Predictive Analytics

The Future of Claims Management

Many insurance staffing agencies predict that the insurance industry will have experienced a significant decrease in the number of claims professionals by 2022. The majority of current insurance claims operations staff are experienced professionals with retirement looming over the next decade, as a result claims departments will lose significant historical organizational, operational and industry expertise. These evolving dynamics present a variety of issues, primarily of which is the claims leaders ability to manage available resources effectively while attaining organizational objectives.

In anticipation of the impending change in the workforce, some larger claims operations are already making improvements to their claims systems and implementing a more refined approach to segmentation for early identification of high risk claims and routing of work to appropriate claims handling workstreams. However, predictive analytics, an as yet underutilized tool, has promise to be a more effective solution to the impending shortage of experienced claims personnel dilemma.

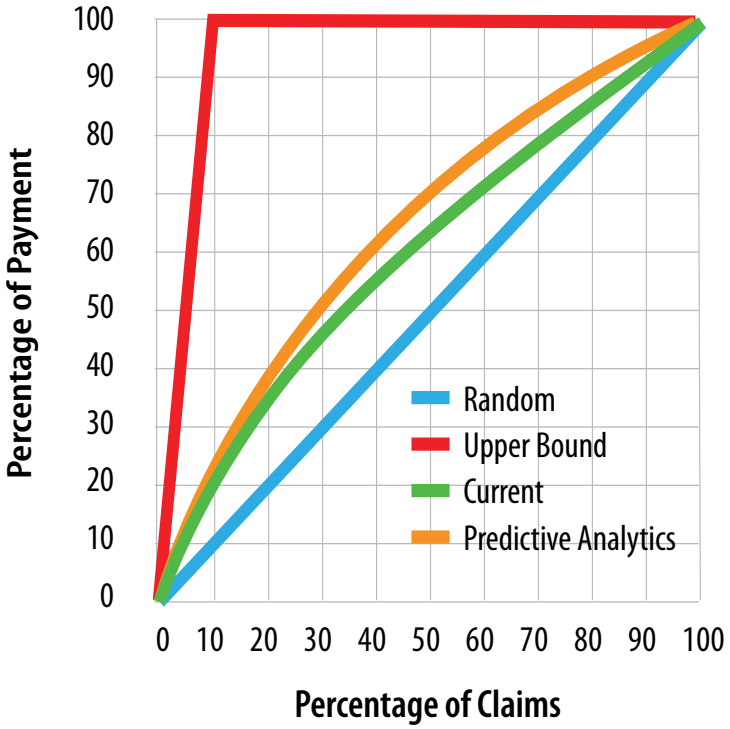
Insurers already utilize predictive analytics to enhance analytical processes and improve underwriting results, but from a claims standpoint, predictive analytics is still in its infancy. The incorporation of predictive analytics into a claims organizations operations can improve profitability by identifying key areas for enhancing efficiencies, and achieving greater consistency around triage and case strategies. In light of the ever-changing nature of claims, driven in large part by external forces (e.g., legislative and judicial changes) combined with the anticipated and significant demographic shift in future claims staff, claims organizations should begin planning now to identify solutions to address these challenges.

An Industry Perspective on Predictive Analytics

By definition, predictive analytics is a process that transforms raw data into signals that can help predict future actionable outcomes. Organizations may use predictive analytics across the entire insurance life-cycle, from identifying target markets to optimizing claims adjudication processes to overall risk management. In fact, market leaders take an enterprise view of predictive modelling, and focus not only on efficiency, but also on strong internal analytical resources and state-of-the art technology.

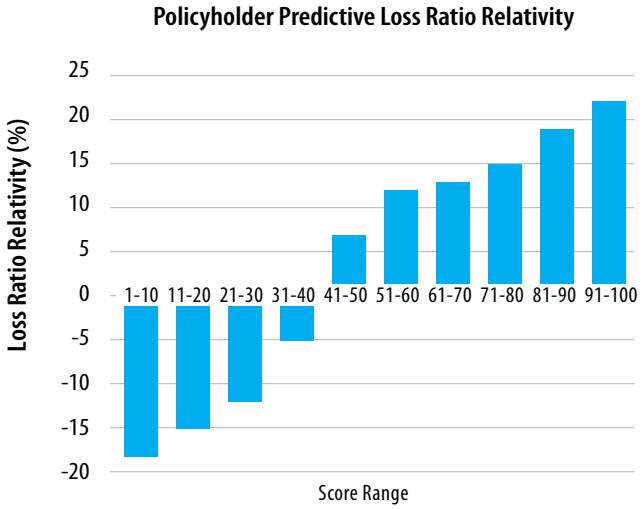
The number of carriers that use predictive modeling to support underwriting, claims and distribution has increased significantly over the past five years, and industry trends suggest this reliance on predictive analytics will continue to increase. As organizations incorporate related tools and techniques into their core processes and decision making process, they should consider the state of the market and other key considerations.

A closer look at the insurance industry reveals that market leaders have better internal modeling capabilities by virtue of faster IT development, greater alignment of strategic processes, and buy-in at the highest levels of the organization. They focus on improving predictive analytics capabilities, while struggling to overcome technological challenges and limitations in process alignments. Prior to detailing the specific areas in which predictive analytics can add value to a claims organization, the organization should identify measures, such as gain charts and lift curves, to demonstrate the benefits, or "predictive power," of applying these advanced modeling and analytical techniques. Gain and lift values are especially useful when an organization uses decision trees to prioritize its efforts.



Line of Business	State of the Market	Key Considerations
Personal Lines	• Majority of carriers incorporate credit scoring, motor vehicle records and prior claims experience in pricing, marketing and underwriting to reduce the potential for claims/fraud. • Carriers use analytics to promote self-service at the point of sale and improve policyholder retention.	• How do carriers differentiate when most use the same external data? • Cross-selling and up-selling has not caught up to the analytics. • High level of regulation places limits on the data that can be used.
Small Commercial	• Significant growth in the use of predictive analytics in underwriting and claims applications. • Less regulation facilitates greater use of internal and external data. • Predictive analytics drives straight-through claims processing and automated underwriting in certain segments.	• Not all carriers have enough data to build class or state specific predictive analytics solutions. • Underwriters and agents are beginning to support automated decision making. • Predictive analytics can incorporate policyholder behaviors to improve loss control, reduce fraud and facilitate premium audits.
Middle Market/ Specialty	• Risks are more heterogenous than in other lines. • Emerging application of predictive analytics in professional liabilty lines over last three years. • Less regulation facilitates greater use of internal and external data. • Limited use of straight-through claims processing.	• Low frequency/high severity lines result in a small volume of quality data, which poses modelling challenges. • More difficult to get buy-in from underwriters and agents.

Predictive Analytics (continued)



Lift Curve

A lift curve measures the degree of segmentation, or the predictive power, of a predictive analytics solution relative to the average. In the absence of predictive analytics or other segmentation tools and techniques, an organization can expect, at best, to achieve the average (e.g., loss ratio). With predictive analytics, an organization can segment the entire population of risks it has accepted on the basis of which risks the organization expects to perform better or worse than average. In the example below, an organization expects policyholders with a score between one and ten to have a loss ratio which is 18 percentage points lower than the average, while predicting a loss ratio 22 points higher than the average for those policyholders with a score between 91 and 100. The difference in relativities between the best and worst segments is the degree of segmentation power, or 'lift'.

Current Use of Predictive Analytics in Insurance Organizations

Applying predictive modelling techniques within the claims function can help an organization reduce claims costs and improve operational efficiency. These analytics give organizations the tools they need to better prepare for the future, utilize resources more appropriately, and ultimately optimize results. Within the claims function, predictive analytics has potential benefits in claim segmentation, fraud detection, recovery, counsel and vendor management, and operations and controls. Historically, more volatile claims were not assigned to skilled claims analysts until case reserves had already deteriorated, which often was too late for the adjuster to impact costs significantly. With predictive modeling and establishing a claim segmentation process, an organization can improve efficiency and costs by identifying potentially volatile claims earlier based on specific claim criteria and directing these claims to the most appropriate claims professional. This process also allows an organization to establish a fast track claims processing unit for the management of a homogenous group of relatively large volume of low severity claims. A company also can use analytics and segmentation to determine optimum settlement authority limits while streamlining operations.

The current approach to detecting fraud for most organizations is largely reactive. Predictive modeling offers near real time analytics to identify cases with a high propensity for fraud at each stage of the claim. The model can capture data elements to address both policy holder and third-party fraud. The effectiveness of fraud detection increases when combined with text mining, which allows for searching within claims adjuster notes. These notes often are the only source of internal information that can be incorporated into the model.

Under certain circumstances, an insurance company can recover a portion of its claims costs from a third party; for example, an insurer may be able to recover a portion of costs of a workers' compensation claim from an equipment manufacturer if the workers' injury resulted from an equipment malfunction or faulty design. The insurer often can recover a

Functional Area	Enhancements from Application of Predictive Analytics
Rating and Pricing	• Developing/modifying rating plans • Optimizing layers of attachment • Improving reinsurance placement • Strengthening pricing accuracy
Underwriting	• Selecting lines of business • Predicting policyholder profitability • Identifying geographical targets • Applying exclusions
Claims	• Improving segmentation • Expediting recovery • Improving fraud detection • Enhancing Counsel and vendor appointment/ management • Optimizing loss control processes and controls • Gaining efficiencies
Distribution	• Strengthening Agency and Broker appointment • Optimizing commission • Improving expansion • Improving oversight
Customer	• Expanding cross-sell and up-sell • Increasing renewals • Improving Policyholder experience • Decreasing costs

Claims Function	Benefits from the Application of Predictive Analytics
Segmentation	• Earlier detection of potentially volatile claims for better claim management • Fast track claim processing for a large volume of low severity claims • Determination of optimum settlement authority • Streamlining of operations
Fraud	• Identification of claims with a high propensity for fraudulent activity by the claimant or a third party • Most effective when combining analytics with text mining
Recovery	• Assessing the cost/benefit of recovery efforts • Early identification of claims with potential recovery opportunities • Determination of staff assignment for claims with highest recovery potential
Counsel and Vendor Management	• Leverage buying power at the enterprise, as well as adjuster or regional level • Measure counsel and vendor performance for better segmentation, identification of problems, and cost savings • Detailed cost analysis to lower costs, monitor contract compliance and identify alternative vendors
Operations and Control	• Identification of operational /control triggers allowing for earlier management intervention • Positively impact areas such as average settlement costs and time to settlement

larger amount more quickly if an experienced adjuster handles it. Not only can predictive modelling measure the cost/benefit of recovery efforts, but early on also can identify for segmentation to the appropriate resource those claims with the greatest recovery opportunity. For example, predictive analytics can help an insurer determine thresholds or criteria for collection risk levels, which can enable it to pursue recovery effectively and efficiently by quickly assigning these claims to the corresponding internal or external resource.

Current methods of evaluating counsel and vendor performance reside at the adjuster or regional management desk. As a result, buying power is not fully leveraged at the enterprise level, where invoice reduction affords the only real opportunity for costs savings. With predictive analytics, an organization can measure relative and absolute counsel and vendor performance, which allows for early segmentation, identification of red flags, and reduction of overall costs. A model can evaluate costs by service type, location, frequency, industry and policyholder, as well as determine the impact on ancillary benefits. As a result, management can better quantify expected costs/savings resulting from enhanced vendor oversight, more accurately measure contract compliance, and target alternative vendors better suited to address a specific need.

The ability to identify triggers and red flags independently of desk-driven upward communication improves opportunities for management to provide appropriate oversight and timely intervention, as well as to enhance processes and controls. Predictive modeling enables organizations to combine their reliance on the individual claims professionals and claims management staff with a variety of tools, including:

- Segmentation of individual claims and claims professionals' responsibilities;
- Improvement in the effectiveness of claims procedures;
- Measurement of claims staff, outside counsel and other service provider performance;
- Facilitation of reinsurance reporting; and
- Improvement in overall claims management.

The use of predictive modeling coupled with traditional upward communication to improve claim management can favorably impact average settlement costs, average number of days open by exposure type, impact of litigation on the number of days open or settlement value, and the impact of socioeconomic and comorbidity factors on claim costs.

Conclusion

Organizations planning for long term success should incorporate predictive analytics in their routine claims operations. Several factors, including the predicted decline in the number of claims professionals, as well as ongoing pressures to maximize efficiencies, stay competitive and operate with top tier performance, make use of predictive analytics not just a luxury, but a bare necessity. ●

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