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Society of Actuaries Trend Topic: How Predictive Analytics Can Bolster Organizational Expertise

By Steve Fredlund

"Is it working?" The CEO's question was simple—Allianz Life was, like many companies, investing significant time and resources into raising its overall level of organizational expertise. Trainings, classes for staff, departmental enrichment budgets. But was it working?

The simple question had no simple answer. There was no direct way to tell if the money invested in the enterprise was increasing employee expertise in their fields. And so the newly formed human resources Workforce Analytics department was tasked with engineering a path to the answer.

I'm part of the two-person Workforce Analytics team at the U.S. headquarters of Allianz Life in Minneapolis. As an actuary, I'm a bit out of my field's traditional realm, but with "big data" looming large in the zeitgeist, many leaders are recognizing the need to confirm their instincts with data. And, with more and more companies adopting predictive analytics and data visualization, the expectation is higher than ever to use data to qualify business assumptions.

Here at Allianz, we are pioneering a new way to understand employee expertise and training. The "Organizational Expertise" project aims to measure and monitor both broad organizational and specific departmental knowledge and skillsets, and provide analysis and actionable insights into both. We're creating a simple, scalable method for understanding our gaps in organizational expertise and to begin answering the training question "is it working?" We expect this project to advance us further toward predictive analytics.

Currently, we are piloting the approach with the controllers' area of the Finance Division. We began by accumulating data points for the project based on managerial input about their employees' expertise. Managers used a well-defined scale—like a grading rubric—to assign numbers to broad and specific areas of expertise, including both target and current levels. The skills we can evaluate can include anything—for controllers, they're as varied as business acumen, product effectiveness, technical accounting and spreadsheets.

The scale we created to evaluate target and actual expertise of each employee is proprietary to Allianz Life; however, in general terms, it is a non-linear scale that funnels. For example, a "0" might be something that everyone qualifies for, say all 1,000 people in a group, while a "1" applies to just 500. On the other end, a "9" might only apply to five people, and a "10" to only one. It makes thousands of skills across hundreds of people and dozens of departments easy to visualize for a high-level view of current expertise levels.

This high-level view allows HR to see where the organization is doing well with organizational expertise, and where there are areas in need of improvement. We can use the data to isolate our gaps in expertise, discover any departments or teams with surplus expertise that could be used elsewhere, and see how the organization is trending toward those targets over time.

The biggest benefit, however, lies in the deeper analysis we can do with the employee data. We built models that will allow us to predict the future needs of the department based on how expertise levels change as employees gain experience in their field and learn new skills.

Over time, the model will uncover the staffing effects as employees go from their current expertise level to their targets. It could be used to predict which employees may be more effective in other roles as they accumulate skills that apply to positions outside their department. We'll be able to discover which skills are most easily acquired by training as we examine employee progress, and by extension, which skills are most easily acquired through hiring. We'll also be able to determine which skills are lost through attrition, which managers are most effective in raising skill levels, and new skill-oriented needs as they develop.

When the model has run for enough time to definitively say that it has identified expertise deficits and surpluses, it will provide managers with an invaluable tool to match up employees with the job functions where they are both most skilled and most needed. Knowing where our deficits lie will also allow us to maximize our return on investment for trainings, as well as qualify the training programs, finally answering "is it working" with measurable results.

Replacing facts for appearances is something actuaries have done historically, which positions us well in a world becoming increasingly analytical and data driven. Even within HR, there is significant movement toward using data to gain paradigm-shifting insights about the workforce, leading to more optimal business results. ■

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