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DATA ANALYTICS AND PREDICTIVE MODELING: GAME CHANGER FOR HOW YOU MANAGE CLAIMS... AND VIEW YOUR LAWYER

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When the winds of change are blowing, some people are building shelters, and others are building windmills.

--Chinese Proverb

Data analytics ("DA"), and its brother, predictive modeling ("PM") combined with a new and improved cousin, machine learning (also known as "Artificial Intelligence" or "AI") are gradually developing into highly effective tools for insurance companies and even self-insureds to better mitigate and resolve repetitive claims. The use of these tools has improved claims management resulting in decreased litigation and legal spend, better predictions for outcomes, and reduction in overall liability exposure. Eventually, the use of DA and PM tools will not only enable businesses to manage and resolve claims, but it may also actually prevent some claims altogether. And quite frankly, as a practicing lawyer, I applaud and am excited about all of these developments.

What Can DA and PM Do?

The combination of these tools provides an effective method for accomplishing the following:

- Accumulating all sorts of different data;
- Considering the many variables within the data; and
- Quantifying the impact of these variables.

In essence, DA and PM look at patterns within data that humans often cannot easily or consistently see and interpret these patterns in order to help predict what will happen. Data analytics and predictive modeling use factors from past claims and identify similarities and common factors in new claims to better predict what will happen in the future -- a proverbial crystal ball.

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Businesses with sufficient amounts of data relating to claims (including who asserts the claims) can use data analytics, predictive modeling, and artificial intelligence techniques to make predictions about a claim when it comes in (or even before) and to make educated decisions about the manner in which to handle that claim. Simply put, with DA, PM and AI tools, claim handlers and managers will be able to hack these claims by:

- Taking steps to mitigate claims early through more careful and tailored handling and resolution techniques;
- Better predicting the ultimate, realistic exposure presented by claims; and
- Making better decisions regarding resource allocation.

For example, "[f]or claims that experience a large unexpected development, the cause can often be traced to one or more underlying characteristics of that claim." Ernst and Young, *"Transforming Claims Through Predictive Modeling,"* (October 2011) available at www.ey.com/Publication/vwLUAssets/Insurance_Agenda_October_2011/$FILE/Insurance-Agenda_Oct2011.pdf. A predictive model might identify factors associated with large exposure claims that rarely start out that way -- the creeping catastrophic claim (a claim adjuster's worst nightmare) -- and flag any claims with the identified characteristics. This analysis would occur **before** the claims get out of hand and become large, unpredicted claims and/or incorrectly reserved claims. Conversely, DA and PM can be used to identify those claims that, on their face, look like large exposures, but which the model suggests are not likely to involve large exposures. The obvious result: more accurate claims administration and better allocation of resources all the way around.

Armed with data correlations identified by DA and PM, claim managers can identify long-term, expensive claims sooner and devise strategies for handling and/or settling these claims.

For some time, workers' compensation carriers have been using DA and PM to identify, track and mitigate claims. In light of the advantages in knowing information early, the use of DA and PM is growing -- not only among workers' compensation carriers, but also among other insurance carriers. As early as 2012, a survey of property and casualty claim officers showed that approximately sixty-three percent (63%) of claim professionals were at least beginning to explore the use of some sort of predictive analytics in claims operations. *See* WillisTowersWatson, *"Property & Casualty Insurers Benefit From Investment Activity in the Claim Function,"* (Sept. 20, 2012) available at www.towerswatson.com/en-US/Press/2012/09/Property-Casualty-Insurers-Benefit-From-Investment-Activity-in-the-Claim-Function.

Recent developments in machine learning, including the use of advanced technologies, have made great strides in the ability to uncover correlations among factors in data. *See* Lentz, Bill, *"Predictive Modeling - An Overview of Analytics in Claims Management,"* GenRe Insurance Issues Newsletter (November 2013) available at www.genre.com/knowledge/publications/ii1311-en.html. Additionally, in 2015, IBM Corporation released a new methodology called Analytics Solutions Unified Method for Data Mining/Predictive Analytics (also known as ASUM-DM), which refines and extends previously used predictive analysis tools. Specifically, ASUM-DM retains the "analytical" activities of previous data mining/predictive analysis methodologies and adds "implementation" tools (activities, tasks, templates, and guidelines), for DA and PM projects. *See* Haffar, Jennifer, *"Have You Seen ASUM-DM?"* IBM SPSS Predictive Analysis Blog (October 16, 2015) available at https://developer.ibm.com/predictiveanalytics/2015/10/16/have-you-seen-asum-dm. In a real sense, we are only beginning to understand the full potential of the predictive analytics tools and, given the recent and continuing advancements, the use of these tools outside of the insurance context is only a matter of time.

How Do DA and PM Work?

The first step in the DA and PM process is to identify the data that a business maintains in terms of both time scope and categories of information. For example, a large insurance company may have data, both present and historical, regarding claim spend, claimant demographics, categories of injury type, insured data, and attorneys involved. *See* Lentz, *supra*. Next, the business gathers the data, assembles the database, and selects predictive factors. Using the selected predictive factors, an algorithm or model is created and tested. Once validated, the model can be used to triage new claims based on potential for future loss. In this scenario, the predictive analysis model will look for telltale signs of events that, for example, may increase the likelihood that a claim will morph into an unexpectedly large and exasperating one or, conversely, that the claim will remain more routine. This analysis occurs early in the life of a claim.

How Can DA and PM Be Used?

Armed with data correlations identified by DA and PM, claim managers can identify long-term, expensive claims sooner and devise strategies for handling and/or settling these claims. If a claim manager knows a certain claim has a substantial likelihood to result in a protracted adjustment battle or litigation, the manager can try to resolve the matter early. If early resolution attempts fail, the claim manager can implement strategies designed to mitigate the losses that will likely be incurred. For example, the claim may be assigned early to a more experienced manager or early assignment of a nurse case manager or rehab specialist might be helpful in decreasing possible exposure.

Similarly, if litigation occurs, the DA and PM model can help identify claims that are likely to involve high defense costs and/or exposure. Armed with this information, a claim manager can improve effectiveness in outside attorney selection. Even if high exposure is not self-evident initially, claims identified as potentially high risk can be assigned to outside counsel with the skill set and experience to handle large exposure matters. Again, the converse is also true. Claims that are not likely to lead to large exposure and/or protracted litigation can be handled at appropriate levels both internally and externally. The result: enhanced ability to predict indemnity, better allocation of resources, and increased effectiveness in managing legal spend.

Some other identified advantages provided by DA and PM are as follows:

- Improved ability to set accurate and realistic reserves;
- Increased ability to recognize fraudulent claims;
- Better expense management;
- Quicker and more effective method for recognizing trends and improved management of those trends;
- Improved overall claim handling with resulting cost savings; and
- Recognition of practices that may unnecessarily increase settlement payouts.

These advantages result in improved service and satisfaction all the way around.

But the immediate and sort-term advantages are clear: better claim management, less high exposure claims, more efficient settlement processes, decreased legal spend, and increased investment in continued process improvement.

What Does the Future Hold?

Taking DA and PM concepts one step further: What if we could gather data and use the DA and PM model to predict which individuals, who, due to lifestyle, change in lifestyle and/or health, may be prone to future claims? Data such as weight gain, changes in medication, a decline in balance, divorce or death in the family might be factors that predispose a person to suffer an accident and assert a resulting claim. Additionally, the burgeoning IoT ("Internet of Things"), which is creating multiple data points for all sorts of information -temperature, water usage, driving habits, appliance usage - might be used to predict problems and then intervene to mitigate or prevent accidents from occurring. Finally, these DA and PM models may lead to the identification of new and improved services and processes to define and eliminate factors that might lead to increased chance of injury. What if a manufacturing entity had this ability? A hospital? An assisted care facility? Imagine the possible cost savings and improvements in the health and welfare of employees and customers.

But, Will DA and PM Work For Non-Insurance Businesses?

Machine driven analytics works best where the incidents and claims are frequent and of sufficiently high volume; however, machine driven analytics does not work well where the issues presented in each claim are novel and less repetitive. Machines do not do well with novel issues, but perform better than humans where there is frequency, patterns, and high volume. As a result, some of the industries that might use DA and PM tools effectively to reduce indemnity spend and, indirectly, legal spend include the following:

- Hospitals and Doctors (medical malpractice);
- Businesses with high volumes of occupational claims;
- Lawyers (legal malpractice); and
- Assisted care facilities.

In order for DA and PM models to work, a business must overcome the biggest obstacle: the absence of robust data. Not surprisingly, DA and PM tools work best for companies and businesses that are more naturally data driven and have a track record of skillfully collecting and robustly warehousing data. More data — clean, accurate, and multi-year time frame — equals better DA and PM opportunities and better results.

But many businesses do not maintain the amounts or kinds of data necessary. Often, a business has not maintained sufficient data or has not had enough claims to create the needed data. What if businesses with similar types of risks and claims found a way to pool their data in a cloud based platform that a third-party provider could access and use to create models for the benefit of all? Yes, there are privacy implications and concerns that must be grappled with and overcome. In addition, the businesses must have sufficient trust in the provider for the idea to work. But the immediate and sort-term advantages are clear: better claim management, less high exposure claims, more efficient settlement processes, decreased legal spend, and increased investment in continued process improvement. In addition, there is a potential long-term advantage of the future ability to hack the entire system and prevent claim generating accidents from occurring.

Wait...What? Why Am I Excited As a Lawyer?

In my experience, one ongoing problem between lawyers and their clients is inconsistent expectations and lack of predictability in both results and costs. A claim that appears to be small and routine is assigned to a lawyer with a lower hourly rate who does not have the experience or skill set to deal with a large exposure claim. When the claim morphs into an unexpectedly large, high volume loss, the client is surprised and upset. On the other hand, a claim that initially appears to present large exposure is assigned to an experienced lawyer (often with a

higher rate), but the claim ultimately does not justify the cost and experience of the initial attorney selection choice. Again, a dissatisfied client. This dissatisfaction often creates a long term issue: the unsatisfied client responds by electing not to use the more experienced and/or higher priced lawyer at all or to engage the attorney only when the ship is listing. This scenario typically results in wasted resources and opportunities for better results through early case management by the more seasoned lawyer.

If using DA and PM allows for more accurate predictions of outcomes and problem claims, then claim managers will be equipped to improve both selection and allocation of outside counsel resources and, thereby, improve outcomes with a decreased legal spend. Honestly, I would rather have a happy client than a client who thinks he/she was overcharged for the handling of a case or who thinks that his/her lawyer underperformed.