Application of Analytics in the Insurance Industry

Why Analytics?

With the evolution of social channels and growth of mobile interactions, as the need for customer intimacy grows and millenniums start gaining Insurance market share, analytics will continue to gain significant traction in the Insurance industry. As the focus of the industry slowly shifts from reporting and dashboards that help us understand the past, to advanced analytics that use the past to predict and optimize the future, companies seeking competitive advantage will integrate analytics into their operations. Analytic results will increasingly be used to drive operational execution and smarter decision making.

About the Author

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Kuldeep Bhat currently serves as Director for TCS' Insurance Global Consulting Practice in North America. He brings over 20 years of experience as a leader, result-driven executive, hands-on implementer, and consultant in Insurance technology solutions. Kuldeep has extensive experience in the delivery of large-scale transformation programs in the Insurance industry, with a successful track record of delivering IT value, business and financial results. Kuldeep has held executive roles; leading IT departments, package implementations, systems integration, and software development (onsite/offshore) programs. Also, he has significant experience in many of the leading life, annuity and retirement services software products, including OMNI, Vantage, NaviSys, Siebel, SOA/ Web Methods. Kuldeep holds a BS in electrical engineering.

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Introduction

There is lot of hype out there regarding analytics. The purpose of this article is to guide insurance executives to make targeted investments in the specific areas/initiatives where it makes business sense to leverage analytics tools and techniques.

Evolving Revenue Streams

Before we dive into specific initiatives it is important to understand the evolution of analytics. The following diagram explains how the field of analytics has evolved in the insurance industry. The journey began with parameterized reporting a few decades back, followed by data query tools. During the late 90's and early part of this century we have seen insurers use dashboards and online analytics. More recently we have seen a shift from traditional tools and techniques to predictive modeling and advanced analytics that help insurers predict the future by leveraging the past.

Industry Response to Trends

Despite the decline, fees continues to be the most significant component of revenue for most of the players. As the following chart shows, a growth (or fall) in fees is directly correlated to the overall revenue growth for most of the players; the only player to have bucked this trend is the London Stock Exchange (LSE) and we shall discuss the factors contributing to this later in this section.
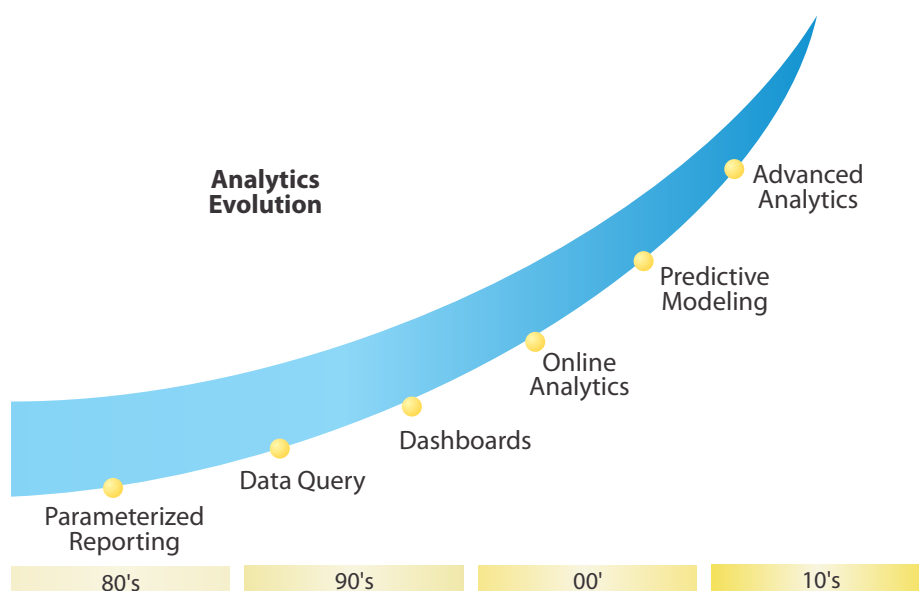
The following section will focus on the use of more recent analytics tools & techniques in the insurance industry.

Analytics Initiatives in Insurance

Although all insurers can leverage analytics in various areas, Property & Casualty (P&C) insurers are more inclined to invest in 1) fraud, 2) claims, 3) underwriting and 4) cash flow/investments, while as, life insurer priority is 1) customer and 2) cash flow/investments areas.

Fraud
Claims
Underwriting

Cash Flow/
Investment

Customer

P & C   Life
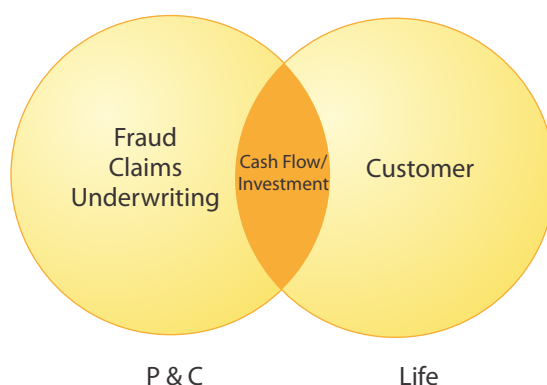
Fraud Initiatives

Fraud across all lines of business is on the rise - making fraud mitigation a growing priority. For P&C insurers in particular, reducing loss and expense while accelerating claim settlement times, are the key objectives. According to the National Insurance Crime Bureau, 10 percent of all P&C insurance claims are fraudulent, costing the industry more than $30 billion every year. Today, most companies find fraud in only one percent of claims. Increasing the efficiency of Adjuster and SIU resources, while driving further expense reduction, is a key priority. By leveraging predictive analytics and data mining and utilizing text analysis as the centerpiece of the analytics platform, insurers can mitigate fraud. Industry analysts estimate that more than 80 percent of all business intelligence is contained in text or un-structured data. Likewise, most of the insight associated with detecting fraud resides in text - examiner notes, medical reports, police reports, emails, web-based content, etc.

- Business Benefits

  - Loss reduction

  - Expense reduction

  - Accelerated claim settlement times

  - Improved efficiencies

- Impacted Metrics

  - Loss ratio

  - Combined ratio

  - Expense ratio

  - Claims pending

Claims Analytics Initiatives:.

P&C insurers are interested in understanding claims patterns by applying analytics tools and techniques to their existing claims data (frequency, severity, duration, and other parameters), so they can predict future behavior. This will, in turn, help them 1) create a better risk/price relationship, and 2) predict accurate and timely reserving and claims provision. Claims provision accuracy is critical, because the funds reserved for paying claims are not invested in long-term assets. The more accurate the claim provision estimate, the more profit potential. Utilize advanced analytics to analyze all structured and unstructured claims data, and leverage the full power of multi-dimensional reporting capabilities.

- Business Benefits
  - Improved risk/price relationship
  - Improved decision quality
  - Risk reduction
  - Optimized loss reserves
  - Increased profits

- Impacted Metrics
  - Combined ration
  - Operating ratio
  - Loss ratio
  - Risk exposure index
  - Loss reserve surplus
  - Capital adequacy ratios

Underwriting Initiatives

Insurers are looking at various ways of reducing long underwriting cycle times, improvements in underwriting process, improved expense and loss ratios that enable pricing flexibility and customer acquisition.

Analytics can be leveraged to automate and streamline underwriting processes, improve decision quality, and automate the analysis of prospects social profile to evaluate underwriting risk

- Business Benefits
  - Improve service levels
  - Improved customer satisfaction
  - Retained customers
  - Improved decision quality
  - Cost reduction
  - Increased profits

- Impacted Metrics
  - Customer retention percentage
  - Average speed of underwriting
  - Customer satisfaction score
  - Service support score
  - Underwriting ratio
  - Expense ratio
  - Loss ratio
  - Risk exposure index

Cash Flow Initiatives

Managing cash balances and reserves is mission critical for insurers. Investment strategies are dependent upon a real-time visibility to cash position, and improved cash flow provides more opportunity for investment managers.

Use advanced analytics to identify re-insurance recoverable opportunities, subrogation opportunities, and to recover third party deductibles.

- Business Benefits

  - Optimized investment management

  - Improved cash flow

- Impacted Metrics

  - Liquidity ratio

  - Operating fash flow

  - Net cash flow percentage

  - Working capital ratio

Customer Initiatives

Customer initiatives are very popular in the Life and Annuity (L&A) industry. For more sophisticated (L&A) products that involve heavy investment over a long haul, it is important that the Insurer develops and maintains enduring relationship with the customer. Customer initiatives can involve one or many of the following processes depending upon client's focus:

- Customer acquisition and retention•Customer driven integrated sales and services processes
  - Customer bio-metrics mapped to risk profile that drive customer pricing

- Customer satisfaction and service
  - Complete channel integration, consistent customer experience across different channels
  - Complete portal integration, sharing of functionality across multiple portals
  - Full use of eService offerings - customer integration hubs (email, web chat, collaborative browsing, virtual assistants/service)

- New product innovation
  - Customer driven product configuration
  - Customer behavioral analytics driving product design and implementation

- Sales & Marketing effectiveness
  - Customer intelligence and life changing events driving targeted campaigns, cross and up sell
  - Other channel marketing/ campaigning and alerts(PDA, mobile)

- Reputation Management
  - Depending upon the client focus, the analytics scope can vary from one to many of the following areas:

- Automated analysis of text and data can generate new product and service enhancement ideas

- Leveraging internal and external collaborative communities to enable crowd-sourced innovation
- Automated analysis of internet dialog
- Movement beyond brand mentions and basic categorization to assess brand impact
- Proactively initiate corrective action
- Analyze buying behaviors, customer need, customer segments, customer feedback, etc.
- Assess the impact of new product introductions and refine messaging early in the product launch
- Identify leads in social channels
- Assess the effectiveness of marketing campaigns
- Evaluate offering strategies for market segments
- Assess likely buyers for better targeting and improved conversion rates
- Identify social influencers and leverage word of mouth to virally drive new services
- Attrition modeling and customer scoring
- Automated analysis of customer comments to identify churn risk
- Automated analysis of social channels to identify issues that drive churn
- Proactively identify potential customer churn and take proactive action
- Identify cross-sell / up-sell opportunities
- Identify new offerings for existing customers
- Propensity models to identify prospects most likely to buy and create new customer opportunities
- Mine social media as a new source of lead generation
- Interpreting all incoming e-mails and routing to appropriate agents
- Capture of customer issues articulated in unstructured sources
- Capture of issue resolutions to enable self-service
- Re-routing of traffic to self-service alternatives
- Identification of customer issues in social channels with automated response through the same channel
- Identification of issue resolution in peer-to-peer support channels
- Validation of peer-to-peer resolution and capture in knowledge repository.

- ■ Business Benefits

  - Optimized call centers

  - Improved customer satisfaction

  - Retained customers

  - Acquired customers

  - Increase share of wallet

  - Cost reduction

  - Increased revenues

  - Increased profits

- ■ Impacted Metrics

  - Customer satisfaction score

  - Service support score

  - Promotion campaign ROI

  - New revenue percentage

  - Customer acquisition percentage

  - Revenue growth percentage

  - Marketing spend

  - Expense ratio

  - Combined ratio

  - Operating ratio

Conclusion

Insurance executives need to pick an area(s), if they haven't already done so, partner with an experienced vendor and implement a pilot project leveraging advanced analytics tools and techniques. It is important to pick an initiative that is most appropriate to their industry, more importantly aligning with the company's objectives. The analytics train has already left the station, insurers don't want to be left behind and loose competitive advantage.

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