Insurance Bureau of Canada

Outsmarting fraudsters with fraud analytics

Overview

The need

The insurance industry is constrained by the manual and ad hoc approach to detecting and investigating potential fraud.

The solution

To address its objective of automating the detection of potential claim fraud and the identification of possible fraud rings, IBC engaged IBM to perform a Proof-of-Concept project using IBM® InfoSphere® Identity Insight and IBM SPSS® Modeler.

The benefit

IBM POC quickly found suspects and their claims reducing investigation efforts; found a previously unidentified suspect fraud ring; and gathered more information against suspected fraudsters with a higher degree of confidence.

Insurance Bureau of Canada (IBC) wants to protect honest policyholders by detecting and prosecuting organized insurance fraud. Historically, fraud is said to account for 10 to 15 percent of insurance company losses, and to drive up claims costs. In the insurance industry, fraud can span from opportunistic exaggerated claims to organized multimillion dollar rings involving staged collisions and dishonest towing companies, repair shops, paralegals and medical clinics.

IBC is gathering some powerful ammunition to defeat the fraudsters. Until now, identifying and prosecuting fraud rings that account for significant fraudulent losses has been a manual process that depends on insurers and the keen eye of a front line insurance adjuster or an informant's tip. But now the insurance industry has technology on its side. IBC has worked with IBM to analyze huge volumes of claims information insurance companies have in their claim files. The result may be a solution to the problem of identifying insurance fraud in its early stages—a way to quickly and efficiently identify potentially fraudulent claims and link them with the organized crime rings that profit from them.

"Together with IBM, we have demonstrated through this POC how IBC and insurance companies can improve the effectiveness and efficiency of IBC investigators and insurer special investigation units using analytics and visualization technology to make fraud detection smarter and faster, for significant savings and improved public safety."

—Rick Dubin, Vice President, Investigative Services, Insurance Bureau of Canada

IBC is the national property and casualty insurance industry trade association representing Canada's home, car and business insurers. Member companies represent 90 percent of the property and casualty (P&C) insurance market in Canada. IBC provides investigative services to protect the premiums of honest policyholders. With the assistance of member insurance companies and law enforcement agencies, IBC Investigative Services has spent several years investigating suspect cases to identify and prosecute automobile insurance industry fraud and the participants involved. The time and manual effort associated with these investigations and the intuitive understanding that technology could speed up the process pointed to an opportunity for IBC to investigate further.

Getting beyond hit-or-miss investigative techniques

On the surface, it is not difficult for claims adjusters to spot suspicious claims. IBC has hundreds of business rules that indicate possible fraud. For instance, consider the following fictional scenario:

An automobile collision occurs along a deserted stretch of highway at 2 a.m. when nobody is present to witness the scene. A car entering the highway has been sideswiped by a car passing in the right lane. The car struck sustains extensive damage while the other car has minor scratches and dents. The struck car has three passengers who claim serious injuries, but the driver has no injuries. There is no police report.

Every detail in this account is suspicious according to existing business rules. In fact, the sideswipe collision was carefully set up and occurred a few hours before in an abandoned parking lot and then re-enacted at the intersection. However, information that could potentially send the fraudsters to jail lies beneath the surface. Finding it requires the analysis of many claims together to resolve social networks and associate individuals with suspected claims using predictive analytics.

Solution components

Software

- IBM® i2®
- IBM InfoSphere® Identity Insight
- IBM SPSS® Modeler

For instance: the drivers of both cars shared the same address several years ago under different names and have made numerous claims before, all involving sideswipe collisions. The perpetrators are part of an organized crime ring involving the same individuals working under aliases, using the same body shops and other service providers. Without technology to identify these patterns, manual investigation on a case-by-case basis is labor intensive and hardly makes a dent in the problem.

Connecting the dots faster and more efficiently

IBM hosted IBC and others at a financial crimes briefing at the Toronto Software Lab in 2011. IBM learned about IBC Investigative Services' recent success prosecuting a large criminal ring in the greater Toronto area. IBM has extensive experience delivering solutions that detect potential fraud and identify non-obvious relationships in banking, insurance, intelligence, law enforcement and government services. To address its objective of automating the detection of potential claim fraud and the identification of possible fraud rings, IBC engaged IBM to perform a Proof-of-Concept (POC) project. This provided an opportunity to prove whether a technology solution could be leveraged to accelerate IBC's analysis of claims data.

IBM worked with IBC Investigative Services using existing data from IBC and IBM's advanced analytics software and consulting services. The goal was to prove that IBM technology could identify known fraud rings and to demonstrate how it could be used to more effectively identify and quantify potential unknown fraud.

Organized fraud increasing claims costs

IBM used a subset of functionalities from the IBM analytics software portfolio including entity analytics, social network analysis and predictive analytics capabilities. IBM InfoSphere Identity Insight helps identify suspect individuals by identifying who the person is and who the person knows. IBM SPSS Modeler provides predictive analytics that flag suspect claims. Together the capabilities of the two products provide a unique lift that allowed IBM to associate suspect individuals with suspect claims and vice versa. The suspects and linkages were easy to spot using IBM i2 software, an industry leading visualization tool that automates relationship maps to increase accuracy and speed in discovering potential fraud.

Analyzing existing, limited data for organized fraud that was provided by IBC from over 233,000 claims from six years, the POC identified over 2,000 Ontario automobile claims that were potentially fraudulent and had a value of Can$41 million. An extrapolation of that data to estimate the annual impact of just organized fraud on the Ontario automobile insurance industry is approximately Can$200 million. As outlined in the "Ontario Automobile Anti-Fraud Task Force—Status Update," the potential cost of all types of fraud is conservatively estimated to be as much as Can$770 million—Can$1.6 billion in 2010.[1]

Identifying potential new fraud rings

Using analytics technology, IBM was able, in a matter of weeks, to verify two criminal fraud rings that IBC had previously identified and investigated over multiple years using manual methods.

In addition, IBM was able to quickly find a known and potential new fraud ring despite data and timing limitations. These associations formed the foundation of potential rings. One of the groups identified was a previously unknown sub-ring within a fraud ring investigated by IBC.

While only a subset of capabilities from the IBM analytics software portfolio was used, the POC demonstrated the positive impact that technology can play in quickly overcoming fraudsters who try to hide who they are and their unscrupulous activities. The POC also gathered more information against fraudsters, more cost effectively and with a higher degree of confidence, than is possible without the use of analytics.

"Insurance Bureau of Canada spends significant resources preventing, detecting, investigating and prosecuting suspected fraudulent claims which we estimate to cost our constituency of property and casualty insurers millions of dollars annually," says Rick Dubin, vice president of Investigative Services, Insurance Bureau of Canada. "Together with IBM, we have demonstrated through this POC how IBC and insurance companies can improve the effectiveness and efficiency of IBC investigators and insurer special investigation units using analytics and visualization technology to make fraud detection smarter and faster, for significant savings and improved public safety."

For more information

To learn more about the IBM social network analysis and predictive analytics, please contact your IBM representative or IBM Business Partner, or visit the following websites:

- **ibm.com**/software/data/identity-insight-solutions
- **ibm.com**/software/analytics/spss

IBM Corporation
Software Group
Route 100
Somers, NY 10589

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[1] Ontario Automobile Anti-Fraud Task Force—Steering Committee Status Update, July 2012, http://www.fin.gov.on.ca/en/autoinsurance/status-report.html

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