



White Paper

Leveraging BI for Improved Claims Performance and Results

Jose Tribuzio
Founder & CEO
Systema Software

June 2014

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Introduction

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Introduction

Today, insurance organizations recognize that there's a wealth of information trapped in their claims systems and operational databases. However, many are using outdated reporting tools that make the analysis of data cumbersome, time-consuming, and costly.

Organizations may spend significant time and IT resources to develop complex queries, which can take hours to run—and weeks and months to get useful data. Oftentimes, the resulting reports do not contain the exact information that executives want, so organizations have to start over, running new queries and reports.

Even after considerable effort, these organizations can only view information in static reports—ineffective for the type of sophisticated trend analysis and forecasting that would enable organizations to simultaneously and quickly take different factors into account.

If claims organizations do not avail themselves of the latest business intelligence (BI) tools, they may miss out on vital opportunities to reduce costs, optimize operations, and enhance customer service.

Current BI Landscape

A survey of North American insurance professionals revealed widespread use of BI in property and casualty (P&C) insurance: 82% of participants said they used BI in one or more lines. However, the most common application has been pricing and underwriting.

In the last five years, advances in BI have allowed for expanded use, but it's still not a standard practice in claims. In fact, according to a Towers Watson Survey of P&C Claims Officers, only 17% of respondents said they had used BI in their claims operation for a year or more.

In P&C, claims account for significant costs; claim payouts and loss-adjustment expenses (LAE) comprise 80% of an insurance company's revenue. In addition, the claims process represents a key touch point with customers. How claims are handled is critical to an organization's success in the market, particularly in regards to customer satisfaction and retention.

Today, BI has the power to optimize claims in order to achieve greater efficiency, effectiveness, and consistency—as well as enhance customer



service. With BI tools, organizations can drive better decisions and implement more strategic initiatives.

In this white paper, we'll define key BI terms, examine various uses, consider examples of organizations that have successfully deployed these tools, and review important considerations before implementing BI capabilities.

Definition of Key BI Terms

Before launching into a detailed discussion of what BI can do to improve claim performance and results, it's important to understand key terms:

- **Big Data.** These days everyone is talking about big data, which is essentially a collection of data sets that are so large and complex that it's difficult to process with existing database management tools or traditional data processing systems. The upside of big data is organizations can gain an enhanced understanding of their business performance.
- **Business Intelligence.** BI is an umbrella term used to refer to a variety of software applications that are used to analyze an organization's raw data. BI as a discipline is made up of several activities, including data mining, data analytics, predictive modeling, and reporting. BI can improve an organization's decision-making capabilities and identify processes that would benefit from optimization.
- **Data Mining.** This is the process of analyzing data from different perspectives and summarizing it into useful information to uncover trends and relationships between seemingly disparate pieces of information.
- **Data Analytics and Predictive Modeling.** Data analytics can help uncover meaningful patterns in data, while predictive modeling is a subset of analytics that sorts through vast amounts of data to identify the relationships among variables that can help predict outcomes.

For claims, predictive modeling compares an organization's active claims that have pending outcomes—against previous claims with known results. Factors in the analysis may include type of injury, occupation, and claimant demographics (such as age, existing medical conditions, length of employment, etc.). These factors can be used in predicting the probability of an outcome (such as fraud, subrogation, or litigation).



- **Data Cube.** A cube is a multi-dimensional structure that stores information used for BI analysis. Main components of the cube include dimensions, measures, and hierarchies.

Today, there are many widely available BI tools. For example, Excel offers BI capabilities, including connections to data cubes and dynamic reporting. More sophisticated capabilities can be accessed through SQL Server Data Tools, including data mining, analytics, and predictive modeling.

Later in this paper, we'll look at SIMS Insight, the BI module offered by Systema Software. It incorporates such well-known tools. Claims staff are often familiar with the look and feel of these tools, so training and adoption are easier to facilitate. However, it's important to note that organizations can also leverage these capabilities on their own to interact with their existing databases.

Leveraging BI for Improved Results

Insurance is data rich, and the claims arena is no exception. The industry collects huge amounts of data on each claim. BI can mine this information to improve service, enhance operations, precisely allocate claims experts, and keep costs as low as possible.

Traditionally, the claims process has been complex and labor-intensive, involving multiple systems, outdated technology, and disparate data silos. The results were inconsistency, delays, and resources being used in inefficient ways.

Here are six areas where BI has been shown to improve performance and results:

- **Fraud.** Perhaps the most popular use of BI is in identifying a claim's potential for fraud. Estimates show that 10% of all claims are fraudulent, and annual losses total \$30 billion a year. According to the National Insurance Crime Bureau (NICB), fraud in the U.S. rose 27% from 2010 through 2012, reaching more than 100,000 suspicious claims.

Examiners may be familiar with typical "red flags," but they may be unable to detect subtler indicators. Predictive modeling can identify claims that are suspicious and would benefit from further investigation by the Special Investigative Unit (SIU) department. SIU departments can take action to prevent fraud and may uncover previously unidentified schemes.



- **Litigation.** Significant costs go to defending cases. Using BI, organizations can identify claims that have a higher probability for litigation, and assign those cases to senior examiners, who have the knowledge and experience to settle sooner and for lower amounts.
- **Subrogation.** The ability to identify subrogation is often obscured by the sheer volume of data and high caseloads. Missed opportunities have a huge impact on the bottom line. Predictive modeling can score claims for subrogation potential, so examiners can take action to rule out subrogation sooner or pursue recovery before it is too late.
- **Early Warning on Exceptional Claims.** One of the more interesting areas to use BI is to identify seemingly routine claims that have a high chance of becoming problematic over time. Organizations understand that a catastrophic injury, such as a brain or spinal injury, will require extensive treatment and management, so they set reserves and assign resources accordingly.

It's the seemingly simple claim that spirals out of control that's difficult to spot. For example, a claim may start off as a minor soft tissue injury. Along the way, it develops negatively. Return to work is delayed, stronger pain medication is required, or surgery may be needed. Losses initially reserved at \$10,000 end up totaling \$300,000 or more.

BI tools score all claims, not just catastrophic cases, so they can identify the characteristics that lead to these runaway cases, known as exceptional claims, so they don't slip through the cracks. Instead, at the first indication that the case is headed in a bad direction, it is routed to a specialized claims expert. In this way, the expert can intervene early to guide claims toward optional costs and outcomes.

- **Resource Allocation.** Today, claims organizations want to optimize resource allocation. While an experienced claims handler can certainly process a simple medical-only claim, their time is better spent investigating and resolving more complex cases. By using BI, organizations can more effectively match complex claims to their more experienced staff.
- **Risk Management & Savings.** Another benefit of BI is in support of risk management. For example, predictive analytics can identify high loss areas, so organizations can apply targeted risk management and loss control initiatives.



SIMS Insight: The BI Module from Systema Software

Like many industries, insurance is faced with significant financial challenges. Organizations want to reduce claims costs and deliver exceptional service. However, this can be difficult to do without the help of a modern claims system that provides sophisticated BI capabilities.

Systema Software offers the newest, most advanced claims solution, SIMS Claims™. This system provides a modern platform, elegant user experience, robust functionality, and extreme flexibility. SIMS is easy to configure to meet any organization's business needs. With an agile implementation process, clients can quickly put SIMS into production, so they can reap the efficiency and cost-saving benefits sooner rather than later.

Recognizing that BI has the power to revolutionize the way insurance organizations analyze data and forecasts trends, Systema Software also developed an accompanying BI module, SIMS Insight. It delivers the information organizations need to improve results, reduce costs, and minimize future risk. In fact, the module has been shown to deliver effective "insights," so organizations are able to:

- ***Analyze data with greater power and agility.*** SIMS Insight utilizes data cubes to pre-aggregate information into dimensions, measures, and hierarchies, so organizations can generate reports at amazingly fast speeds. The data is rendered in dynamic reports with flexible viewing capabilities. The result: organizations make more informed and strategic business decisions that give them an edge in claims and risk management.
- ***Employ data mining and predictive models.*** This BI module employs powerful data mining and predictive models to pinpoint loss trends for risk management and to locate key drivers behind fraud, litigation, subrogation, and other costly claims exceptions. The module allows organizations to examine various dimensions (such as claims, policies, users, etc.) and financial information (such as payments and reserves) to draw conclusions and forecast relationships between complex factors.
- ***Take ad-hoc reporting to a new level.*** With dynamic reports, organizations can essentially "drag and drop" new dimensions into their analysis, drill down or up in various hierarchies of information, and "slice and dice" data to find the kernels of business intelligence that can drive enhanced results and performance for the organization. With a few clicks, business users—rather than IT staff—can explore data, generate ad hoc reports, and create user-friendly charts.

- **Identify and control cost drivers.** Using findings from data mining and predictive models, organizations can configure business rules and workflow. Cases that are more likely to drive up expenses can be routed to expert resources for proactive management and cost control. It's also becomes easier to aggregate financials by week, month, quarter or year—without having to define and generate new reports. As a result, what once took months and weeks to compile, analyze, and deduce—can now be accomplished in a matter of minutes and seconds.

Real-life BI Implementations

Does BI really improve results? Don't take our word for it. A number of organizations have implemented SIMS and successfully achieved their business objectives, such as reducing program costs, expanding market share, and assisting members with risk management initiatives:

- **County.** A full-service county with 2,200 employees had a workers' compensation program with 250 claims and program costs totaling \$2.5 million a year. The county wanted to reduce both claims and costs. As such, it analyzed five years worth of claims data to identify the most frequent and costly claims areas. It found a high rate of ergonomic injuries, back injuries, and stress claims, as well as significant expenses in these areas.

Using SIMS, the county identified these trends and used targeted programs to reduce claims by 50% within the first year. From there, the number of claims leveled off, and claims were costing less because their safety programs resulted in less severe injuries. Overall, the county saved \$4 million in workers' compensation costs over four years and lowered absenteeism by 50% over the same time period.

- **Auto Insurer.** An auto insurance company leveraged SIMS to streamline operations and enhance customer service. The system's capabilities helped the insurer to aggressively manage claims costs for clients. SIMS also improved productivity—70% of claims are closed within 30 days.

Another benefit is the insurer now has all its data at its fingertips. It can easily run reports to analyze information. For example, it tracked subrogation and various expenses, such as rental car costs, which helped it to identify areas for further cost savings.



Since implementing SIMS, the insurer went from owning 8% of the market to 25%. With the old way of processing claims, the company would have needed to double its staff. Instead, by leveraging SIMS, it essentially tripled its business, while keeping staff at the same level. This was a tribute to the impact SIMS made on claims-handling efficiency.

- **Risk Pool.** A risk pool was using an outdated claims system, which exhibited poor performance and could not accommodate changing business needs. The pool replaced this legacy system with SIMS.

This resulted in greater efficiency. Claims examiners were freed up to spend more time with members. SIMS seamlessly integrated with other systems, so the pool could electronically transfer data. This significantly reduced manual data entry, saving 150 hours each month. By keeping overhead low, the pool continues to offer affordable rates to its members.

Using SIMS, the pool also provided members with stewardship reports, which included an in-depth analysis of their claims. This helped members to identify problem areas and implement targeted loss control programs. SIMS data cubes also helped members determine whether it was financially feasible to insure versus self-fund certain risks.

Key Considerations for BI Implementations

The main requirement for BI is data—the deeper the claims history, the better. In addition, data access and management capabilities are needed. Often, this is resolved with a data warehouse. While many organizations have a vast amount of data, quality and integrity are essential to model effectiveness. In fact, claim files with missing, incomplete, or erroneous data have a negative impact on accuracy. Organizations must take actions to ensure that their data is clean, accurate, and complete. Besides quality, other factors that organizations should take into account include:

- **Actionable Intelligence.** BI should be able to deliver an actionable output, such as a predictive score, which can easily be viewed, understood, and acted upon by claims examiners. As data becomes richer, organizations must have a means to continually calibrate models to ensure ongoing precision.
- **Improved Workflow & Decisions.** BI tools can have a profound impact on workflow and claims decisions. As we've discussed findings can generate process enhancements. But for this to work effectively, an organization should strive to optimize their operations as much as possible before BI



deployment. The process is similar to implementing any new system. They should carefully document their claims-handling process and identify key areas for improvement. During implementation of BI capabilities, organizations may find additional opportunities to streamline workflow, such as using data feeds to eliminate redundant data entry. Making these types of process changes can serve to further enhance the overall BI process improvement cycle. For example, organizations will be able to more easily configure business rules that alerts examiners of high-score claims, if an electronic workflow has already been established.

- ***Talent.*** One potential constraint is the scarcity of BI experts who can create models for claims. BI skills exist in larger companies, but smaller organizations may struggle to find talent. In addition, BI has traditionally been deployed in pricing and underwriting. As organizations look to leverage BI in claims, they'll need experts who understand how BI can benefit the claims process in terms of enhancing productivity, customer service, and cost savings. If talent is in short supply, organizations can turn to their vendors for BI expertise.
- ***Throughout the Claims Process.*** BI and predictive models must be applied not just at intake, but also throughout the claim's life cycle. New data may emerge and must be included in the analysis. It's important that models factor in changing data sets. For example, analyzing claims after a more extensive investigation is performed can improve model output and accuracy.
- ***Closely Couple with Claims Expertise.*** A claim may be scored with BI tools, but organizations must also consider where a claim will be routed for investigation and management. For example, with a complex injury case, a clinical team could be formed to review medical issues. Intervention on exceptional claims can help drive better outcomes.

The Future of BI in Claims

As we've discussed, claims executives face tremendous pressure to reduce expenses and enhance service. By mining and analyzing claims data, they can unlock vital insights to fine-tune operations, achieve strategic objectives, and make better business decisions now and into the future.

With an eye toward continued innovation, BI remains top of mind for many executives. As we move forward, the industry will better understand the factors that must be taken into account to ensure success. As data improves in terms of accuracy and completeness, BI capabilities will evolve and become more



sophisticated as well. Organizations that ensure data quality, and combine powerful tools with human expertise will achieve the best results with BI.

As this white paper has shown, organizations have already successfully deployed BI to reduce claims and program costs, enhance customer service, expand market share, and deliver more effective risk management strategies. Leveraging BI to achieve similar results is within any organization's reach.

To receive more information on BI capabilities, or to schedule a demo of SIMS Claims or SIMS Insight, please contact:

Brian Mack
Vice President of Sales & Marketing
Phone: (800) 272-9102 ext. 710
Email: brian.mack@systemasoft.com

About Systema Software

Systema Software provides flexible, comprehensive solutions and services to the insurance industry. SIMS Claims is an innovative, award-winning claims administration system, which is highly praised by clients and well recognized by industry experts as a leading claims solution. Together, our team of Big 4 consulting and industry veterans, experienced software developers, and project managers deliver an architecturally strong enterprise platform, designed for superior speed, scalability, and performance. With advanced technology and focused customer service, Systema Software has experienced phenomenal growth and success, earning high rankings on the national Inc. 5000 and local Fast 100 lists of fastest-growing private companies.

For more information, visit us online at www.systemasoft.com.
