The magazines you subscribe to, the clubs you belong to, your favorite vacation destinations, maybe even the music you buy when taken together say something about you and the kind of risk you represent to an insurance company. That took into account age, driving record, year and make of the vehicle, miles driven, and home address to determine their risk. Today, they have much more information and much more sophisticated computing capabilities at their disposal. That can mean more precision and better decision making.

“Recent economic realities mean insurers can’t depend on the investment dollar for profitability, so they have to make good decisions on the operations side, that is, in risk selection and pricing. There isn’t much room for error in operations because of the lower return on investments. Predictive analytics help companies make better operations decisions.”

– Mark Vonnahme
"Predictive analytics is putting your arms around all of the data that you can gather, mining it to discover valuable business insights, and utilizing advanced statistical methods to build models that predict the probability of future outcomes."

- Jonathan Ankney

Finance. "Recent economic realities mean insurers can’t depend on the investment dollar for profitability, so they have to make good decisions on the operations side, that is, in risk selection and pricing. There isn’t much room for error in operations because of the lower return on investments. Predictive analytics help companies make better operations decisions."

And while the underwriting operation has been the focus of much of the analytics, Ankney says there is movement to broaden the scope of this form of business intelligence. For instance, applying that intelligence to branding, marketing, and service initiatives may pay dividends by attracting and retaining customers. While those are all income-generating efforts, Ankney says there are important implications on the expense side as well.

"Due to market competition forces, insurance premiums are at the lower end of the spectrum right now, which places more scrutiny on expenses. Predictive modeling techniques can impact your bottom line by helping you manage claims."

"How might that work? Ankney explains that savings can be realized by using analytics to predict which claims are most likely to be the most straightforward. You can then assign those claims to junior-level adjusters, so that the most complicated ones are handled by the highest-paid, most-senior adjusters."

A second way to impact the bottom line relates to claims management, says Ankney. Insurance adjusters are trained to examine the fact patterns of certain types of claims and predict their likely pay-out. A binder bender in the daylight hours involving two middle-aged drivers in late model vehicles might be considered a standard claim with a standard payout. And in 9 out of 10 cases that might be exactly how it pans out. But if that last claim ends up breaking the pattern, it could also break the bank.

"Predictive modeling can help us triage claims and flag those that could be more costly, so claim severity can be managed," explains Ankney. "You set up a model based on the early fact pattern and then pull in other external factors, a predictive model can flag which one of those ten claims has the potential to cost the company $100,000 instead of $1,000."

What are some of those "external factors”? That’s the million-dollar, or maybe the 10-million-dollar, question. Data such as credit scores, buying patterns, or leisure interests, for example, can have predictive ability. The magazines you subscribe to, the clubs you belong to, your favorite vacation destinations, maybe even the music you buy when taken together say something about you and the kind of risk you represent to an insurance company. Just what that “something” is, however, is another million-dollar question.

"We continue to search for the 'why' behind statistical correlations, like why a person's credit score is correlated with her or his future auto insurance losses," says Rick Gorvet, director of the Actuarial Science Program at the University of Illinois. "Maybe it’s because someone who is careful with their money is also a careful driver or maybe there are other explanations. But while we try to understand the ‘why,’ we recognize that the statistics show it and that the predictive value of these statistics is important to the industry."

"That value is part economics, part competitive edge. "Insurance is a tough business to grow in because there are so many competitors," says Ankney. "The enterprise must decide what strategic initiatives it will adopt to distinguish itself in the marketplace."

"Good, clean, reliable data is key to making accurate predictions about risk potential."

- Stephen D’Arcy

"Analytics is a critically important strategy to use if you want to be competitive in pricing. Ankney explains, but for companies that have not adopted models it can be a big change.

"Agents and underwriters who are used to using their gut and their judgment may be put off when others in the company advocate that the technology of analytics will revolutionize the company. Buy-in is tricky. Getting the time needed from the IT department can be a challenge as well. But companies that prioritize, that communicate effectively, and that have C-suite drivers that are behind the buy-in can get the adoption right and make it sing. Those are the organizations that reap the most rewards from a competitive standpoint."

A SECRET RECIPE

"Prior to the explosion of data and the introduction of sophisticated analytics, rating plans were fairly straightforward and relied on the collective judgment of underwriters and actuaries. Competitors had an understanding of how others in the industry were pricing their products. Predictive analytics has changed all of that, with companies developing their own models and rating systems."

"Companies know the value they can obtain from data mining their information, and they don’t want to lose their competitive edge by giving away the results of their work," says Stephen D’Arcy, professor emeritus of finance. "There are lots of pockets of profitability that they can tap because they have sole access to that information until others catch up. It’s an insurance company’s version of their own secret recipe."

But there are disadvantages to this proprietary mindset as well, explains D’Arcy. "If you’re not transparent, it raises suspicion in the minds of the public who don’t know what kind of data you’re using to price decisions on or how accurate that data is. They might feel that the information is being used against them, and that can hurt the credibility of the industry. If the public doesn’t trust that they’re being dealt fairly, they might not be as forthright regarding claims."

And then there’s the question of accuracy. "The model is only as good as the data provided," says D’Arcy. "Good, clean, reliable data is key to making accurate predictions about risk potential.

But there is another component that D’Arcy and Vonnahme both believe is critical, and that’s meshing the power of data with the power of common sense. "Models are just that, models," says Vonnahme, who has 15 years of experience in the insurance industry. "We have to use a combination of management expertise and models to best serve clients and ensure the health of the company. Too much modeling and not enough common sense can be dangerous."

Farris adds: "You can’t just take a model and use it. There are statutory requirements, social issues, and public opinion considerations that all enter in. You have to be able to understand the models and apply them to your specific jurisdictions."

As Ankney puts it: "The smartest actuaries in the world can build the greatest model in the world, but if it isn’t understood and used effectively by the business, you’re missing the boat."

D’Arcy agrees: "Models are developing so fast, and they are the purview of a very small, technically talented group who can understand the mathematical complexities but may not have the real-world experience that’s required to put them in perspective. There has to be an interface that knows both sides. Without that, I’m concerned that complicated models could lead to incorrect decisions that will then cost the company, and the industry, dearly in terms of both economics and reputation."

- Cathy Lockman

"Good, clean, reliable data is key to making accurate predictions about risk potential."

- Stephen D’Arcy

Cathy Lockman