Taming Your Data
With a case study from the Swiss health insurance industry

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Agenda

Pedro Fonseca:
• The Value of Data
• How to Tame Your Data
• Mono-Temporal Versioning (example)

Marc Sarbach:
• Swiss OKP market
• High level process
• Model schematic

• Demo
The Value of Data

- Data generates a lot of value

- We hear that:
  - “Data is the new oil”
  - “Data is the new currency”

- And data can be bought and sold

- So, where is it booked in the balance sheet?
The Value of Data

- In 2015, **Credit Suisse** reported:
  - Software: **CHF 5.9b** (13% of Equity)
  - But no data assets

- **Prudential plc** reported:
  - Software: **< GBP 97m** (< 1% of Equity)
  - And no data assets

- **Facebook** has about **USD 2b** of ‘acquired users’
  - Close to a data asset
The Value of Data

- Data is typically not booked
- But business decisions rely on it
- **Wrong data can lead to arbitrarily large losses**
- **So one better tame it**
How To Tame Your Data

Some of the difficulties:

• Where is the data?
• Is it understandable?
• How to collaborate?
• How does it change?

Solution:

• Structure the data
• Focus on the business
How To Tame Your Data

Solution:

- Serve the data centrally (web-server!)
- Ensure one version of the truth
- Make it easy to use

Where is the data?

15th century

20th century

Applications

Request
Response

Request
Response

Data Sources

DBs
How To Tame Your Data

Solution:
• Introduce a **common data language**
• Give exact meaning to words and how they tie-in e.g. to parameters
• Use it to define the **data model**

Applications

Common Business Domain

- Interest Rate
- Pattern
- Index
- Currency
- Geography
- Line of Business
How To Tame Your Data

Solution:

- Use **Version Control for Data**
  - Mono-temporal (branches)
  - Bi-temporal (+ when data can be used)
  - Tri-temporal (+ date it applies to)
  - Etc.

You can:

- Collaborate in several groups
- Have controlled states of data
- Evaluate multiple scenarios
- Differentiate between production and updates
- Deploy data without operational risk

You Have:

- Controlled testing and data deployment
  E.g. for new list of countries, new list of business units, ...

How to collaborate?
How does it change?
How To Tame Your Data

Use Version Control for Data

How to collaborate?

Version Control is essential in Data Management
(today, it is already unthinkable to develop software without
Version Control for Code in place)
Mono-Temporal Versioning (example)

**Today:**
- Merge
  - Create branches
  - Create revisions
  - Navigate

**1 Week Ago:**
- Merge revisions
- Find differences
- Graft data

**1 Month Ago:**

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**Your Branch**

** Someone else’s Branch**

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Many thanks for your attention

For questions or feedback, please contact:

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Swiss OKP market
High level process
Model schematic
Demo
Swiss OKP market

approx. 3 – 3.5 percent loss inflation per annum
High-Level

Planned premium adjustments
Strategic targets

Production
DWH
Queries DWH
‘old’ Emails
‘old’ Excel

Data Collection

Actuarial
calculations

Actuarial
Premium

Reporting / Pricing decision

Sensitivities

Projection
Competitors

Projection incl. competitor behavior

Sense checks and documentation

Model schematic

- Current base premium
- Premium adj.
- Projected base premium
- Rebate Franchise
- Rebate Ins. model
- Projected derived premium
- Projected premium income
- Number of insured as at valuation date
  - Mortality assumptions
  - Mutations per canton
  - Birth
- Lapse model
- Projected inforce population
- Projected insured population
- Projected premium per product
- Competitive ranking
- New business model
- Projected new business population
- Projected inforce population
- Projected insured population
- Competitive ranking
- Estimated premium adjustments
- Projected competitive premiums
- Annual inflation assumptions
- Combined Ratio
- Projected number of insured
- Further management information
- Result
- Expenses fixed
- Expenses
- Expenses variable
- Risk compensation by insured
- Annual inflation assumptions for risk compensation
- Projected risk compensation
- Current competitor premium information
- Annual inflation assumptions
- Current gross claim per insured prior year
- Deductible prior year fixed
- Deductible prior year variable
- Current gross claim per insured current year
- Deductible current year fixed
- Deductible current year variable
- Current gross claim per insured prior year
- Deductible prior year fixed
- Deductible prior year variable
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- Risk compensation by insured
- Annual inflation assumptions for risk compensation
- Projected risk compensation
- Combined Ratio
- Projected number of insured
- Further management information
Demo