WCIR Wipro Council for Industry Research

WIPRO Applying Thought

BEST PRACTICES IN FRAUD DETECTION AND PREVENTION USING BUSINESS INTELLIGENCE & PREDICTIVE ANALYSIS

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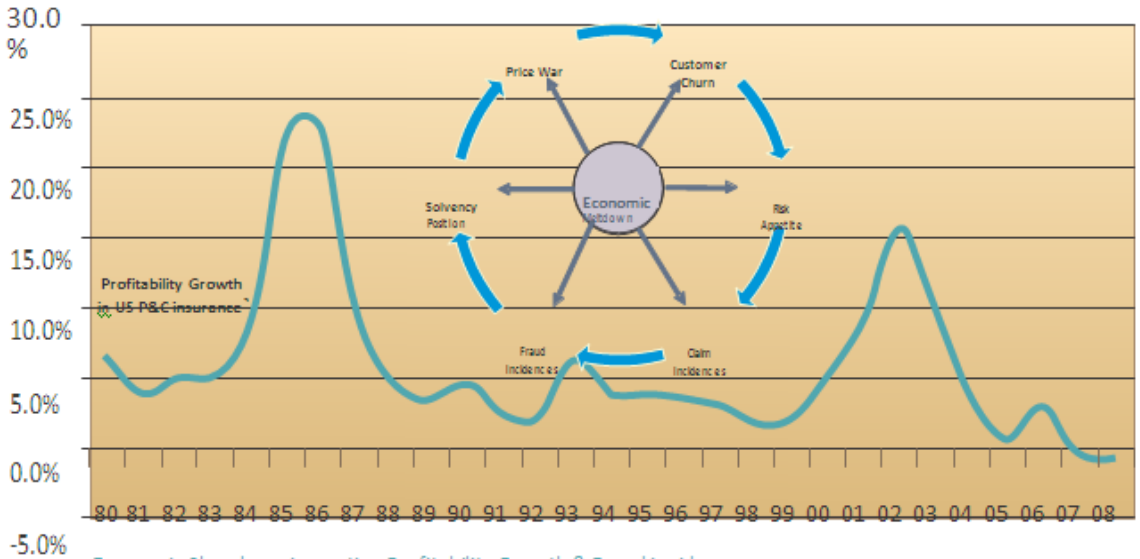
INTRODUCTION

Leading insurers employ analytics to be more profitable, more competitive and more compliant

The economic slowdown has started the decline in premium growth rate for large insurers in major markets. With decline in consumers' purchasing power and inflationary trends in most markets, the demand for insurance will foresee a downtrend in near future. We expect significant shifts in the way insurance is sold and consumed. For instance, the end customers would look for low cost carriers that provide optimal protection to meet their insurance on a need-to- need basis. More than ever, the product pricing of would be a key factor for insurers to write new business and retain its existing customers. The insurance carriers need to successfully combat the challenges of price competition, customer attrition, increasing claims severity, claims inflation, increasing operating expenses, rising costs of compliance, increasing litigious tendency in major lines of businesses and growing number of frauds to stay profitable, competitive and compliance.

Fraud is becoming a growing challenge for every insurer and it costs every honest policyholder in the form of higher premiums by up to 5% in markets like UK or 13-18% in some of lines of business in the US. Fraud accounts for approximately 10 percent of the[1] property/casualty insurance industry's incurred losses and loss adjustment expenses. Insurance fraud in the P&C area is estimated to be more than $30 billion per year**2**. Fight against fraud is not only important for financial performance of insurance company but also needed for maintaining its solvency position in today's current economic conditions.



Economic Slowdown impacting Profitability Growth & Fraud incidences

[1]Fraud and Build up Add 13 to 18 Percent in Excess Payments to Auto Injury Claims. Source: http://www.ircweb.org/

[2]Source: Insurance Information Institute, 2008.

Economic meltdown has created immense pressure on insurers. Current soft market conditions are affecting all lines of business. The industry is debating on the price trend that would follow in near future. However it is evident that in this slow economy, innovative products with optimal pricing would drive the growth for insurers. Competition would be stiff in the marketplace and buyers would have better choices to bargain their insurance needs at a lower premium. The price war between insurers is inevitable in these scenarios to retain existing customers, attract new customers and protect their market share. Increase in the prices is nearly out of the equation for established players beyond certain degree and hence focus now shifts to internal efficiency. Customer churn is expected to increase in this competitive environment where supply of insurance is readily available against the diminishing demand. In order to sustain the business, insurers would be forced to increase their risk appetite thereby adding non standard risks in its portfolio. With portfolio of increasing non standard risks and customer mix, the insurers are foreseeing growing numbers of claims incidences in near future. The fraud possibility is inevitable with the covered non standard risk and risk characteristics.

Fraud detection and prevention strategies of the insurers will play the most crucial role in the current economic conditions to sustain the business agility and to maintain the solvency position in the marketplace. The existing fraud

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detection and prevention methods of most of the insurers are not adequate enough to combat the constantly evolving and growing amounts of fraud. Currently, insurers operate primarily on a reactive fire fighting mode which normally is limited to the four walls of the Special Investigation units.

"Red Flags" are typically used from years now for fraud detection, but without an integrated framework, automation, correlation and analytics the value offered by red flags methods are meagre and "not adequate" as fraud patterns are changing dramatically on regular basis. Some of the insurers have developed rule based alerting systems to predict the score of fraud which seems to be good start but not enough to combat fraud as most of the fraud patterns are unrelated that can not be detected using simple rules or programming languages. However, these techniques may have worked on smaller scale operations however, the fraud problem is $ 30 BN in the US P&C industry alone and it is increasing at 2-3% CAGR.

For tomorrow, the insurers have to think beyond the "Red Flags" for detecting and preventing fraud. Predictive analytics offers a huge opportunity for the insurers to address their existing challenges by learning from the historical experience of fighting fraud. Predictive analytics coupled with business acumen can not only detect fraud with accuracy but also locate the hidden data patterns from millions of records which will help insurers gain insights into preventing future fraudulent transactions. This is impossible for any claims handler or adjuster to do and it can only be done with the help of data mining algorithms.

Investments in predictive analytics help insurance companies to increase its competitive advantage as the fraud detection models "learn" from the company's experiences and hence they are unique to the company. It will allow them to handle frauds as well manage expenses much better and at the same

time, providing invaluable insights into developing profitable products for the new world of tomorrow.

A number of third party services providers also provide large lines of business specific libraries to analyse text inputs especially FNOL and other reports received from adjusters, official authorities, suppliers and customers. These help in automatically examining the voluminous claim documentation for potential fraudulent statements or data patterns. Insurers tie up with these service providers to get the best for them as these authentications and validations have become a key practice for the risk assessment and in early detection of frauds. The fraud bureau, department of insurance, insurance crime bureau, association of insurance commissioners and related bodies publish periodic fraud indicators and red flag listing that must be used for identifying new fraud patterns in the existing policies and claims. This information is a key input into predictive algorithms to get the weight and relevance in context to the transactional claims data held within a company to predict abnormal behaviours. This can be an ongoing exercise with a pre-set frequency or it can even be reviewed on a very frequent basis depending on the scale of the problem at the insurer.

Unlike the last decade, there are a wider variety of tools available in the market today based on Neural networks, Decision support, Data and text Mining, voice and video analytics etc. Many Insurers are employing such methodologies and investing in these tools which are easy to implement in the organisation without major hindrance to business as usual. However, success of fraud fighting programs depend upon how well the insurers incorporate these tools in their business, speed of adoption by the business community and accuracy of the results produced by these technologies.

The quality of predictive analytics outcomes, however, is only as good as the quality of data used in developing the algorithms. Comprehensive, consistent, clean and current data enables the statistical and data mining techniques being used in predictive analytics to produce and predict effective results. The organization has to invest in the data asset to get the best out of analytics to predict the future state of various business themes.

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BEST PRACTICES AND TRENDS

Do more by using predictive analytics:

Predictive analytics offers a huge opportunity based on simple interpretation of business rules and flexibility to incorporate new rules/red flags and finding its relevance of the same in the overall data spectrum. It can be applied to the entire insurance value chain to predict various aspects such as customer preferences, customer behaviour, customer churn, payment defaults, fraud possibility, claims propensity, litigation and subrogation possibility etc.

Be more profitable:

Predictive analytics offers numerous methods to maximise profitability. Some areas of focus includes: early prediction of claim (propensity) and/or possibility of fraud in a risk prior to underwriting or during underwriting stages thereby charging appropriate premium or denying risk having higher claim propensity and fraud score. Another area is predicting rank of customers during renewal cycle for persistency decision thereby minimising possible future losses and improving the accuracy of underwriting. Fraud prediction using analytics can not only protect insurer from phoney losses but also help insurer maximise profit and protect its solvency. The recovery potential (subrogation, salvage, total loss) is improved using analytics as it divulges hidden loss and fraud patterns thereby increasing profitability for the company. Use of predictive analytics to detect fraud early in claim processing cycle releases capacity for doing more transactions. This can lead to increased staff productivity and reduced unit costs.

Be more competitive:

Insurers are developing unique predictive models that suit their business needs to stay competitive. It includes making best use of their data assets, industry knowledge, industry resources (including external databases) and analytics. Analytics is in use by insurers for product innovations, product redesign and optimal pricing resulting from intelligence gained from fraud detection to stay competitive and keep portfolio position healthy. The external databases are playing vital role in fraud fighting programme as well in risk and loss assessment. Commonly available databases in the market are loss history database, criminal records database, violation/conviction/accident database, prior insurance verification databases, credit score database, identity, address and employment verification databases, , vehicle records database, etc. Many of the leading insurers are already using these services for best business outcome. Special Investigation Unit (SIU) knowledge and prior fraud case information is being used by the companies to stay competitive and formulate their future fraud prevention strategies.

Be more compliant:

Proper compliance measures are a must for business continuity. Analytics helps business from various angles of compliance related to fraud detection, reporting and anti fraud plan submission with department of insurance or related bodies. Data mining and predictive algorithm helps to detect, track categories of fraud, recoveries and losses attributable to fraud and report the same to various industry bodies for compliance (e.g. ISO, NICB, department of insurance etc). Predictive analytics can help improve the accuracy of compliance and lower cost of compliance.

Predictive analytics is no longer a technical component but has made the transition from an emerging technology into the mainstream as these tools are in use by many leading players in the industry. These solutions find application in

almost all aspects of business operations in the insurance company and the talent is not difficult to find. It has also moved from long-term strategic predictions to much more immediate and tactical or operational analysis. Survival of the company depends on their prediction and accuracy of business decisions to face the future. Predictive analytics offers a vehicle to achieve the same. And predictably, yes, it can help your flags fly high in the difficult times.

Girish Joshi is a Domain Consultant with Insurance Consulting Group of Wipro Technologies. He has over 11 years of experience in the areas of business and IT consulting wherein he has worked across the insurance value chain for leading clients in North America, Europe and Ireland.

ABOUT WIPRO TECHNOLOGIES

Wipro is the first PCMM Level 5 and SEI CMMi Level 5 certified IT Services Company globally. Wipro provides comprehensive IT solutions and services (including systems integration, IS outsourcing, package implementation, software application development and maintenance) and Research & Development services (hardware and software design, development and implementation) to corporations globally.

Wipro's unique value proposition is further delivered through our pioneering Offshore Outsourcing Model and stringent Quality Processes of SEI and Six Sigma.

ABOUT WIPRO COUNCIL FOR INDUSTRY RESEARCH

The Wipro Council for Industry Research comprising of domain and technology experts from the organization aims to address the needs of customers by specifically looking at innovative strategies that will help them gain competitive advantage in the market. The Council in collaboration with leading academic institutions and industry bodies studies market trends to equip organizations with insights that facilitate their IT and business strategies

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