforts that have yielded more quantity than quality, she suggests.

As impressive an accomplishment as capturing more data more efficiently and organizing it neatly into data warehouses may be, insurers need to focus on precisely what they are going to use that data for, McGiffen says. "It isn't enough to just dump data into management information systems and reports," she insists. "It is extremely important to focus on the KPIs [key performance indicators] that drive business outcomes."

Other insurers would do well, McGiffen advises, to heed the concerns expressed by an Accenture client: "The last thing in the world I want is to have my very busy underwriters in the field getting more reports with all this data loaded in their in-boxes," the client said. "Where I really want to go is faster and, yes, more reports, but greater precision in the types of analytics and therefore the data to support it."

When carriers do approach predictive analytics build-out with the proper focus on quality, the implementation process itself is likely to be illuminating, according to [Mark Gorman](#), the Minneapolis-based principal of consulting firm Mark B. Gorman & Associates. "Typically the communication they share and the insight they gain have already improved the business even before the implementation," he comments. "This is all about turning data into information, information into knowledge and knowledge into behavior -- whether that behavior be human or automated."

In the P&C industry, some of the greatest analytics-related focus currently is on a combination of human and automated behavior. As carriers have mastered the use of rules and analytics for underwriting simpler lines

of business, such as personal auto, P&C insurers have begun to focus more on applying predictive analytics to automate some commercial lines, such as commercial auto and business owners' policy (BOP), according to Gorman.

Complex commercial risk -- along with non-P&C risks analogous in complexity -- is not amenable to the "jet-issue" treatment, Gorman adds. But it is very much amenable to the application of analytics in the form of automated decision-support rather than decision making. Essentially, Gorman says, "The system can make a recommendation that the underwriter can override, ignore or make an exception to."

## Efficiency Gains

Still, Gorman notes, progress continues to be made in the automation of new business. When this approach first took off -- in the late 1990s and early 2000s in certain personal lines -- insurers enjoyed the efficiency gains of passing through, or jet issuing, 30 percent of applications while referring the remaining 70 percent to human underwriters, according to Gorman. Today, he contends, the more advanced carriers enjoy between 80 percent and 95 percent pass-through.

These efforts have benefited from improvements in tying together analytics with enabling technologies, such as rules engines, workflow solutions and content management environments. Additionally, Gorman points out, as carriers have gone through increasingly sophisticated iterations of predictive models, they have found that they can build and validate models on less data than they would have needed in the past and still enjoy a comparable business benefit.

[The Hartford's](#) (Hartford; \$26.5 billion in 2006 revenues) [group benefits division](#) furnishes an example in its group life and disability lines. In June 2007 the division rolled out a streamlined online personal health application leveraging improved analytics-driven medical underwriting. "What we've done is built a Web-based tool and hooked it up to our PULSE medical underwriting engine," relates Monica Spigner, assistant vice president, consumer operations, for The Hartford's group benefits division. "Now we have a very powerful process that gives real-time decisions almost 80 percent of the time to those consumers who elect to use the online application."

The six-question online application replaces a 24-question paper application that not only was more difficult for applicants to complete, but could take weeks to process in some instances, according to Spigner, who says rollout of the online process was preceded by about 18 months of work to update underwriting rules processed by the homegrown PULSE engine and get the new questions filed with state regulators. "It was the rigor of pulling all the historical data out of PULSE -- the actuarial, the mortality tables -- and working with our individual risk managers to apply the latest and greatest in terms of medical underwriting guidelines," she explains. "We partnered to ask how and at what point we could change those guidelines to streamline the consumer experience -- for example, by ordering fewer exams for a particular diagnosis -- and still get an approval that we were comfortable with from a risk management perspective."

The opportunity presented by improved analysis was that some of the guidelines previously used within PULSE not only were too conservative but positively counterproductive from both a risk and efficiency standpoint, according to Spigner. Certain "red flag" medical conditions would result in PULSE declining a given applicant and referring the case to an underwriter, she relates. In a large number of those cases, however, the individual risk eventually would be approved after an appeal process that demonstrated that the condition was under effective management. "I'd rather approve those conditions on the front end rather than deny them and have them come back to my unit as an appeal, which costs me money," Spigner says.

From the time the new six-question application was completed in June until October 2007, The Hartford worked with Glastonbury, Conn.-based [BenefitsXML](#) to Web-enable the previously manual process that connected applicants to PULSE and the carrier's underwriters. "They had modules that did the work, but we had to customize their tool because it assumes that a customer has different approaches for life and disability," Spigner explains. "We differentiate ourselves in the market by using one form -- one process for both life and disability coverage."

While The Hartford's group benefits division is yet to formulate metrics for measuring the success of the online application, since it went online in October, the division has enjoyed \$50,000 of savings related to the

reduction of medical exams alone, Spigner reports. She says she believes that it may take a couple of years to realize the risk management impact of the new process.

"We'll continue to monitor our loss ratios and risk management data," Spigner remarks. From a more general perspective, "When we have more experience with the form and process, I believe we'll see faster time to decision and more hard dollar savings."

## **Innovation Through Insight**

Similar analytics-driven risk selection has made a big splash in the auto insurance realm, as exemplified by Progressive's (Mayfield Village, Ohio) ability to generate billions of pricing cells. But as important as this capability is to Progressive's strategy, its returns diminish as competitors catch up in their use of analytics.

Super-refined pricing based exclusively on analysis of loss costs has its limitations, according to Murli Buluswar, VP of Los Angeles-based Farmers Group's (\$15 billion in 2006 written premium) Insight & Innovation (I&I) group, which he describes as an internal analytics consulting function. "Achieving better pricing will drive benefits from positive selection, but once your competition catches up, adverse selection, as defined by attracting the least profitable segments for which you are underpriced, is a bit of a moot issue," he says. "Getting perfectly accurate pricing at a micro-segment level isn't itself a driver of growth."

Carriers can have hundreds of millions of pricing cells, but, obviously, they can't charge hundreds of millions of different price points. And as competitors grow more proficient at pricing, differences in price will be very small -- perhaps pennies. Furthermore, a strategy based exclusively on price counts on uniform price sensitivity on the part of customers. In this respect, according to Buluswar, "If you think about how underwriting is done today, it's a bit of a faith-based initiative."

For "perfect" pricing to be an engine of growth, Buluswar continues, reducing the price for more-desirable risks must result in a carrier underwriting more of them relative to less-desirable risks. But, "That may not necessarily happen. You might stumble upon it, but it is not necessarily a natural outcome of any price changes you make," Buluswar asserts.

"To think that trends are influenced solely by price is to imply that customers are driven by price and nothing else," Buluswar says. "If that were true, then every insurance customer would go to the lowest-priced carrier, which does not appear to happen today."

In a world where competitors have comparable pricing analytics capabilities, "Low-cost models insulate you from adverse selection only to the extent that it is actually happening -- so first of all, you should find out whether it really is happening or not," Buluswar advises. "But even then it only lets you get to a portfolio-level equilibrium, which you already had -- it doesn't actually help to improve your overall economics anymore."

According to Buluswar, to improve Farmers' economics, I&I is applying highly refined analytics to understand the holistic relationship with a customer. "Arriving at perfectly accurate pricing is a good place to be, but it's an incomplete picture," Buluswar remarks. "To the extent that you're causing some [price] volatility, you have to ask, 'What is the net outcome of that volatility at the portfolio level from a growth and profitability standpoint? Who is going to leave you, and what is that lost opportunity worth to you?'"

## **Deeper Connection**

Again, pricing risk is just one factor in the profitability equation. "If we weave that in and build a deeper connection with the customer, not only from a pricing standpoint but also from a customer-experience standpoint, it can be a meaningful growth opportunity," Buluswar adds. "In today's world there is no segmentation around whom we should be chasing for underwriting follow-up and who we shouldn't -- we pretty much just do it across the board."

Since I&I was founded in September 2006, it has significantly raised the appetite for data at Farmers and now is the main customer for warehousing projects at the carrier. I&I's key analytical platform is SAS (Cary, N.C.), according to Buluswar. The group also uses San Diego-based Salford Systems' [TreeNet](#) data mining

solution, which Buluswar says "is particularly good at understanding interactions between different segments, such as the predictive value of marital status and gender -- each might be predictive individually but might be more predictive together."

The I&I team consists of about 40 professionals with expertise in a variety of areas, including MBAs, actuarial science, statistics and economics, according to Buluswar. About half that team, he notes, is supplied through a close partnership I&I has forged with Jersey City, N.J.-based [Fractal Analytics](#), a global service provider focused on profitability enhancement through innovative uses of analytics. "With a combination of analysts here and offsite with Fractal, I can staff a team at roughly 40 percent of my loaded cost, and what I'm getting is the crème de la crème of what India has to offer," Buluswar comments.

While I&I's mission is to drive analytics-related innovation throughout Farmers Group, its largest client is product management, Buluswar relates. "Our No. 1 contribution needs to be in the area of pricing strategy," he says.

Within that context, I&I goes through what Buluswar describes as a challenging process to pull data from a variety of Farmers sources and runs that data through predictive models to generate customer metrics that are delivered to the project managers' desktop pricing platform for further use. "It includes understanding each individual customer's loyalty as you project it, how many relationships you expect them to have and how you expect that to manifest itself in revenue," Buluswar says.

"What used to happen was the project managers would run various scenarios around different loss costs," Buluswar recalls. "They're still doing that, but with the added benefit of understanding what impact it will have on the future and how it affects average customer loyalty and other insights that relate to longer-term profitability."

Starting in the first quarter of 2008, Buluswar notes, pricing developed with the addition of I&I's activity will go to market. The group's goal by the end of 2008, he adds, is to achieve annualized run rate improvements of 100 basis points in new business growth and the same in cost savings. "We believe we can achieve this by creating efficiencies and science-driven insights in the areas of underwriting, product development and pricing strategy, retention, service center management, and agency recruiting and management, as well as insight on Farmers' relative brand position," Buluswar says.