Do you really understand your data?

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Agenda

Where we are now …
Visualisations
Predictive and advanced analytics

Executive insight
Build a data foundation
Explore & analyze data insights
Prescribe next best action
Automated insight with AI and analytics
Augmenting human intelligence with AI and Analytics

Operationalized insight
Management insight
Semi-operational insight
Insurance pricing
A typical (and significantly simplified) Actuarial process flow

The challenges and issues of data today …
A typical (and significantly simplified) Actuarial process flow

Data systems
Data conversion
Modelling
Analysis
Communication

Segregation of duties
Communication
Analysis
Modelling
Data
Data conversion
Data systems

Well governed
Control
'Modular'
Expertise in different areas

Complex processes
Information asymmetries
Skills barrier
Time delays

In-flexible change environment

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What are data visualisations?

Delivering value and insight

Insights and risk identification
- Identification of issues: Visualisations offer mechanisms to identify outliers and highlight data quality issues.
- Additional insight: Drilldown into granular data, from multiple sources, and improve the understanding of your customer
- Regulatory compliance: Data analytics can strengthen data governance and assist in the production of reports and regulatory compliance statements

Opportunities
- Stakeholder communications: Visualisations help to understand, collate and communicate management information to stakeholders
- Enriched analysis: Provide drilldown capabilities to enhance understanding and combine data sources to enrich current analysis
- Interactive calculations and queries: Embed calculations in an interactive and 'clickable' tool to facilitate greater insight and reduce reliance on existing model production processes

Efficiency
- Analysis and reporting in one tool: Perform analysis and provide governance reports all from a "one-stop-shop"
- Communication and engagement: Provides powerful communication tool that facilitates understanding and informs decisions
- Predictive methods: Use predictive methods and/or proxy methods to offer an early view of expected impacts to assist the validation of actual impacts

Case study 1: Data quality visualisations

Data
- Data quality is poor
- The granularity of data is not sufficient
- The data processes are a black box ...

Manage Data
- Relevant data
- Appropriate data sources

Analytics and Visualisations
- Insights
- Rule/Algorithm

Drive Decisions

Improve Performance
- $$$
- Manage Risk

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Case study 1: Data quality visualisations

Data quality is poor

The granularity of data is not sufficient

The data processes are a black box...
Case study 2: Insurance reporting dashboards

Data quality is poor
The granularity of data is not sufficient
The data processes are a black box…
I don't understand how to analyse large data sets
I don't have capacity to investigate data alongside BAU activities
I'm too busy answering stakeholder questions before I can perform data analysis
Meaningful data analysis takes a long time
Data comes from multiple systems
Technology, Skillset/time, Data

IFRS Mortality
Case study 2: Insurance reporting dashboards

- The granularity of data is not sufficient
- I don’t have capacity to investigate data alongside BAU activities
- Data comes from multiple systems
- I’m too busy answering stakeholder questions before I can perform data analysis

Case study 3: Interactive re-calculations

- Data quality is poor
- The granularity of data is not sufficient
- I don’t understand how to analyse large data sets
- I don’t have access to the data I need
- I don’t have the tools/technology available
- The data processes are a black box …
- Meaningful data analysis takes a long time
- Data comes from multiple systems

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Case study 3: Interactive re-calculation

I don't understand how to analyse large data sets

I don't have access to the data I need

Data comes from multiple systems

The data processes are a black box...

Meaningful data analysis takes a long time

I don't have the tools/technology available
In summary … there’s hope?

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Augmenting human intelligence with AI and analytics

Insurance pricing     Semi-operational insight     Automated insight with AI and analytics
Predictive Analytics for Life Insurers

A Range of Data Sources
- Policyholder data
- Transactions
- Web clicks and interactions
- Other insurance / savings policies
- Social media / sentiment indices
- Economic

Actuarial roles
- Pricing & product design
- Reserving
- Capital
- Asset & liability management
- Experience analysis

Framework

Scope
- Problem Identification
- Data Model
- Predictive Analytics

Data Model
- Problem Identification
- Data Mining
- Data Model
- Predictive Model
- Identification of Predictive Features

Predictive Analytics
- Scoring
- Marketing Action Plan

Model Output
- Actionable output, e.g., visualisation

Problem Identification
- Agree problem definition across teams, e.g., actuarial, sales and marketing

Data Model
- Understand data available
- Data navigation: identify strong predictors or eliminate redundant data.
- Source new data or enrich data
- Data transformation and binning

Predictive Analytics
- Choose a statistical learning method or a set of them
- Calibrate using a learning dataset and validation dataset
- Assess statistical quality of model
- Analyse model output

Model Output
- Actionable output, e.g., visualisation

Data Model
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Model Output
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Framework
Why now?

- Only 14% of consumers are very satisfied with the communication they receive from insurers
- 44% have had no interaction with their insurers in the last 18 months
- 70% of ‘moment of truth’ interactions result in positive outcomes

Insurer of the future?

- Augmenting human intelligence with AI and Analytics
- Prescribe next best action
- Operationalised insight
- Semi-operational insight
- Management insight
- Explore & analyse data insights
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- Executive insight
- Automated insight with AI and analytics
What would the “Google Life Co” do?

- Real time automated reporting, workflow management, visualisation and analytics.

- Customer focused and insight and analytics is available at the push of a button.

- Generic language complements the Actuarial skill set rather than relying on specialist coders - complex functions are easier to implement.

- Less hardware and a single infrastructure – reducing/rethinking the need and use of servers/grids by moving to alternative technologies.

- Low cost in terms of licensing, hardware (potentially zero), specialist resources no longer required.

- No release cycles or vendor upgrades - promotes flexibility, integration and adaptability.

Thank you

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