Building Believers: How to Expand the Use of Predictive Analytics in Claims
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Executive Summary

Insurers have used predictive analytics successfully and broadly in pricing and underwriting applications for some time. If you read the latest material from industry analysts and articles in IT and claims magazines, you can deduce that most insurers should be well on their way to deploying predictive modeling for well-defined improvements in the claims arena.

However, after conducting interviews and research on adoption rates, The Gorman Group and SAS reached a different conclusion. Insurers underutilize predictive analytics as a method for getting the full value out of their claims data. As insurers adapt approaches to retaining or growing business, many are still struggling to take advantage of the business value that’s available in the claims operations data generated through customer interactions.

The Gorman Group and SAS conducted research to answer two strategically and operationally pivotal questions:

- Given that predictive analytics applications have been around for a while, why aren’t they more widely used in claims processes today?
- Even though many insurers don’t currently use predictive analytics in claims applications, more than half of the organizations surveyed felt they would be using them in the near future. Why is that?

The greatest clarity came from interviews with two groups: predictive analytic executives serving their claims department counterparts, and claims executives responsible for departmenal results. Responses enabled us to identify key organizational issues that positively and negatively affect the development and use of predictive analytics by the claims department.

Ultimately, our discussions made it clear that organizations need to place a primary corporate focus on overcoming inhibitors by using change management to increase the use of predictive analytics in claims.

The successful initiatives we identified show that the leader of the change must do three things at once to change an organization’s behavior:

- Provide clear direction.
- Change the organization’s situation or environment that is influencing the behavior.
- Influence not only the environment, but also motivate the key personnel.

This white paper provides our research findings while outlining the market changes that have boosted the priority of predictive analytics in claims. It focuses on why the use of predictive analytics in claims departments lags that in pricing, underwriting and marketing departments. It also outlines the change management tactics that are required to increase the priority of predictive analytics for claims, and it describes emerging trends that will affect future adoption.
Expanding the Use of Predictive Analytics in Claims

In a recent market survey, the use of predictive analytics in claims applications significantly trailed its use in underwriting and pricing. More than 70 percent of carrier respondents indicated current use of predictive analytics for personal lines auto pricing and rating, and nearly 70 percent rated predictive analytics important to loss-ratio improvement. Yet only 12 percent currently use predictive analytics for claims administration. More importantly from a claims perspective, while 19 percent use predictive analytics for fraud detection, only 7 percent use it for adjuster assignment, 7 percent for litigation and only 5 percent for case reserving.

The striking part of this disparity is that while 70 percent see predictive analytics as important to loss-ratio improvement, the actual use of predictive analytics for claims improvement is low. Also striking is the apparent pent-up, senior-level demand for the use of predictive analytics in claims.

When asked about plans to use predictive analytics in claims, an additional 51 percent of respondents said they plan to use predictive analytics for fraud detection, while 53 percent plan to use it for adjuster assignment, 56 percent for litigation and 41 percent for case reserving. Finding the reasons behind this disparity between current usage and desired or planned usage became a focal point of our research. To investigate, we examined the current market trends that have created inhibitions to adoption as well as current market incentives for greater investment. Our goal was to provide insight to organizations that wish to adopt predictive analytics as part of their claims processes.

The Rationale for and Influence of Predictive Analytics in Claims

The potential benefit of predictive analytics for the claims process is apparently not a new or emerging issue in the market. Reviews of recent articles and white papers provide multiple examples showing rationale for expanding its use in claims. Figure 1 is a table of the top reasons for investment. It is interesting to note that five of the reasons are identified in at least half of the sources. Those top five reasons are:

- **Management of claims severity.** With 50 percent of workers’ compensation claims generating 90 percent of claims costs according to one study, early identification and appropriate handling of that 50 percent can dramatically influence total claims severity. Another study used predictive models to segment workers’ comp claims by severity, finding “the highest scoring claims are 25 times more costly than the lowest scoring claims.” Finally, the impact cited in one study for the use of predictive analytics for claims triaging and adjuster assignment was up to 10 percent in loss cost savings.

4. Bingham et al.
• Reduced claims processing and indemnity costs, and improved settlement consistency. One individual interviewed outlined how predictive analytic models were used to reduce loss adjustment expense (LAE) by 10 percent. This was accomplished overall in spite of a 35 percent reliance on outside resources that meant the internal improvement goal was 15 percent. Another study cited the opportunity to reduce the 30 percent of staff time allocated to administrative duties like trying to track down customer data. The efficiency improvements identified in this review applied across the life cycle of a claim.

• Minimized fraud costs. Some of the results of using predictive analytics for fraud included capturing twice the dollar volume of fraud (impact), tripling the fraud investigations with the same people and reducing investigation time by 80 percent. Overall, the effect on fraud involved three aspects: Increase in total fraud detected, minimization of the false-positive rate and reduction of the fraud investigation expense. The fraud examples that were provided involved medical providers, attorneys and repair shops.

• Better adjustment decisions. One organization reduced payments on suspect provider billings by 99 percent based on improved adjuster information. Another analyzed more than 750,000 lost-time claims and more than 125 million medical billing transactions to build a predictive model that accurately identified the outlier claims on an additional 200,000 lost-time claims. The research cited recognized the relationships of people, process and technology changes required to enhance overall organizational outcomes.

• Improved straight-through claims processing. Combined with workflow and rule engines, predictive modeling establishes the metrics for small claims handling processes and for adjuster assignment of complex claims. It also minimizes claims handling costs for both complex and simple claims.

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Figure 1: Top uses for predictive analytics in claims.

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Predictive Analytics Adoption in Claims

No one we interviewed questioned that predictive analytics in claims would provide significant value. So why are claims organizations in general slow to respond? Paradoxically, we found that the requirement for getting a claims organization to move forward is not the need to convince it how predictive analytics will provide value. Instead, it requires a focus on removing, minimizing or overcoming the issues that inhibit the claims organization from adopting predictive analytics in the first place – and then applying the change management discipline needed to assure success.

Historically, the primary inhibitors to the required changes have been identified as corporate culture, threat of litigation and increased regulations – with an emerging concern from an enterprise risk management standpoint. However, these inhibitors are too vague for most organizations to address directly.

While the list differed among organizations, and the priority of each reason was different, the top six primary reasons remained relatively consistent. They were:

• The inability of those promoting predictive analytics to guarantee better results.
• The perceived potential legal risks of using predictive analytics in claims.
• Competition from other high-priority projects that required the same resources.
• Lack of agreement about whether only LAE or both indemnity and LAE are, or should be, affected.
• A general skepticism or lack of understanding about the expected effect predictive analytics would have on core claims metrics.
• The scope and scale of business change management that’s required (including people, process and technology).

Recent research provides a number of metaphors for analyzing the required organizational focus for change management. The bottom line is that successful organizational change shares a common pattern: It requires focusing on three things at once. To change an organization’s behavior:

• Senior management has to have and provide clear direction.
• The organization’s situation and processes must be streamlined, with impediments removed.
• The affected business units must be motivated to leave the comfort of traditional ways of doing business and take on the discomfort required to make the necessary changes.

We will review the inhibitors and submit our recommended ways to overcome them.
Inhibitor 1: Uncertainty About Predictive Analytic Results

The claims managers we spoke to are, in general, very transactional and results-oriented. Predictive analytics have to illuminate something they don’t already know about a claim, or streamline and improve their decisions regarding settlement. But predictive analytic initiatives often simply validated information the claims people felt they already knew, and didn’t improve upon their intuitive settlement decisions.

Historically, many predictive analytics resources agreed with this viewpoint. One analytics person we spoke with had to tell his claims department client, “We know what you want – but can we pull this off technically and will it make a difference is unknown.”

Finally, one organization we talked with indicated that its predictive model for claim triage requires more than 30 characteristics, of which 15 are new and have not been requested previously. Without crystal clarity regarding the positive impacts, this extra effort can cause organizational issues in the rollout and ultimately in adoption of the predictive model.

Recommendation: Develop clear metrics supported by data

To increase the perception that predictive analytics can guarantee results, senior managers need to define, understand and communicate the appropriate metrics and required data. Forward momentum is easier according to the degree that these details are concrete and have an immediate effect.

As claims units adopt business objectives with metrics that reflect both top-down strategic financial performance as well as bottom-up transactional performance, the potential value of predictive analytics increases. To achieve good results, claims units must also clearly define behavioral and performance changes that are expected; streamline data capture and data entry processes; and focus on supplying and developing the people skills needed to meet organizational metrics.

Inhibitor 2: Threat of Litigation Influences Decisions

Some organizations express concern about using predictive analytics in claims because they fear litigation. They believe market perception is that use of a “black box” is an attempt to reduce required claim payments (both LAE and indemnity payments) only to benefit the company.

Examples were given of historic software tools that restricted the handling adjuster’s ability to offer higher payments than what the software recommended. As one claims manager explained, “If organizations don’t pay any more than this, it may be perceived to damage the individual insured to the benefit of the company. Policyholder’s counsel is looking for formulaic responses that conflict with the insuring agreements.” Some individuals feel policyholder’s counsel may have a case due to this perception that in building the predictive model, the client’s interest was placed below the company’s welfare.
Recommendation: Create a comprehensive model lifecycle management process

Once again, business objectives and performance metrics need to reinforce the goal. It’s important to employ as much transparency as possible for the rationale of the predictive analytics recommendation. This helps adjusters ensure that they are keeping the policyholder’s best interest at heart. Clear communication will prove that giving adjusters better information helps to balance the insured person’s needs and interests with the terms and conditions of the policy.

With clearly articulated goals and metrics to measure organizational value, the simple threat of litigation should no longer deter insurers from developing and using predictive analytics in claims. As one claim executive adamantly explained, “People will sue no matter what you do as an insurer – they will find a reason. Insurers shouldn’t make strategic business decisions because of the fear of litigation.”

Predictive modeling technology has evolved to include full transparency into complete model lifecycle processes. Now there are fully integrated data management, model development, model deployment and model-management technology platforms that can accelerate model development and deployment while tracking and documenting the required information to help manage any perceived legal risks.

Inhibitor 3: Competing IT and Claims Processing Projects

A midtier insurer provided detail. “At this point, predictive analytics is not a large portion of the strategy. Of more importance is dealing with multiple claims systems, dealing with inadequate processes and workflows, and fixing the inner workings. The drivers are to make the systems and processes more efficient and more effective. The data foundation and groundwork are needed at this point.” From an analytic perspective, the data issues are the most important. As one insurer said, “The data is poorly organized in the warehouse. We were late coming to a poorly designed dimensional database architecture, and late to the core strength of ETL and systems architecture. We don’t strictly obey governance rules, and we are still getting a claims dimensional data mart in place.”

From our research, fixing the data environment is also a primary catalyst for investment in new processing systems. Under conventional approaches, the focus on replacing processing systems prohibits a concurrent focus on predictive analytics.

Recommendation: Align predictive analytic data requirements with IT initiatives

The key to overcoming this inhibitor lies in including predictive analytics requirements in the holistic design of all claims IT projects. For organizations that are undergoing claims transformation projects, it’s important to take into account both the analytic data management requirements and the operational requirements for developing a transactional predictive analytic infrastructure. Doing this reinforces management’s strategic directive that data-driven decision making influences the organization’s long-term success.
Inhibitor 4: Failure to Pursue Both Indemnity and LAE Impacts

Historically, the predominant reason for considering predictive analytics in claims has been to work smarter in operations rather than to influence the full claims financial (LAE plus indemnity) outcome. In other words, some expect predictive analytics to influence LAE, but indemnity payment severity is considered a secondary objective at best. Unlike its application in pricing and underwriting, a predictive analytic model then becomes perceived as “not a giant game changer, but one of the small process improvement levers left to claims managers.”

According to our research, the impact on claim severity must also be a predictive analytic focus. The potential value on indemnity payment is to help insurers make the right payment – not make the lowest payment or the fastest payment or the most intuitively acceptable payment.

One executive said it best. “People artificially think that you shouldn’t touch the indemnity as you are going against the core practice of insurance; we should start with the indemnity and not think of it in terms of providing poor service and getting away with more – rather thinking about it in more loss impact terms.”

Recommendation: Target all financial aspects of the claim

Overcoming the roadblocks to acknowledging that both indemnity and LAE are affected by predictive analytics requires focusing on a more statistically holistic view of claims. It is more sophisticated than just the claims amount paid. It’s more about the holistic financial picture – retention of good clients, management of product changes, retention of policyholder surplus, etc. To pay claims without predictive analytics neglects the power of understanding the relationships among the readily available data. To do so without consideration of both indemnity and loss adjustment expense is to underutilize the power of predictive analytics.

Inhibitor 5: Relying on Adjuster Intuition – Not Data – to Make Decisions

Given the emphasis by most claims departments on operational efficiency, cost reduction and expense management, each of the interviewees cited claims department skepticism as a current or past inhibitor to rapid deployment of claims predictive analytics. This skepticism is based on the perception that intuitive decisions made by experienced claims individuals can outperform the science of statistical models.

The “intuition-versus-science” perception was also reflected in expressed concern about the capability of a statistical model to equal or outperform an experienced adjuster’s ability to determine legal liability, set percentage of fault or accurately determine reserves. Concern was also expressed about the loss of intellectual property and business acumen by expanded adjuster reliance on model-driven “black box” decisions.

On the surface, the skepticism appears historically justified. As one analytics manager stated, “We don’t have a lot of points on the board and not a lot of bragging rights.”
Recommendation: Start where your data is strong

A tendency to want to be less data analytic-dependent may be a natural byproduct of an organization’s skepticism about its data completeness and accuracy. Organizations should look at where they have good data and develop predictive insight to drive ongoing, iterative changes in the claims outcomes.

It’s then important to develop what one interviewee called “believership” – a community of people who believe the predictive analytic initiative will help them. Believership starts by persuading the leadership team (line of business and claims leadership) to become believers. It is then important to recruit believers from the claims department to infuse a focus group or a thought leadership group with enthusiasm for predictive analytics.

In the end, the only way organizations are likely to adopt and take full advantage of predictive analytics is by changing adjusters’ behavior. To achieve this, predictive analytics must be woven into the adjuster’s mindset as an additional piece of information that will enable him to provide better outcomes.

Inhibitor 6: Limited Change Management Focus

As one claims manager said, “Predictive analytics seems not to have a natural home in claims like it has in marketing, pricing or underwriting. It is more about improvement in business process management. Much of what they are doing in claims is complex, and claims routing is hard.” Predictive analytics sets in motion the potential disruption of existing claims operational process models, many of which have been established, tested and validated over many years. Process concerns also arise from skepticism regarding the loss of personal touch on the investigative aspect of claims management.

As one claims manager said, “While the focus is on getting a predictive analytic tool and on finding patterns in the data to predict future outcomes, no matter how complex the issue only one-third of the effort is on the predictive analytic part of the initiative. Adoption represents two-thirds of the effort and requires a decent model that people use regularly more than a perfect model that never gets used.” Insurers must seek to create a more interactive claims experience that uses predictive analytics to drive increased efficiency. To date, the inhibitors have outstripped the incentives for moving in this direction.

Recommendation: Build believers to evolve the claims culture

As the labor pool for experienced claims adjusters becomes strained, claims organizations can replicate insights of experienced claims adjusters and utilize statistical models to augment the adjudication process for less-skilled adjusters. Also, the “millenials” joining the workforce today exhibit a relatively high level of sophistication when interacting with computing systems.
Although adopting predictive models may further replace human interaction (and this evolution has perceived negatives), there may not be a realistic alternative that will be able to preserve the traditional claims management approach. Enabling predictive models to interact with claims processing systems creates a realistic alternative to preserving the traditional claims adjudication process.

Resolving these issues requires a focus on change management. The following interview provides more details regarding how different claims organizations are building believership and managing the change management process.

**Interview Takeaways: Is Your Organization Ready for a Change in Claims Management?**

In our discussions with claims executives, it became apparent that any effort to accelerate predictive analytics deployment and utilization must start with assessing the implications that data-driven decisions will have on processes and people in the workforce. Claims organizations tend to have strong work cultures, committed to delivering on their key organizational objectives, all the while looking to improve the customer’s experience throughout the adjudication process. The predictive analytics executives we talked with identified the power of the culture as a good way to influence the legitimacy and use of data-driven insights. They focused on a few key questions. “How do I set up the correct business process to assure receptivity? How do I manage these projects so as to not ‘overpromise and underdeliver’? What is the right mix of the claims adjuster’s knowledge and experience matched to the claims model scores?”

During our interviews, those executives seeking greater adoption by claims managers and adjusters applied significant energy and effort to their endeavors. As one executive stated, “Due to ‘process issues’ with prior predictive modeling projects, a fair degree of skepticism was present in the organization. We set up a process that is both transparent and uncomplicated.”

This executive’s view is that the actual predictive model building is only one-third of the process; two-thirds is about using the model post-deployment. To help resolve communication and credibility issues during deployment and use, he recommended enlisting claims subject-matter experts (SMEs) and the actual users early in the project development process. This establishes commitment from a team of critical supporters.
This approach will enable claims organizations to make full use of their existing intellectual capital, while creating a change process to influence standard adjuster-driven intuitive claims processes. By using multiple predictive model interactions in the workflow, organizations can counteract the looming impact of losing their experienced adjusters – while taking advantage of newer technologies that can attract a younger millennial workforce.

Another claims executive articulated the importance of not using predictive model insights as a “gotcha” with claims adjusters. “It is crucial that adjusters know the model insights are just one other piece of information they can use to provide them an added level of comfort in knowing their decision around claims handling is validated. The model score augments the skills that adjusters bring to their jobs every day.” Credibility comes from management commitment to give adjusters the final say. He continued, “The models only give us what the numbers say. As you deploy more and more models, you have to continually communicate that this is just another tool in their arsenal to improve the claims handling experience.”

Conclusions and Next Steps

While our findings do not reflect the current situation at any specific organization, they were consistently and repeatedly identified by interview respondents. The final outcome is clear: Predictive analytics use by claims departments lags the use of predictive analytics in pricing, underwriting or marketing. Organizations that are looking to better address the needs, issues and concerns of their claims department and increase the use of data-driven decisions must focus on removing the inhibitors to expanded use of predictive analytics.

To do this, significant change needs to take place for most insurers. Managing the change isn’t an easy task. As pointed out in Switch: How to Change Things When Change Is Hard, this level of change requires a holistic and multilevel approach. And the development of the required believessorship means that all three change parameters need to be addressed. Specifically, organizations need to be able to:

- **Set direction.** What looks like resistance is often a lack of clarity – so providing crystal-clear direction is important. For faster, better adoption of claims predictive analytics, management must set the direction. Consistent clarity about direction is required for long-term success and broad application of predictive analytics.

- **Motivate the organization.** With multiple changes in play, what looks like reluctance is often exhaustion. It is critical to engage peoples’ emotional sides – to get them motivated and on the path to change. It’s primarily important for claims to manage the cultural implications of moving to fact-based decision making versus relying on the claims department’s experience and longevity of the claims adjusters.
• **Shape the situation and environment.** What looks like a people problem is often an organizational issue. When you shape the environment, you make change more likely. Providing holistic solutions with iterative analytic development and delivery capabilities along with constant process improvement will eliminate the inhibitors to using a streamlined, fact-based decision-making process.

Insurers must address all four dimensions of change: people, process, technology and organization. Of the four, they tend to invest in current technology that’s available for the insurance market – but often at the expense of the other three. Keeping the four dimensions of change in balance is critical.

Finally, our recommendation is to identify not only the scope but also the priority of the needed changes. It’s also important to apply the recommended solution to the right metrics and the right organizational performance goals. That is the best way to take early advantage of analytics in the claims arena.

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<th>Inhibitor</th>
<th>Recommended Approach</th>
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| Uncertainty About Predictive Analytic Results | • Clarify the business objectives.  
• Focus on well-defined and clear metrics as outcomes of the predictive analytic initiative.  
• Ensure analytic resources are in place. |
| Threat of Litigation Influences Decisions     | • Avoid the impulse to react to the potential legal risk.  
• Balance the need for change with appropriate risk evaluation.  
• Make sure your model lifecycle process and approach are well-documented. |
| Competing IT and Claims Processing Projects   | • Incorporate predictive analytic data standards into all claims IT projects.  
• Move from an “either/or” to a “both/and” mindset when developing business requirements for core system replacement.  
• Focus on well-defined and clear performance outcomes of the predictive analytic initiative. |
| Failure to Pursue Both Indemnity and LAE Impacts | • Build awareness of and commitment to a holistic approach, not a singular focus.  
• Build and implement both frequency and severity models.  
• Design flexible rule and workflow environments. |
Relying on Adjuster Intuition – Not Data – to Make Decisions

- Start where you know the data will support an effective model-building effort.
- Build believership among key people from senior management through select field adjusters.
- Don’t require adjusters to base claims decisions solely on the model; let model scoring be “an additional piece of information.”

Limited Change Management Focus

- Put key individuals in place to manage the development and deployment aspects of predictive model claims scoring.
- Align people, process and technology in a comprehensive, project-driven approach.

Figure 2: Inhibitors and responses to limited use of predictive analytics for claims.

For More Information

Learn more about predictive claims analytics for the insurance industry.

- Visit the SAS® for claims analytics website: sas.com/industry/ins/claims-analytics
- Read a white paper about predictive claims processing: sas.com/reg/wp/corp/13728
- Contact Mark Gorman at markbgorman@comcast.net or 651-336-7122.

The Gorman Group (TGG) is a business analytics integration consulting firm that helps insurance companies define, design and deploy new business practices for using data, business analytics, predictive models and scorecards for more efficient marketing, claims and underwriting functions. TGG provides insurance companies and their vendor partners with the information, the processes – and, most importantly, the insight – to manage their businesses more effectively, more efficiently and more profitably.
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