Pricing in an Increasingly Connected and Automated World

Graham Wright and Richard Clarkson

27 June 2019
Today’s talk is a talk of two “halves”

- “Pricing in an Increasingly Connected and Automated World”

Part 1 will look at (broadly)

- Automated pricing methodologies, techniques and applications
- The industrialisation of data enrichment

Part 2 will look at (broadly)

- Automated underwriting judgement and empirical decision support
- The connected systems environment to support this new world
What do you see?

What is the first thing you see?

At any point in your life did you think this was modern technology?
(Some) insurance hot topics of the last two years
Today is about pricing in an increasingly automated world
The workforce of tomorrow

- Traditional employees
- Outsourcing
- Free agents
- Alliances
- Automated processes
- Volunteers
- Robotics
- Artificial Intelligence
Machine learning today

- Machine learning made theoretical

- Investigation into methods

- Focussed on “which method is better” rather than getting applications live and learning

- Restricted in thinking to traditional exposure and response variables – do what we did before but better

- Or not thinking about it at all yet…
Choosing a method
Dimensions of choice

- Predictive power
- Interpretation
- Table implementation
- Analytical time and effort
- Execution speed
- Stability
A fuller summary…
Machine learning today

- Machine learning made theoretical
  - Investigation into methods
  - Focussed on “which method is better” rather than getting applications live and learning
  - Restricted in thinking to traditional exposure and response variables – do what we did before but better
  - Or not thinking about it at all yet...

- Machine learning made real
  - Seeing ML as a means to identify new insights and acting on these quickly – with broadened analytical aspirations
  - Active deployment of ML techniques across operations focussed on “low hanging fruit”
  - “Any model better than none” pragmatism
  - Focus on live applications of techniques, performance monitoring etc.
  - Choice of approach driven by multiple characteristics (e.g. accuracy, interpretability, scalability)
But what fuels all this?

Data ➔ Factor engineering & response variables ➔ Methods
What’s new in data?

Pillars of enrichment

Person data enrichment  Vehicle data enrichment  Home data enrichment  Trade data enrichment  Open source data enrichment  Internal data from claims
So how do we get to the future?

Cultural change

Technological change

Structural change
Structural change
Structural change
Today’s talk is a talk of two “halves”

- “Pricing in an Increasingly Connected and Automated World”

- Part 1 will look at (broadly)
  - Automated pricing methodologies, techniques and applications
  - The industrialisation of data enrichment

- Part 2 will look at (broadly)
  - Automated underwriting judgement and empirical decision support
  - The connected systems environment to support this new world
Commercial has been lagging behind Personal Lines

Especially where shared parentage

Personal Lines

Commercial (SME/MM)

London Market

Lloyd's
We normally see insurance companies through this lens…

Head Office/Group Functions

Sales  Underwriting  Operations  Finance

New Business

Renewals

Mid Term Adjustments
Focused on expert/judgement-led decision making

We have an inventory of over 500 decisions… and counting!
Mastery is required in 4 distinct dimensions

- Data Extraction
- Analytics
- Decision Engine
- Integration
Current state Underwriting Process – New Business Submission
Future state

- Broker: Opened email and attachment
- Information scraped
- PAS
  - Submission propensity & Profitability models
    - Driven by predictive analytics
    - Flexible
    - No IT involvement
- Underwriter
  - Prioritized submission inbox
  - Dashboards
Future state

Data Extraction

Broker → Opened email and attachment

Information scraped → PAS

Submission propensity & profitability models
- Driven by predictive analytics
- Flexible
- No IT involvement

Prioritized submission inbox → Underwriter

Dashboards

PAS (Information scraped)
Future state

Data Extraction

Broker → Opened email and attachment → Information scraped → PAS

Predictive Analytics and decision support

Submission propensity & Profitability models
- Driven by predictive analytics
- Flexible
- No IT involvement

Prioritized submission inbox → Underwriter

Dashboards
Automation, predictive analytics and empirical decision support

Effectiveness • Growth • Profit