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Whitepaper

Advanced Analytics to Combat Insurance Fraud

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Table of Contents

Author's Bio

Madhur Virmani is a Sr. Business Consultant in Insurance Solution Group at Hexaware. Madhur has around 13 years of experience in the Insurance & IT industry across P&C, Life and Health Insurance and reinsurance domain with large Insurance and IT organizations. He is an engineering graduate with additional Insurance qualifications such as a FIII, ACII. He carries a rich International experience in Consulting, Business Analysis and designing IT solutions for leading global Insurers in the US & Europe. He has been a visiting faculty at National Insurance Academy, Pune, India and an examiner at Insurance Institute of India, Mumbai, India. Madhur can be reached at madhurv@hexaware.com

1 Executive summary

Insurance organizations globally are challenged with identifying fraudulent claims and underwriting irregularities early in the process lifecycle to prevent fraudulent claims payments and to plug underwriting leaks. Insurance fraud is as old as insurance itself. The ancient Greeks created a form of maritime insurance to indemnify against potential losses incurred with the sinking of a commercial ship in transit, which led to boat owners hiding their boats in a foreign port to collect the insurance money. Even then, special investigators were hired to determine if the boat had sunk. Insurance fraud continues to grow today, and is occurring everywhere insurance is written.

The Insurance Consumer Fraud survey from Accenture found that more than 68 percent of respondents commit fraud because they believe they can get away with it. More disturbing was that 12 percent of adults in the U.S. agreed it is OK to submit claims for items that are not lost or damaged, or for personal injuries that didn't occur. Such attitudes cost the insurance industry billions of dollars each year. According to the Insurance Information Institute, property and casualty (P&C) insurance fraud strips an estimated $30 billion from the industry each year – losses that must be made up in premiums. The National Insurance Crime Bureau (NICB) estimates that fraud is involved in approximately 10 percent of losses, costing policyholders an estimated $200-$300 a year in additional premiums. Therefore, it is important for insurers to investigate fraud, and have tools and techniques in place to identify fraud early in the process lifecycle and prevent losses that otherwise will create additional financial burdens.

This paper highlights some of the tools and techniques available to insurers to combat fraud, and also details Hexaware's Insurance fraud engine (iFraudEngine) for early identification of fraudulent claims and underwriting irregularities.

2 Introduction

An exaggerated estimate of loss, an inflated value for a damaged property, a car repair estimate that includes pre-existing damages and escalated repair costs, and an adjuster's report allowing replacement of damaged car parts that can be repaired are all examples of ways that fraudsters compensate their annual premiums and policy deductibles. Insurers face a significant challenge to control their claims costs, a major portion of which can be controlled by detecting fraudulent claims early in the life-cycle and avoiding the payment of fraudulent claims. Insurers should consider the possibility that 10 to 20 percent of claims reported may be fraudulent. The impact is enormous if all of these claims get paid. This in turn weakens the insurer's financial position and its ability to underwrite large profitable risks, and affects its solvency margins. It also tremendously undermines the insurer's ability to offer competitive rates to its policyholders, which means a higher premium for all.

There are various steps the industry has taken to combat fraud, however, the problem continues to grow. Government has come up with new regulations and centralized fraud bureaus. Private organizations have also taken initiatives to set up bureaus for the exchange of information between insurers, and to maintain a centralized data of fraudsters. Insurance organizations have responded by establishing special investigation units (SIUs) supported by modern technology to detect and prevent fraud. However, the problems continue because of various reasons such as:

- Many insurers believe it too expensive to fight fraud, and think it is better to pay. They have accepted a certain amount as a cost of doing business.
- In order to have happy customers, meet service level parameters and stay ahead of competition, insurers often don't investigate fraud because it might stall claims processing or wrongly lead to targeting a legitimate customer. The challenge is to avoid false positives.
- Insurance organizations work with a colossal amount of data and they usually lack a single, enterprise-wide view of data. For a business to make the right decision and achieve optimal performance, information has to flow across functional boundaries such as Sales, Marketing, Claims, Underwriting, and Operations. The information needs to be consolidated from both structured and unstructured sources within and outside of the organization. For example, in order to identify a claim as a case of potential fraud, a claims analyst needs information from various sources like a customer management database, policy administration system, external industry databases, unstructured information from adjuster reports or social portals. The legacy system and a history of mergers and acquisitions need to get consolidated quality data from various sources in a timely manner, which leads to a need for data consolidation and timely access. Most companies lack this cross-value chain insight due to inconsistency, duplicity and siloed data encumbering optimal decisions, leaving them unable to get a complete view of a customer, account history and historical transactions. They are unable to identify separate entities operating in collusion or identify patterns that will only be suspicious when examined from a broader perspective

Amid these business dynamics, insurance fraudsters have become smarter and are cashing in on some of the reasons above from those insurance organizations unwilling to fight fraud. It has become a low risk/high return game for fraudsters as they already know the insurance processes and fraud detection systems in place.

3 Various faces of auto insurance fraud

The auto insurance business is one of the most susceptible to fraud. This section will introduce some of the most common types of Vehicle Insurance fraud.

Ditching
Ditching, also known as owner give-up, is getting rid of a vehicle to cash in on an insurance policy or to settle an outstanding loan. The vehicle is often expensive, purchased with a small down payment and is then reported stolen. In some cases, the owner abandons the vehicle, hoping that it will be stolen, stripped for parts, or taken to a pound and destroyed.

Past Posting
Past posting is when a person is involved in an automobile accident, but doesn't have insurance. The person then gets insurance, waits a little bit of time, reports the vehicle as being in an accident, and collects for the damages.

Vehicle Repair
This involves the billing of new parts on a vehicle when used parts were actually used. Sometimes it involves collusion between the adjuster and the body repair shop.

Vehicle Smuggling
This involves the purchase of a new vehicle with maximum financing. A counterfeit certificate of the vehicle's title is made showing that it is free and clear. The vehicle is insured to the maximum, with minimum deductible theft coverage. It is then shipped to a foreign port and reported stolen. The car is sold at its new location and insurance is also collected for the "theft."

Phantom Vehicles
The certificate of title is a document that shows the legal ownership of a vehicle. Even though it is not absolute proof that a vehicle exists, it is the basis for the issuance of insurance policies. Collecting on a phantom vehicle has been shown to be easy to do.

Staged Accidents
Predetermined vehicle accidents, or staged vehicle accidents, are often organized by several culprits who move from one location to another, perpetuating the accidents.

Inflated Damages
The business environment and competition for work in the automobile repair industry have caused some establishments to inflate estimated costs to cover deductibles. The insured is advised by the repair shop that the shop will accept whatever the company authorizes.

Vehicle Identification Number (VIN)-Switch
A VIN-switch occurs when a wrecked vehicle is sold and reported as being repaired. While the vehicle is not actually repaired, the VIN plate is switched with that of a stolen vehicle of the same make and model.

Rental Car Fraud
A person doesn't need to own a vehicle to commit automobile fraud. There are several fraudulent situations that can be perpetrated using rental cars. The most prevalent involve property damage, bodily injury and export fraud.

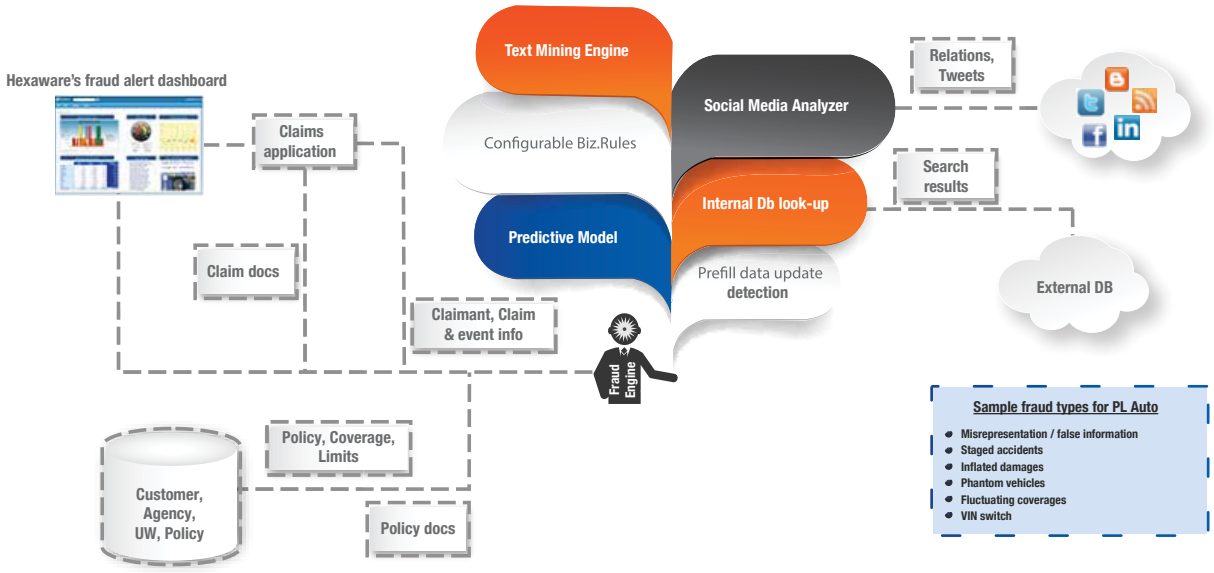
4 Hexaware's Insurance fraud engine (*i* FraudEngine)

Pattern detection & Fraud identification:

Most of the fraud management solutions available today follow a fragmented approach of detecting fraud based on only a single technique, say modelling or business rules, and only through available structured data from internal databases. This doesn't provide a holistic view and leads to a large number of false positives.

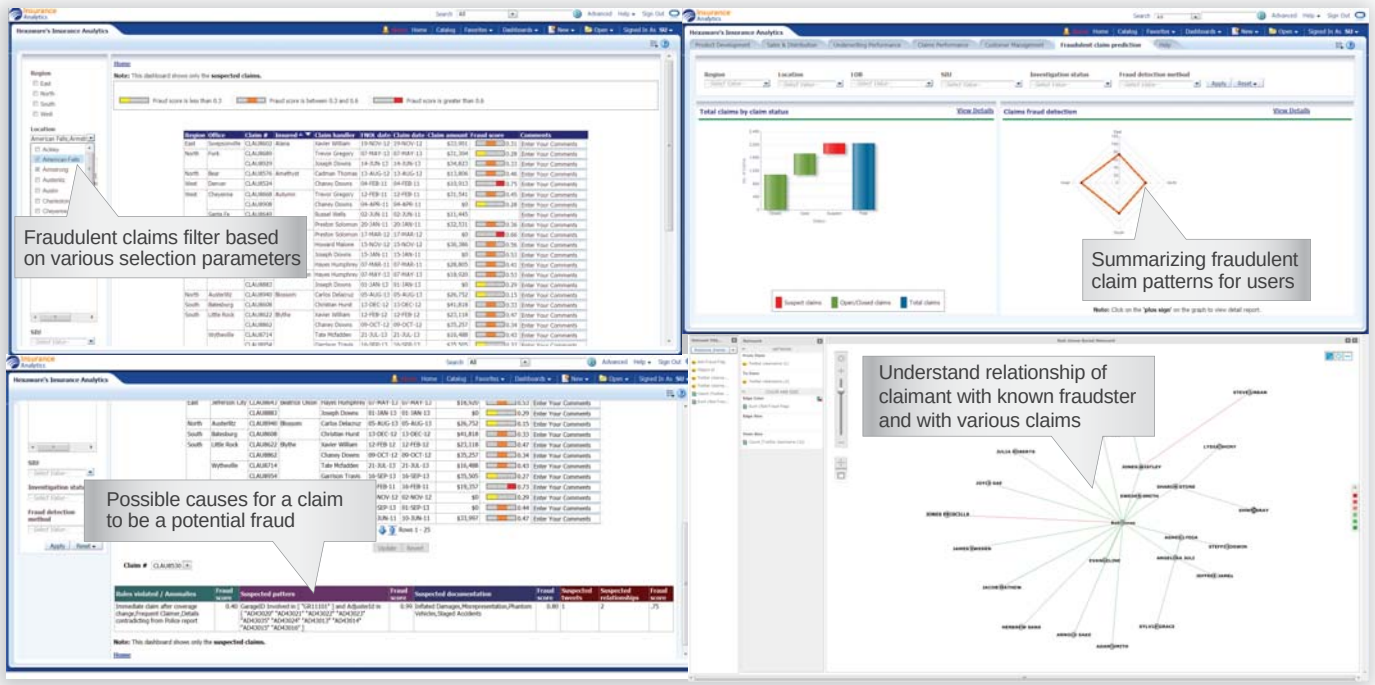
Unlike those currently available in the market, Hexaware's iFraudEngine supports fraud prevention, detection and management across the insurance functional areas via an integrated approach of consolidating information from internal and external, structured and unstructured sources. iFraudEngine combines the power of advanced predictive modelling, text mining, anomaly detection, automated business rules and social network analysis to detect and prevent fraud even before it occurs. Each technique produces a meaningful result, however, when combined, increases the quality of results and reduces the probability of false positives. Insurers are able to increase the rate of fraudulent claim detection, identify underwriting irregularity and stop claims and policy leakage. The solution is technology and business-systems agnostic, and seamlessly integrates with core insurance applications independent of the technology platform. It also remotely accepts data files and provides the necessary information back in any desired format.

Business components of *i* FraudEngine



***i* FraudEngine business architecture**

The user friendly dashboard and reports with fraud score and alerts make the decision making process easier and faster for insurance investigators.



Some of the key features of Hexaware's Insurance Fraud Engine are:

- **Predictive model** - Custom data driven predictive analytics model based on a variety of parameters developed by a team of experienced actuaries, statisticians, data scientists and domain experts
- **Configurable rules** - Variety of pre-configured business rules with an ability for business users to update and modify rules
- **Text mining** - Ability to mine information from unstructured sources such as adjuster reports, police reports and social portals
- **Relationships and connections detection** - View and analyze relationships and connections of individuals and groups involved in multiple claims, transactions and also on social portals with known fraudsters
- **Anomaly detection** - Identify anomalies in a large group of similar cases eg., claims cost values having multiple standard deviations outside of the *norm of similar type of accidents

5 Business benefits of Hexaware's *i* FraudEngine

With the use of Hexaware's Insurance fraud management engine, insurers can expect specific benefits, including:

- Prevention of fraudulent claim settlements resulting in reduced fraudulent claims cost payments by 5 to 10 percent
- Reduction in claims cost by initiating recovery for already paid claims
- Improvement in fraudulent claim detection rate with detection early in the process lifecycle
- Enhancement in adjuster / investigator efficiency with improved quality of referral and fewer false positives
- Consistent, error-free selection of profitable individual by preventing acceptance of cases with underwriting irregularities
- Reduction in claims and underwriting leaks to improve profit margins, enabling insurers to adequately price their products for customers

Insurance services

At Hexaware we provide end-to-end solutions in the Insurance domain. We provide service from assessing to planning and implementation to application development to maintenance support. We are capable of providing outsourcing services (Back-end processing, Claims adjudication etc.) Our discerning subject matter experts bring along a widespread knowledge of Life, Retirement & pension plans as well as of Property, Casualty and Health insurance plans. This diversified knowledge base combined with our extensive experience and competence in domain, technology, tools and test methodologies will help overcome business challenges in the Insurance business.

About Hexaware

Hexaware is a leading global provider of IT & BPO services and consulting. The Company focuses on key domains such as Banking, Financial Services, Insurance, Travel, Transportation, Logistics, Life Sciences and Healthcare. Our business philosophy, "Your Success is Our Focus," is demonstrated through the success we ensure for our clients. Hexaware focuses on delivering business results and leveraging technology solutions by specializing in Business Intelligence & Analytics, Enterprise Applications, Quality Assurance and Testing, Remote Infrastructure Management Services and Legacy Modernization. Founded in 1990, Hexaware has a well-established global delivery model armed with proven proprietary tools and methodologies, skilled human capital and SEI CMMI-Level 5 certification. For additional information please visit www.hexaware.com.

For more information

To learn more about Hexaware Insurance fraud management solution, please contact corporatemarketing@hexaware.com or visit www.hexaware.com

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