History Lessons:

Fighting Moore and Parkinson to achieve pricing success

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03 June 2016

Introduction

- 20+ years of personal lines pricing

- Lots has changed!

  – Or has it?

- Why do we have the same conversations, dressed up in new clothes?

- And now for some quotations to help us get started

Source material

History; Parkinson; Moore

History lessons

"**Those who cannot remember the past are condemned to repeat it**"

- George Santayana

"**History repeats ... first as tragedy, then as farce**"

- Karl Marx

Statistics

"Over X% of statistics are made up on the spot"

- Various sources, 50%<X<99%

- Unless stated otherwise, all the numbers in the presentation were made up to help make a point

Parkinson's Law

"**Work expands so as to fill the time available for its completion**"

- For today, I assume this means:
  - Work expands to fully utilise the available resources

- Where resources may be people, computers, time, …
  - "Bureaucracy increases by 5% to 7% per annum"

Parkinson and pricing teams

- Number of actuaries employed in pricing a leading motor book:

  - 1975: 0

  - 1985: 0.2 (GIRO conference started this year)

  - 1995: 1

  - 2005: 5

  - 2015: 25

- 17.5% annualised growth over last 30 years

  - 10% more pricing resource each year after adjusting for bureaucracy?

Moore's Law

"The number of transistors in a dense integrated circuit doubles approximately every two years"

- Colloquially, for today, I assume this means:
  - The speed of computers doubles every two years
  - The amount of storage in a standard disk (array) doubles every two years
  - 41% annualised growth rate
- Countered by Wirth's law
  - Computer programs get bigger and compensate for speed increases by running more slowly

Moore and pricing teams

- Pricing work tends to use computers (or calculators in 1985?)

- So the amount of work one person can do in a day has increased by 41% per annum

- Hence the amount of work done by pricing teams has increased by 55% per annum over the last 30 years

  – Sounds familiar?

  – What are we all doing, exactly?

History repeating

Perennials; Reality

Perennial issues

- Legacy systems

- Geography

- Vehicle groups

- Time to complete analysis

- Time to get rates to market

Legacy systems

1990's problems

- Systems designed in 1970s

- Inflexible, hard to access

- Can't cope with adding any new fields

- Multiple systems can't speak to each other

2010's problems

- Systems designed in 1990s

- Inflexible, hard to access

- Can't cope with adding 100 new fields

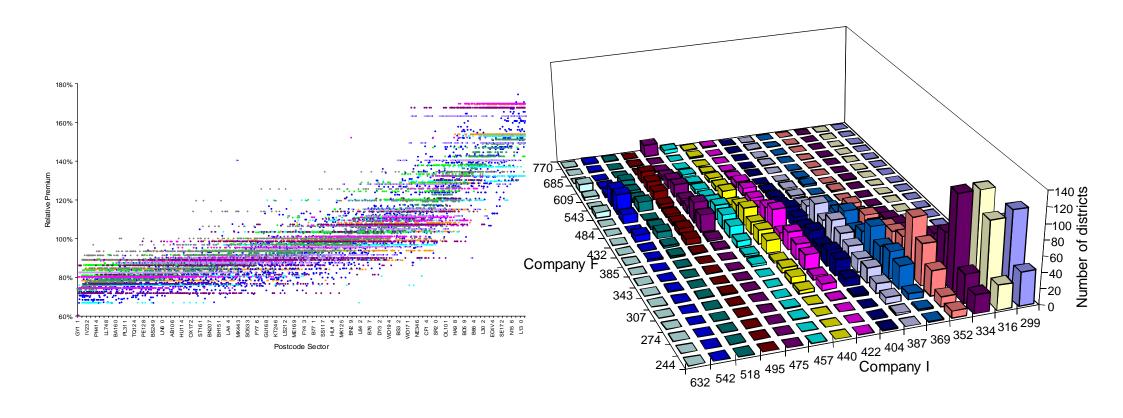- Multiple systems can't speak to each other

Geography

1990's problems

- How do I deal with postcode (district)?

- What is the right relativity?

2010's problems

- How do I cope with postcode (unit/address point)?

- What is the right relativity?

Geography 1999

- Vehicle postcode zoning in personal lines rating, D Coughlan (Chair) et al

Time to …

1990's problems

- It takes too long to run a model

- It takes too long to get rates to market (months…)

2010's problems

- It takes too long to run the models

- It takes too long to get rates to markets (days…)

What's happening here?

- If it took one actuary 30 working days to set prices in 1995, it should take 12 minutes to do the same calculation in 2015 ($2^{10} = 1024$)

- Ignores thinking, scripting and understanding time
  - All the computer time should be reduced to (near) zero
  - Perhaps 5 to 10 days?

- Actually it takes 25 actuaries 30 days
  - Is Parkinson beating Moore?

What's happening here?

- The analytical arms race continues, with smaller margins driving interest in ever more marginal gains

- Reality is we are doing more:
  - More models (x3?)
  - More factors (x10?)
  - More investigations (x4?),….
  - Faster turnaround, more frequent repricing

- So 5 days thinking is now 150 days, repeated quarterly
  - Six weeks for a 5 person team

What's happening here?

- Classification is hard, and a moving target
  - Areas get better or worse faster than classifications updated
  - New cars, new technology, different underlying risk

- New classifications produce dislocation
  - Additional pain many are happy to delay
  - Longer delay leads to greater dislocation…

Lessons from History

Marketing;Marxism/Trotskyism;Coaching

Lessons from history

- Marketing: Planned obsolescence

- Marxism/Trotskyism: Continuous revolution

- Executive coaching: What got you here won't get you there

Planned obsolescence
AKA Design life

- Most IT systems come with a use by date

  - New versions of software come out all the time

  - Hardware needs replacing "regularly"

- Many issues caused by delayed upgrades

  - IT departments really don't like change

  - New computers are expensive

    - Really? "I should buy a PC on the high street and expense it…"

If only…

- Available storage and processing power increased smoothly, rather than in fits and starts

- The latest version of software is always available

- **Cloud** cuckoo land?

Continuous revolution

- How often do you conduct a:

  - Major model review?

  - Geographical zoning exercise?

  - Vehicle classification exercise?

  - Highest rated driver (or similar) algorithm review?

  - Root and branch review of modelling approach?

- Why are the answers to these questions different?

  - The above can add significant value, so why are they rare?

- There is no such thing as "once and done"!

If only…

- We planned in more time to do the basics better

- We had more space to innovate, rather than spending more time doing the same things in more detail with more data

- If it was easy to try out different approaches without a six to twelve month IT implementation project

  – "freedom to fail"

Getting "there"

- Getting "here"
  - More actuarial involvement in pricing
  - More models on larger datasets
  - Evolution? Or actuarial work expending to fill time available?

- Humans are now the limiting factor

- We fix today's problems, but don't enable tomorrows solutions

- Law of diminishing returns in the land of the winner's curse?

- We are sold revolution, but get evolution

If only…

- We knew the next big thing!

- We could take the people out of the analysis

- We captured the right data in the right way

- We could get off the treadmill and think genuinely differently

- Identify the real disruptor and get ahead of the curve

  – Driverless cars?

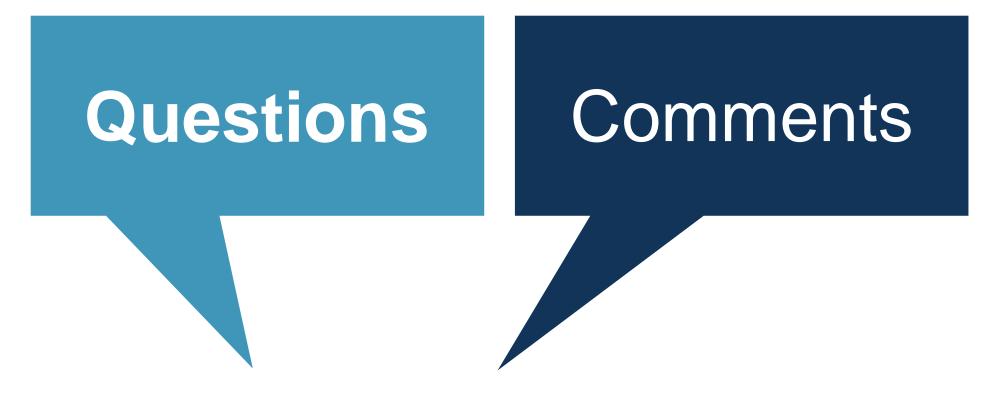 – Sharing economy?

  – Peer-to-peer?

Conclusion

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- We have more resources than ever before, but we are stuck in the same rut

- To break free we need to:

  – Make IT work for us

  – Redirect our effort from small marginal gains to larger incremental changes

    - But this is still "here"

  – Try something different to get us "there"

Moore or Parkinson?

- Parkinson is winning
  - Bigger teams means more management, that's life
  - Moving from 70/30 to 90/10 was a good idea, where do you go from 99/1?

- Moore is compensating, but not enough

Questions Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.