Data Mining Technologies Inc.

Knowledge Discovery From Databases

Insurance Claims Fraud

An Opportunity to Increase Corporate Profitability for Insurers

White Paper

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Fraud in Insurance Claims

A Significant Profit Improvement Opportunity

Classifying claims as legitimate or as requiring special handling is an ongoing task facing today's insurance companies. A small percentage of claims account for a large percentage of claims costs.

Conning and Company conducted a study in 1996, which estimated that P/C insurers detect 20% of their fraud, L/D carriers find 10%, and healthcare insurers detect a miniscule 1%.

In 2001 an audit of Medicare indicated that 6.3% or $12 billion of $192 billion in fee-for-service claims paid annually were fraudulent or inappropriate.

Pressure from poor underwriting results, poor loss ratios, increased competition from banks and the need to pay claims quickly indicate that insurers must find new and better ways to address this problem.

Reducing the amount of inappropriate or fraudulent payments represents both a significant problem and a significant opportunity for the insurance industry.

In this paper we explore the problem and present new and powerful methods for addressing it.

The Problem How can insurers improve the process by which they separate claims requiring special attention from the rest? These claims include both fraudulent claims and those that require special handling.

In the healthcare industry alone the U.S. Department of Health and Human Services/Centers for Medicare and Medicaid estimated the cost of fraud at between 3 and 10 percent of U.S healthcare costs. The forecasted cost of fraud in 2010 is between $78 billion and $260 billion. This translates into a cost per family of between $925 and $3,100.

Special handling is required if the claim is in an early enough stage to allow for intervention and "triage" through a case manager or investigator to prevent future claims from rising to an inappropriate level. Referral should sometimes be to the SIU unit and sometimes to a case manager. The problem is to know which is appropriate.

Since Claims adjusters handle about 250 claims at any given time it is not possible to refer all claims to case managers or special investigative units. So a method is needed to score claims as to the need for human intervention and determine which of the groups is appropriate.

The Challenge – How to detect exceptional claims faster and more accurately than with current methods. With so much money left on the table, the ROI for the insurer is substantial. If insurers can separate claims into three buckets – potentially large claims in an early stage, fraudulent claims and claims that have a low likelihood of being in the latter two categories, then remediation is possible.

The Solution - Use better automated methods
Current Practices
While insurers have increased their efforts in detecting abuse much more can be done. Most carriers use human generated rules to screen exceptional claims. These business rules are derived from the opinions of experts with substantial experience in detecting claims that need further investigation or referral to case managers.
The process involves taking a sampling of claims with employees who are trained in the use of these business rules to spot abnormal patterns. The success rates of these workers varies from individual to

individual. This approach is very labor intensive and hence costly. Also many claims go unaudited due the sampling process which is necessitated by the high labor cost of checking claims by existing workers.

Phase I - A Step Toward automated Fraud Detection
Some companies have automated these business rules into computer programs. The problem with this approach is that it usually catches the more obvious cases and is creates many false positives (legitimate claims identified as exceptional). Furthermore a substantial amount of human review is still needed.

Phase II - A More Advanced Approach
Another automated approach is the use of statistical models or Neural Networks to review all transactions. This approach while better than that outlined in Phase I it still requires that rules be changed over time and since patterns of fraud are dynamic since criminals change their patterns over time. This approach also cannot uncover patterns that involve complex interactions among many the variables that are available to analyze.

Most insurance companies are using either the Phase I or Phase II approach today.

Phase III - Best Practice Method
Companies that use the Phase III approach are able to build models that analyze hundreds or thousands of variables that allow them to be proactive. They can spot fraud at an early stage of the claims process. It is easier to not issue a check than to recover the payment after it has been disbursed. Credit card and telecommunications companies lead the way in the 1990's in capitalizing on this technology. Visa was able to achieve an 8% reduction in losses.

Offerings such as Data Mining Technologies' new eNuggets and Nuggets products offer insurance companies significantly reduce costs and technical complexity that are usually associated with the implementation and operations of such technology while offering other substantial benefits not available in other alternatives.

The Insurance Industry is Moving Closer to the Nuggets© Approach
Benefits

- Reduce fraud losses
- Identify exceptional claims
- Increase effectiveness of investigative staff
- Improve provider relations by reducing the number of valid claims delayed due to investigation
- Score claims as to likelihood of being fraudulent
- Provide reason why score was given
- Provide a "hot list" of potentially fraudulent and/or high cost claims quickly
- Operate in real time or batch mode

About Data Mining Technologies
Data Mining Technologies Inc. (DMT) is a leading provider of data mining software solutions for the Financial Services and Healthcare Industries. Our breakthrough software enables companies to sift through vast amounts of data, extract actionable results and thereby significantly increase profits.

Two recent customer success stories provide a realistic example of the willingness of very large sophisticated companies to adopt our technology and demonstrate how our applications are being used to increase profits.

A majorP/C Insurance uses DMT's Insurance solutions to reduce the costs associated with processing fraudulent claims. DMT's solution is able to identify more claims earlier in the process that may be fraudulent. The benefit to the company is an increase in the number of fraudulent claims found as well as the savings in time spent on claims that are not fraudulent
.
A large national bank uses DMT's Financial solutions to target appropriate products to up sell / cross sell to their clients. They are able to use this targeting approach in real time, on their web site or to optimize their traditional direct mail activities. A key benefit in the direct mail application has been their ability to increase sales per marketing dollar spent.

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Appendix
People's Attitudes About Fraud
Consumers
Nearly one of 10 Americans would commit insurance fraud if they knew they could get away with it. Nearly three of 10 Americans (29 percent) wouldn't report insurance scams committed by someone they know. *Progressive Insurance (2001)*
More than one of three Americans say it's ok to exaggerate insurance claims to make up for the deductible (40 percent in 1997). *Insurance Research Council (2000)*
One of four Americans says it's ok to pad a claim to make up for premiums they've already paid. *Insurance Research Council (2000)*
One of three Americans says it's ok for employees to stay off work and receive workers compensation benefits because they feel pain, even though their doctor says it's ok to return to work. *Insurance Research Council (1999)*
Seven of 10 Americans say workers comp fraud is a widespread problem, and 45 percent say fraud is increasing. *Insurance Research Council (1999)*
One of five employed workers says they've been aware of fraud in their workplace. *Insurance Research Council (1999)*
Four of five Pennsylvanians reviewed their medical bills for accuracy in 1999 (seven of 10 in 1997). *Insurance Fraud Prevention Authority of Pennsylvania (1999)*
Nearly 16 percent of Pennsylvanians say they're willing to receive bogus workers comp payments (25 percent in 1997). *Insurance Fraud Prevention Authority of Pennsylvania (1999)*
Three of four Americans aren't willing to pay more for their auto coverage to allow bad-faith third-party lawsuits. *Insurance Research Council (2000)*
Physicians
Nearly one of three physicians say it's necessary to game the health care system to provide high quality medical care. *Journal of the American Medical Association (2000)*
More than one of three physicians say patients have asked physicians to deceive third-party payers to help the patients obtain coverage for medical services in the last year. *Journal of the American Medical Association (2000)*
One of 10 physicians have reported medical signs or symptoms a patient didn't have in order to help the patient secure coverage for needed treatment or services in the last year. *Journal of the American Medical Association (2000)*

Fraud Losses & Costs

Personal Injury Protection (PIP)
More than one of every three bodily-injury claims from car crashes involve fraud.

Insurance Research Council (1996)
17-20 cents of every dollar paid for bodily injury claims from auto policies involves fraud or claim buildup. *Insurance Research Council (1996).*
Fraud adds $5.2-$6.3 billion to the auto premiums that policyholders pay each year. *Insurance Research Council (1996)*
Claims for bodily injuries under the Personal Injury Protection portion of New York's no-fault auto coverage rose 79 percent between 1999 and 2000, compared to 25 percent in all no-fault states. *Insurance Research Council (2001)*
Insurers increased auto premiums up to 25 percent for New York City in 2001. *Insurance Information Institute (2001)*
The average PIP claim is $7,950 in New York State — 47 percent higher than the national average. *Insurance Information Institute (2001)*
Fraud costs each insured driver in New York State $75-$115 per year*. Insurance Information Institute (2001)*
PIP claims in New York State rose nearly one third in 2000, more than twice as fast as second-place Florida. *Insurance Information Institute (2001)*

The average PIP claim in New York State jumped 19 percent over the first nine months of 2000, and 64 percent between 1995 and 3Q 2000. This compares to a 33-percent increase for other states. *Insurance Information Institute (2001)*
Auto insurers in New York pay out nearly twice as much in PIP claims as they collect in premiums. For every $100 auto insurers received, they paid $177 in claims through 3Q 2000. *Insurance Information Institute (2001)*

Healthcare

Medicare lost $11.9 billion to waste, fraud and mistakes in 2000, half of what was lost five years ago from improper payments to doctors and hospitals. U.S. *Department of Health and Human Services (2001)*
Fraud amounts to 10 percent of U.S. healthcare expenditures. *Government Accounting Office (1992), National Health Care Anti-Fraud Association (2001)*
Seniors and other taxpayers pay up to $1 billion a year in inflated drug prices due to potential fraud and loopholes in Medicare. The overpayments represented 1/5 of Medicare spending in 2000. *Government Accounting Office (2001)*
80 percent of healthcare fraud is by medical providers, 10 percent is by consumers and the balance is by other sources. *Health Insurance Association of America (1998)*
The U.S. government recovered more than $8 for every dollar spent fighting health care fraud and abuse by using the False Claims Act. *New Directions for Policy (2001)*

Anti-Fraud Efforts

State Fraud Bureaus (1995-2000)
Criminal convictions by state fraud bureaus doubled between 1995 and 2000. Some 2,123 convictions were gained in 2000. *Coalition Against Insurance Fraud (2001)*
Cases referred for prosecution more than doubled, from 1,562 to 4,000 between 1995 and 2000. *Coalition Against Insurance Fraud (2001)*
Civil actions more than tripled between 1995 and 2000. *Coalition Against Insurance Fraud (2001)*
Two of three states increased the budgets of their fraud bureaus. *Coalition Against Insurance Fraud (2001)*
States spend an average of 43 cents per resident to fight fraud. *Coalition Against Insurance Fraud (2001)*

Property-casualty insurers

Fraud is a serious problem, half of all property-casualty insurers say.
The amount of fraud their company has experienced has increased over the last three years, more than one of three insurers say. Nearly half say fraud has stayed the same.
Insurance
Research Council-Insurance Services Office (2002)
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About 11-30 cents — or more — of every claim dollar is lost to "soft" fraud (smalltime cheating by normally honest people), nearly half of property-casualty insurance companies say. Hardcore scams steal only a small fraction of that money.
Only one of four insurers thoroughly investigate cheating on insurance applications. Even fewer insurers investigate insiders such as employees and agents who commit premium fraud.
More than two of five property-casualty insurers have increased spending to fight fraud over the last three years. More than four of five insurers have formal antifraud programs.
Insurance Research Council-Insurance Services Office (2002)
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(2002)
Insurance Research Council-Insurance Services Office (2002)

Nearly three of five insurers say their efforts to combat are only moderately effective, or lower. Research Council-Insurance Services Office (2002Fraud-control spending by property-casualty insurers rose from $200 million in 1992 to $650 million in 1996. *Insurance Research Council (1997)*
98 percent of property-casualty insurers have a fraud-control program, and most insurers have special investigation units. *Insurance Research Council (1997)*
Half of property-casualty insurers have broad, public-information programs directed against fraud. *Insurance Research Council (1997)*

Healthcare

In 1996, Congress funded an added $548 million over seven years for health-care fraud enforcement. *FBI (2001)*
Health insurers save $11 for every $1 they spend fighting fraud – an average of $5.5 million per company in 1998. *Health Insurance Association of America (1999)*
Federal convictions for health fraud, waste and abuse rose 57 percent between 1999 and 1998. *U.S. Department of Health and Human Services (2000)*
More than nine of 10 health insurers (95 percent) have anti-fraud training for employees, and nearly three of five (56 percent) have fraud hotlines. *Health Insurance Association of America (1999)*
The FBI secured 560 convictions for healthcare fraud in 2001, a four-fold increase from 1992. The bureau also racked up 741 indictments in 2000, up from 615 in 1999. *FBI (2001)*

Workers Compensation

Without workers compensation anti-fraud laws, claims would've been 10.4 percent higher in 1997, the average claim would've been 7.3 percent larger and system costs per worker would've been 18.5 percent higher. *National Council on Compensation Insurance (1999)*