

# Opinion: The formula for success in insurance data science

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Insurance companies across the globe are actively looking for ways to enhance organizational efficiency, boost policyholder retention, and control operating expenditures, especially considering increasing combined ratios, intense competition, and changing customer service expectations. But, are insurers looking for solutions in the wrong place?

Consistent underwriting losses across most insurance lines of business point toward the need for improving risk selection, enhancing pricing accuracy, and minimizing claims leakage. Moreover, there is an industry-wide consensus that the practical application of data analytics engines, leveraging intelligent technologies, and gaining the ability to exploit Big Data, will prove invaluable for ensuring profitability in an industry facing soft markets, a significant increase in losses, and the threat from insurtech challengers.

Insurance has always been a data-driven business, but the industry has long failed to fully realize the value trapped in the data. However, the proliferation of new data sources and rapid advancement within the practice of data sciences is miraculously giving way to innovative use cases of descriptive, predictive, and prescriptive data analytics with proven potential to transform the insurance industry.

Acknowledging the relative immaturity in the way the industry deals with data, insurers looking to embed data analytics strategically across the insurance lifecycle must have a well-calculated, phased plan. Too much, too fast can have detrimental effects on the business at-large, causing more harm than good. While buzzwords such as “digital transformation” are thrown around casually, adoption of any next-generation technology and its integration with existing legacy systems is easier said than done. When architecting a large-scale data analytics program, insurers must be cognizant of the need to continue to work toward data maturity.



This forward movement along the data analytics maturity curve also involves making certain that the right information is being gathered, continuing to develop new data models, and constantly assessing the expected business benefits that can be derived from deployment. From customized reports that enhance visibility to advanced analytics that provides insights and predict favorable outcomes with superior accuracy, the journey is arduous, but sure to create business value for insurance organizations.

Property and casualty (P&C) insurance, in recent years, has shown significant interest in the application of advanced data analytics to boost decision-making speed and accuracy for core insurance activities across claims, strategic pricing, distribution, marketing, customer service, underwriting, actuarial modeling, and more. The issue in this kind of initiative becomes a question of availability of the data, as well as the overall data quality or cleanliness. In short, it's not enough for any given insurer to know the right data exists in-house, it must be in the right format and accessible at the right time.

This means that in order to be truly useful for enabling analytics, data cannot be segregated or siloed and must be shared enterprise-wide with controlled access for users at all authority levels. Moreover, data analytics must be an inherent part of data mastery from storage to delivery, across all critical insurance functions. As insurers move toward more holistic application of data analytics, there are areas where solid use cases are emerging more quickly than others:

- › **Pricing Optimization** Boosting customer acquisition and enhancing customer retention while increasing profitability is a tough ask for any company, let alone an insurance company with only a median level of data maturity or mastery. By deploying a customized pricing model that begins with the base premium and optimizes it for profit, revenue, retention, and conversion, insurers can achieve a balance between volume and profitability in line with organizational business objectives. The model can be configured to optimize pricing in different business scenarios. For instance, increasing market penetration would require prices to be made more competitive, which can be achieved using the model. The analytics engine powered by various data models such as those relating to premium elasticity, issue rate, retention, or market basket analysis enables underwriters to create quotes quickly and efficiently while ensuring the price quoted is not in conflict with any critical business parameters.
- › **Bind Ratio Analysis** Aggregating and analyzing data from multiple enterprise systems such as underwriting, policy administration, claims, or CRM system can enable insurers to derive actionable insights for improving the quote-to-bind ratio. The analytics engine processes the data to enlist critical parameters that influence that ratio, divides submissions into homogenous groups based on those parameters, and identifies customer segments with greater business potential.
- › **Fraud Detection** Fraud is a major driver behind claims costs, contributing significantly to the status of claims as an insurer's biggest cost center. Advanced analytics, and even artificial intelligence (AI), can be employed to augment fraud detection workflows, increase accuracy, and reduce human effort. A sequential and multi-layer analytics engine can churn structured and unstructured claims data, policy data, and data from external sources like financial bureaus, weather information aggregators, and other third-party data providers to increase fraud detection significantly. It is also capable of delivering critical insights through a detailed dashboard to help identify new fraud patterns and accelerate decision-making.

- › **Customer Segmentation** Finally, the process of targeting the right customer through informed marketing efforts can be completely transformed with the application of data sciences. Based on lifetime customer value (LCV) and policy lapse rate, insurers can tailor a sales strategy to boost retention, and moving away from a rules-based segmentation approach towards predictive analytics can help insurance organizations improve topline growth. With advanced analytics, companies can predict the tenure of a customer (survival models), anticipate the revenue from cross-selling, up-selling, and referrals, and optimize marketing programs to boost marketing ROI.

Many insurtech startups have built capabilities around Big Data and advanced analytics by working closely with insurance industry participants on large-scale data science projects over the years. Leveraging that in-depth domain knowledge and varied experience can help insurers launch analytics programs quickly and gain a sustainable competitive advantage while ensuring greater ROI.

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