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Technology Can Foster Collaboration Between Insurers and Actuaries. Here's How

AI, machine learning and other tools are making it easier for actuaries and insurers to react to trends and improve insurance outcomes.

By: Pinnacle Actuarial Resources Inc. | September 2024

Actuaries have long been an important partner for insurance companies. The periodic analyses they perform help insurers with everything from pricing and product development to setting accurate reserves and improving risk management.

While actuaries remain an essential player in the industry, their roles are changing. New artificial intelligence (AI), machine learning and other technologies mean that carriers can collect and analyze more data than ever. That means that actuaries can now work with insurers to help drive real-time decision-making. No one will have to wait for periodic actuarial reviews to refresh important pricing and reserving metrics.

"It's an exciting time for the industry, and I'm eager to see where it takes us in the coming years," said Aaron Hillebrandt, principal and consulting actuary, Pinnacle Actuarial Resources.

"The ideal vision is to use new technology to create opportunities for insurance companies and actuaries to more effectively and regularly communicate about actuarial metrics and trends. By doing so, we can create a more synergistic relationship that drives positive outcomes for all stakeholders in the industry."

What the Data Tells Us

Insurers have found a lot of value in their data in recent years. AI and machine learning algorithms can help price risks more accurately, manage claims better and improve the ability to engage clients in risk management.

Aaron Hillebrandt., Principal and Consulting Actuary, Pinnacle Actuarial Resources

"Predictive modeling is one past example of how new technology has been successfully incorporated into the insurance industry. It helps us better understand risk profiles and price policies more accurately," Hillebrandt said. "By implementing advanced data analytics and machine learning algorithms, we can streamline these processes and make more informed decisions."

Right now, "it's primarily smaller, more agile organizations, particularly Insurtechs, that are riding the wave of new technologies to collect, analyze and present data — designing their systems to incorporate these features and capabilities," according to Hillebrandt. While larger companies may have more to risk by embracing new technology too quickly, he expects others will soon embrace it.

"The risk for older, more established and larger organizations is significant. As with many technologies, there's a substantial risk of being left behind if they don't start considering how to incorporate new technologies that increase data velocity and drive understanding of key actuarial metrics," he said. "Companies are realizing that they need to adapt and evolve in order to stay relevant and competitive in today's market."

In addition to modeling risk and helping price policies, tech tools can help create more personalized products for policyholders. Tools like telematics that track driving behaviors are helping insurers better price commercial auto policies, for instance. Insurtechs and other nimble organizations are researching new ways to use data and craft novel, customized insurance products.

"This data can be used to develop more personalized insurance products and incentivize risk-reducing behaviors among policyholders," Hillebrandt said.

Don't Forget to Include Your Actuary

As insurers embrace AI, machine learning and other technologies, they'll want to work with their actuaries to share data and drive results. "Actuaries are powerful quantitative partners, and the goal should be to optimize both the human and the machine, leveraging the strengths of each to better run the business," Hillebrandt said.

Actuaries can help insurers analyze their data and pick up on trends. "Sharing information more frequently and fluidly can provide early warnings when certain types of vehicles or other factors seem to be trending in a novel direction. This allows us to conduct predictive analysis that goes beyond just the emerging data points," Hillebrandt said. "Insurers should prioritize generating real-time outputs that actuaries can access and analyze securely."

Two-way secure data-sharing can allow for the quick identification and real-time analysis of loss trends. Rather than relying on periodic actuarial reports, insurers can act on what their data is telling them in the moment.

“It gives companies a clue about what’s happening in the interim,” Hillebrandt said. “We could help nip issues in the bud to some extent by having access to more timely data.”

By continuously sharing data, rather than gathering it specially for periodic reviews, insurers will gain additional insight into their performance that will hopefully save money in the long run. It can also cut costs by removing the need for periodic special projects where employees need to manually summarize data for an actuary.

“The data required for actuarial analyses was often compiled specifically for the actuary and not used frequently for other purposes, leading to inefficiencies and significant lags in learning for both parties,” Hillebrandt added.

A Strategic, Tech-Savvy Actuarial Partner

Actuaries play a critical role in conducting risk analysis: calculating indicated reserves and premiums, optimizing reinsurance attachment points, and conducting captive feasibility and re-feasibility studies.

Those tasks remain necessary and important. But in today’s tech-enabled world, insurers and captives should seek to partner with an actuary that’s committed to leveraging new technology to handle data and respond to ever-shifting exposures and market dynamics.

“This goes beyond historical data and future projections, examining the overall performance of the program to determine if there is capacity for change,” Hillebrandt said.

“The goal is to find the optimal balance between risk retention and risk transfer from a financial perspective.”

Pinnacle Actuarial Resources is committed to remaining a trusted partner as insurers embrace a new, technologically driven future.

“We can be part of the process to advise insurance companies on strategic decisions such as retaining versus transferring risk or the deployment of capital,” Hillebrandt said.

“The company can make better business decisions if actuaries are a part of that conversation, serving as strategic advisers with a seat at the table.”

For P&C insurers, investing in new technology is paramount to navigating the challenges posed by today’s market — which has had to respond to new threats like cyber exposures and an uptick in familiar perils like natural catastrophes in recent years.

"Companies are recognizing the importance of not only investing in technology but also partnering with an actuarial firm that is equipped to navigate the future and its challenges," Hillebrandt said.

To learn more, visit: https://www.pinnacleactuaries.com/.

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