Analytics & the Actuary

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Agenda

1. The need for analytics

2. SWOT analysis

3. Examples
Analytics

The application of data and numeric techniques for the business good.

Analytical Maturity Continuum

- Information
  - Most Companies
  - What Happened?
  - Tracking/monitoring
  - Trending

- Insight
  - Progressive Companies
  - Why Did it Happen?
  - Comparison
  - Visualization
  - Multidimensional
  - Opportunity exploration

- Foresight
  - Informed decision making
  - Address strategic issues

- Action

Retrospective
Exploratory
Prospective
Actionable
SWOT

**Strength**
- Professional brand
- Training
  - Exposed to risk
  - Survival models
  - Actuarial control cycle

**Weakness**
- Typecast in insurance & pensions
- Project management skills
- Seen as theoretical rather than practical

**Opportunity**
- Data, data, data…. 
- Business need
- Easy to impress
- Low barriers to entry

**Threat**
- Software
- Consultants
- Inertia to first principles solutions
## Analytics in insurance

<table>
<thead>
<tr>
<th><strong>Business Imperative</strong></th>
<th><strong>Business Strategy</strong></th>
<th><strong>Analytics Solution</strong></th>
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</thead>
<tbody>
<tr>
<td>Reduced underwriting costs and increased efficiency</td>
<td><strong>Underwriting Excellence</strong></td>
<td><strong>Underwriting Model</strong> to focus on high-risk complex applicants</td>
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<td>Improved underwriting management</td>
<td> </td>
<td><strong>Price Optimisation Analytics</strong> to identify demand elasticity of products within segments, and model competitive and marketplace response to actions</td>
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<td>Improved pricing precision</td>
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<td><strong>Algorithmic Solutions</strong> streamline the under-writing process by reducing the number of requirements needed and allowing underwriters to focus on high-risk, complex applicants</td>
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<td>Enhanced risk selection capabilities</td>
<td> </td>
<td><strong>Retention Modelling</strong> to focus efforts on retaining/not retaining customers who are most likely to lapse</td>
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<td>Reduced transaction costs</td>
<td><strong>Operational Efficiency</strong></td>
<td><strong>Cross and Up Sell Modelling</strong> – can determine likelihood an offer will be accepted</td>
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<td>Straight through processing</td>
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<td><strong>Customer Segmentation</strong> – Data driven, granular insights for smarter business decisions</td>
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<td>Improved ease of doing business</td>
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<td><strong>Effective Claims Management</strong> to determine which claims qualify for immediate or fast-track approval, flag suspicious claims, and facilitate claim handling in other ways</td>
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<td>Target the right risks for non-renewals</td>
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<td><strong>Claims Analytics/Improved Claims Management</strong></td>
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<td>Improved results by focussing retention efforts on better risks</td>
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<td>Deeper understanding of lifetime value of customers</td>
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<td>Increased cross-sell opportunities</td>
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<td>Recruiting of profitable producers</td>
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<td>Identify claims at risk for higher security</td>
<td><strong>Improved Decision Making</strong></td>
<td><strong>Enterprise Data Management (EDM)</strong> which assists client organisations with a data governance model, with a focus on improving data quality management, data retention standards and data security and privacy within an organisation.</td>
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<td>Optimize claims resource deployment to decrease claims severity</td>
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<td><strong>Effective Claims Management</strong> to determine which claims qualify for immediate or fast-track approval, flag suspicious claims, and facilitate claim handling in other ways</td>
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<td>Improved fraud detection, while speeding up payment of legitimate claims</td>
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<td><strong>Retention Modelling</strong> to focus efforts on retaining/not retaining customers who are most likely to lapse</td>
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<td>Increase the value of data within the organisation</td>
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<td>Improve data governance</td>
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Analytics in insurance: Marketing

Direct marketing database

Non-traditional data appended

Likely to Purchase Model

Profit & Risk Model

Model Score

Low Score

High Score

- Continue current marketing efforts
- Focus marketing resources on the most attractive potential customers
- Do not target those least likely to respond or qualify for insurance
- Continue current marketing efforts
Analytics in insurance: Underwriting

- **Mortality Rate**
  - Expected Model Mortality
  - Fully Underwritten Pricing Mortality

- **Continue to fully underwrite application**

- **Apply business rules to reduce requirements and processing time**

- **Pop. Ave.**

- **Low Model Score**
  - Expected Model Mortality
  
- **High Model Score**
  - Fully Underwritten Pricing Mortality
Remember…

• Have an open mind
  • Think about where you can add value

• How can your analysis be used for management action?

• What is the business strategy?