

Risk & Actuarial Systems Forum

London

28th February 2014

@quintant

Introducing Quintant Partners

Adam Tyrer

Introducing Quintant Partners



Introducing the Risk & Actuarial Systems Club

- Purpose
- Components – including the Forum
- Benefits
- Membership

Today's Agenda

Timing	Session	Speaker
13:00 – 13:30	Arrivals, Light Lunch, Networking	
13:30 – 13:45	Opening Remarks / Introducing Quintant Partners	Adam Tyrer
13:45 – 14:30	Hypebusters – The Implications of Disruptive Technologies	Guy Shepherd
14:30 – 15:15	Developing models post-IMAP, an Orwellian Dystopia?	Adam Tyrer
15:15 – 15:45	Coffee Break / Networking	
15:45 – 16:15	Guest Speaker: <i>What Does an Actuary Want from Technology?</i>	Gerry Gallagher
16:15 – 16:50	Group Discussion <i>A View from the Trenches – Priorities for 2014</i>	All
16:50 – 17:00	Closing Remarks	Adam Tyrer
17:00 – 19:00	Drinks Reception	



Implications of Disruptive Technology Trends

Guy Shepherd

“hype often conceals something, a lack of substance perhaps. with #bigdata hype may conceal the enormity of something”

Frank Buytendijk, Gartner

Digital Disruption



Information



Cloud



Social



Mobile

Disruptive forces are at work in IT and the digital economy.

To what extent could (or will) these “killer” technology trends, and other complementary forces change the risk & actuarial technology landscape?

Cost of Complacency



BORDERS.

amazonkindle



QUINTANT
PARTNERS

Information (aka Big Data)

What is it?

Increased volume, variety, and velocity data (and veracity)

Why should I care?

In theory at least, access to additional sources of reliable and more real-time data should enable better and differentiating decision making (modelling)

The problem

Firms often struggle to make sense of existing volumes and sources of data. Traditional data integration, management, storage and analysis capability isn't suitable. Wood for the trees. Lack of business problem or opportunity. Ethics.



Cloud Computing



What is it?

Use of off-premise compute and storage resources based on a utility (pay-per-use) pricing model

Why should I care?

Access to (almost) limitless resources, when you need it and a price that undercuts on-premise computing

The problem

Legacy platforms, especially modelling never engineered with cloud in mind. Concerns regarding security and privacy persist. CTOs want a return on their data centre investments. Vendor utility models still evolving. Exotic needs of actuaries.

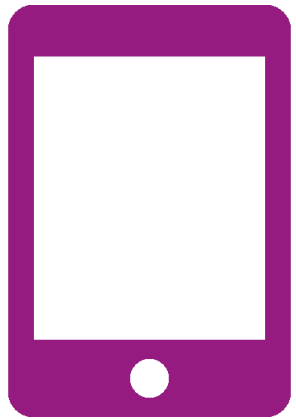
Mobile

What is it?

Proliferation of location-aware devices (phones, tablets, smart devices, sensors, wearable biotech) providing new sources of data and modes of consumption

Why should I care?

New channels, products and segmentation. Personalised end-user experience – what you want, when you want it, and how you like it



The problem

Integration of mobile with legacy platforms – data, modelling, analytics and presentation. In need of more “killer” products – such as telematics, and understanding the art of the possible

Social

What is it?

Using social networks as a new source of data to isolate new product needs, buying behaviours and sentiment analysis

Why should I care?

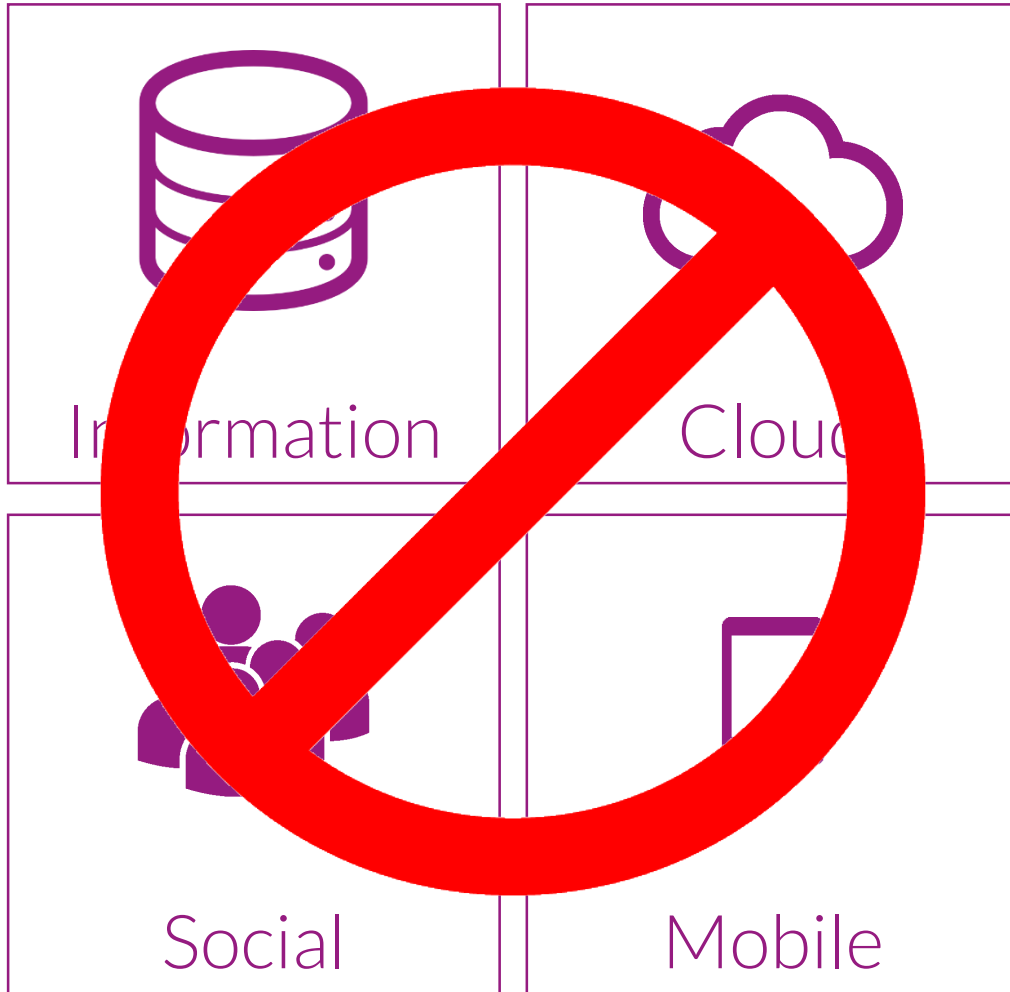
Understanding what customers want, in isolation or in social groups could drive focused, differentiating and personalised product design and marketing efforts

The problem

Deriving actionable insight, developing new product variations and marketing activities is not a fully integrated set of activities. The value chain associated with social interactions isn't obvious.



Ready to Receive?



Traditional insurers aren't in a position to fully embrace emerging trends.

Attempts to graft new onto old will ultimately fall short of ambition and potential

Industry Challenges



Legacy



BPM /
Automation



Risk
Management



Trusted
Analytics



Regulatory
Flux

The shortage of investment in insurance technology over last 20 years provides an opportunity for those organisations willing to differentiate themselves through transformation

But could also leave the door open for non-traditional and technology-centric competition

Secondary Movements



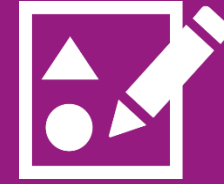
Open Source

F#

New
Paradigms



Everything as a
Service



New Business
Models



Predictive
Analytics

Combined with the primary disruptive trends,
there is a confluence of forces which together is
likely to lead to industry upheaval

Transform or Else



Transform

Differentiating ideas

Predictive and prescriptive modelling, social analysis, gamification, insurance data as an asset, true BPM, insurance marketplace (value of me), telematics, human sensors, event-driven modelling and analytics



Grow

Isolated new thinking

Embedded business intelligence & analytics, basic workflow and automation, new development paradigms, new channels and portals, mobile interactions, reduced legacy debt, personalisation, event-driven

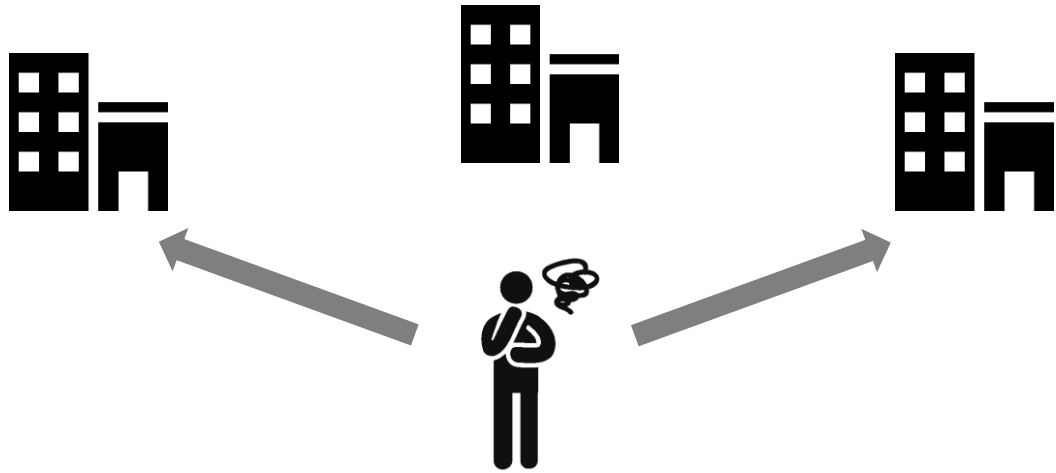


Run

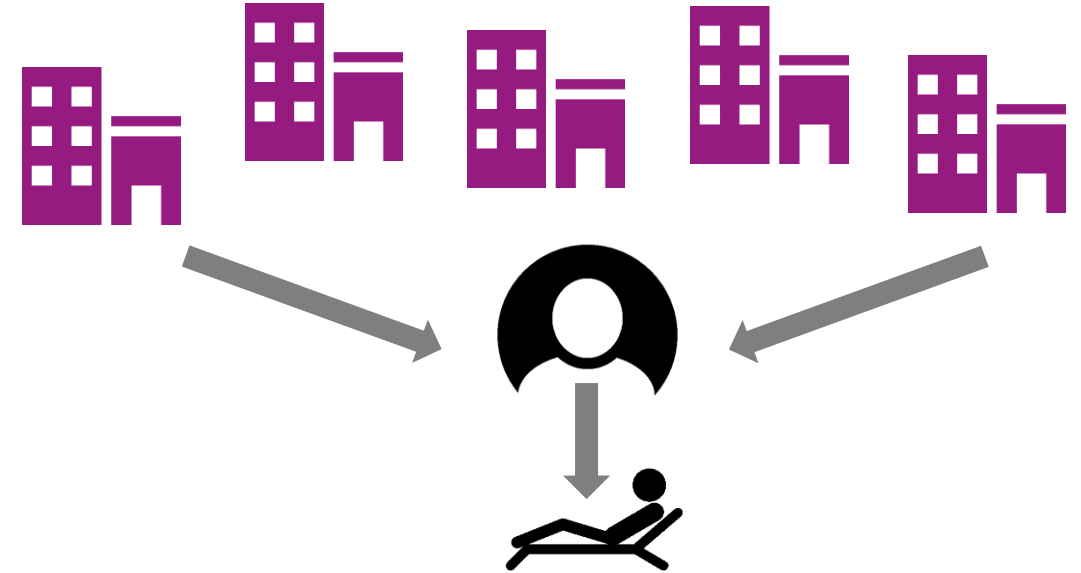
Non-differentiating core capability

Might include consolidated policy administration and claims management, single view of the customer, outsourced HR, centralised IT and Risk Management, BPO, retrospective analytics

The Future Marketplace



- Consumer finds for themselves, either in isolation or via intermediary
- Brand affiliation plays an important role in selection
- Limited standardised data, leaving little or no room for personalisation

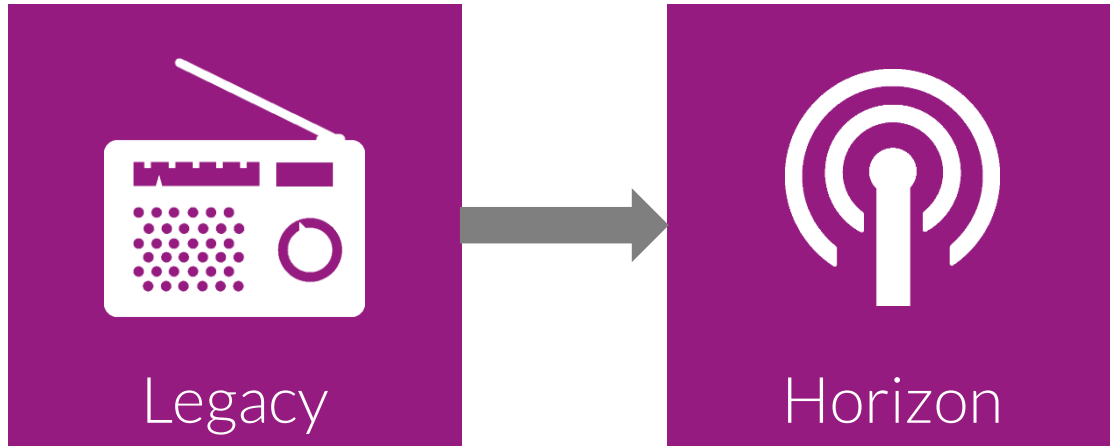


- Online self contains all relevant information to the product(s) of interest
- Providers bid with personalised products to win your custom
- The more information you share, the more personalised your product will be

Modelling as a Service



Skills Gap?














- Working with large volumes of diverse data despite hardware, software, and bandwidth constraints
- Cleaning the data and making sure that data is consistent
- Melding multiple datasets together
- Statistical and predictive analysis
- Visualizing and interpreting that data
- Applying findings from analytics to develop new products and markets

Sound like
anyone you
know?

Bored at Work?

Active Competitions

		Allstate Purchase Prediction Challenge Predict a purchased policy based on transaction history	2 months 188 teams \$50,000
		March Machine Learning Mania Tip off college basketball by predicting the 2014 NCAA Tournament	15 days 151 teams \$15,000
		Flu Forecasting  Predict when, where and how strong the flu will be	3.5 days 50 teams
		Walmart Recruiting - Store Sales Forecasting Data Scientist at Walmart Various Locations	2 months 96 teams Jobs
		Galaxy Zoo - The Galaxy Challenge Classify the morphologies of distant galaxies in our Universe	35 days 204 teams \$16,000
		Loan Default Prediction - Imperial College Lon... Constructing an optimal portfolio of loans	14 days 502 teams \$10,000

K
kaggle



data



crowd



tools



models

problem

“By 2020, more than three-quarters of the S&P 500 will be companies that we have not heard of yet”

Professor Richard Foster, Yale University

**insure
with
facebook**

Googlesurance

* These companies may or may not exist

Closing Thoughts

- Educate the enterprise – understand what the emerging trends could do for you
- Assess the capability of the as is organisation – run, grow or transform – ready to receive disruption
- Map existing skills and capabilities to those required – don't assume they don't exist – they might be closer than you think
- Develop a strategy to rebalance the impact of legacy and provide the foundations on which to compete with future, perhaps unexpected competition

Quintant Research & Analysis

- Actuarial Systems Strategy Development Toolkit
- Data Alchemy or Fools Gold – Unlocking the Value of Insurance Data
- Future Trends in Modelling Technology
- Financial Modelling 2.0

Developing Models Post-IMAP

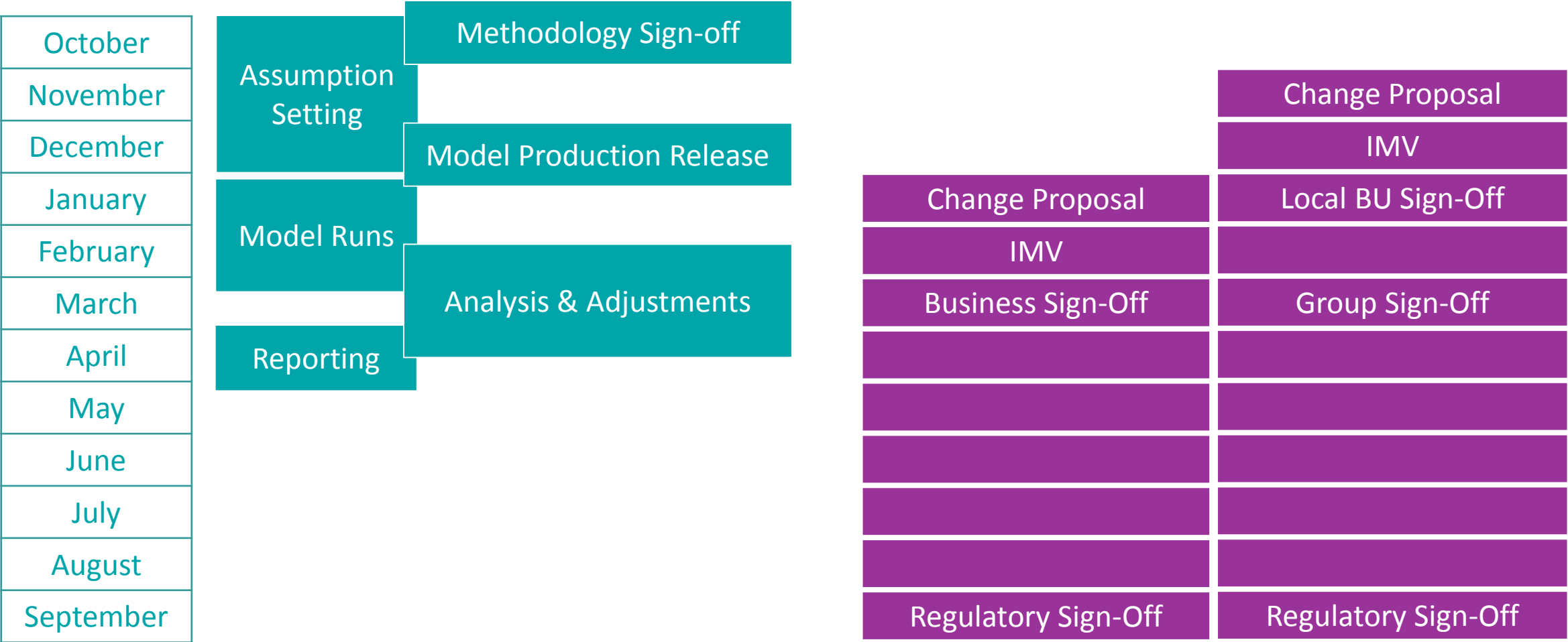
An Orwellian Dystopia?

Adam Tyrer

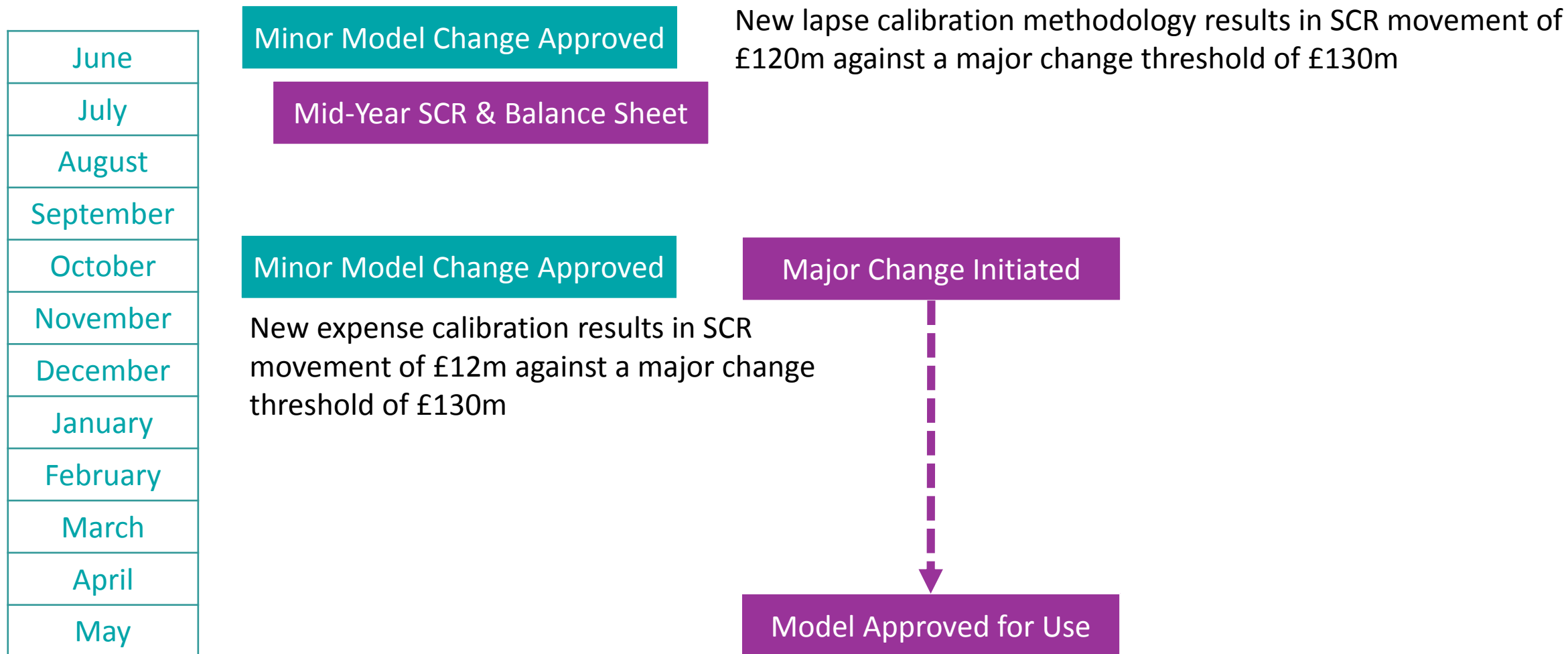
The Race to IMAP



Future Model Change – Business as Usual?



Future Model Change – Business as Usual?



What is a Model Change?



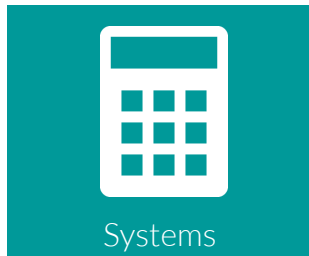
Change in data source
Change in period or amount of data used
Change to methods used to group or process data

Annual updates to data
Alteration in the governance committee reviewing data



Specific risk recalibrations
Increase in number of points used to fit proxy model
Change to Operational Risk methodology
Change to curve fitting methodology
Change to aggregation approach

Update to approval and review governance
Refresh of parameters based on new data
Choice of different 'approved' distribution based on data
Updates to fitting formula due to changes in mix
External changes in tax rules



Implementation of new aggregation tool releases
New risk systems (eg Operational or Credit risk)
Changes to ALM systems (eg Prophet/MoSes)
New liabilities or asset classes

Change to asset mix (where already modelled)
Implementation of agreed management actions
Upgrade of Excel or ALM system version



Updated Internal Model Governance Policies
Change in Governance structures
Changes to underlying business structure
Internal reinsurance structuring

Personnel Changes
Change of Reinsurance counterparty



On-going Model Approval



- What is Change?
- Internal approval processes
- 6 month PRA/College “lag”
- IMV before approval
- “Shadow” models and/or holding internal capital add-ons?
- Cumulative Minor to Major Change?

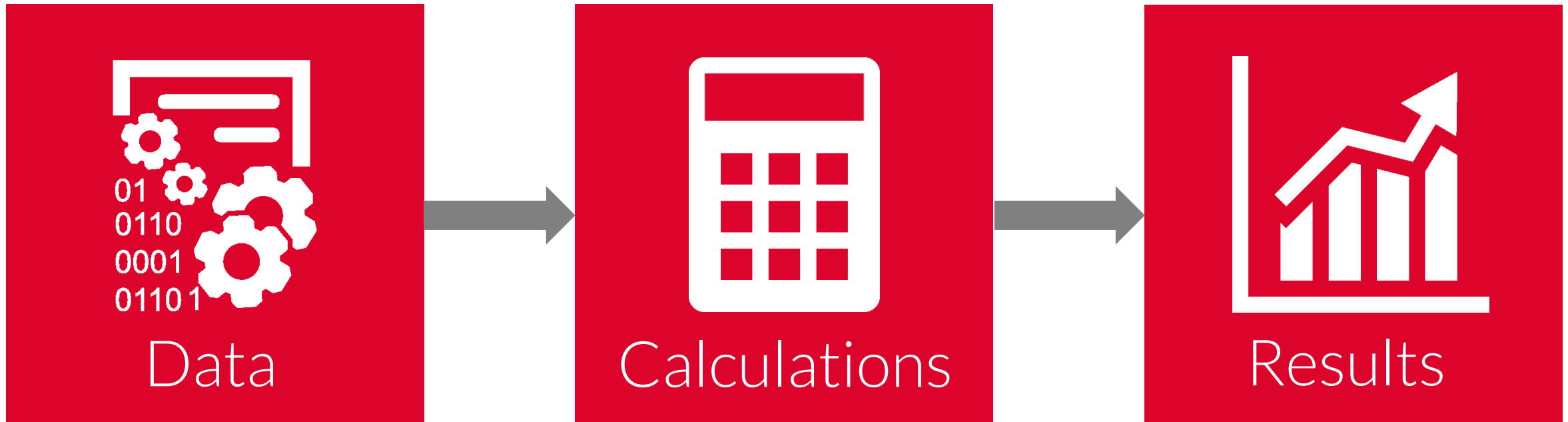
Coffee Break

Guest Speaker

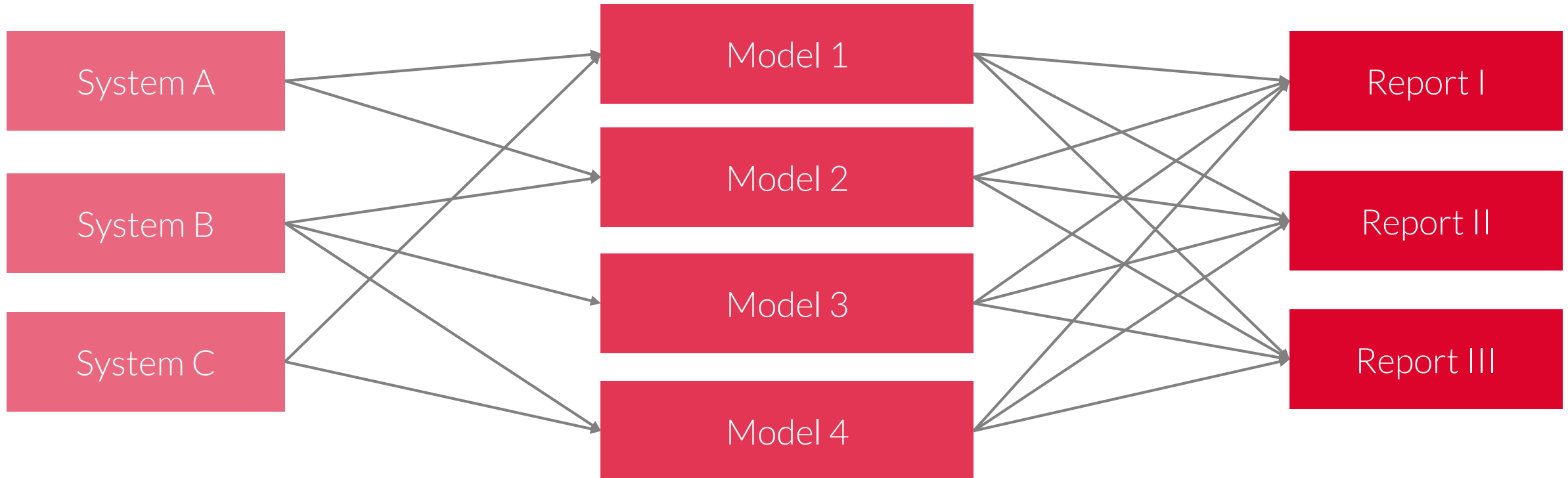
What Does an Actuary Want from Technology?

Gerry Gallagher

The Actuarial Data Factory



Spaghetti Reporting

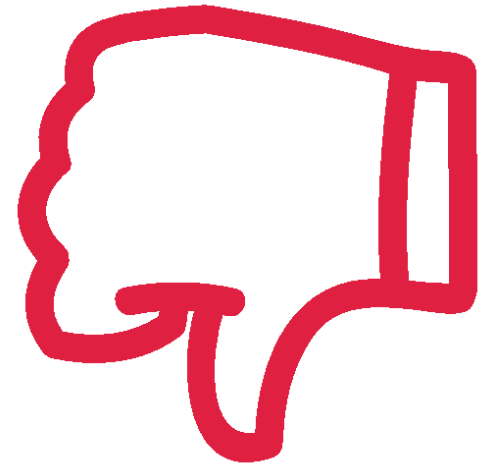


It all goes
wrong ...

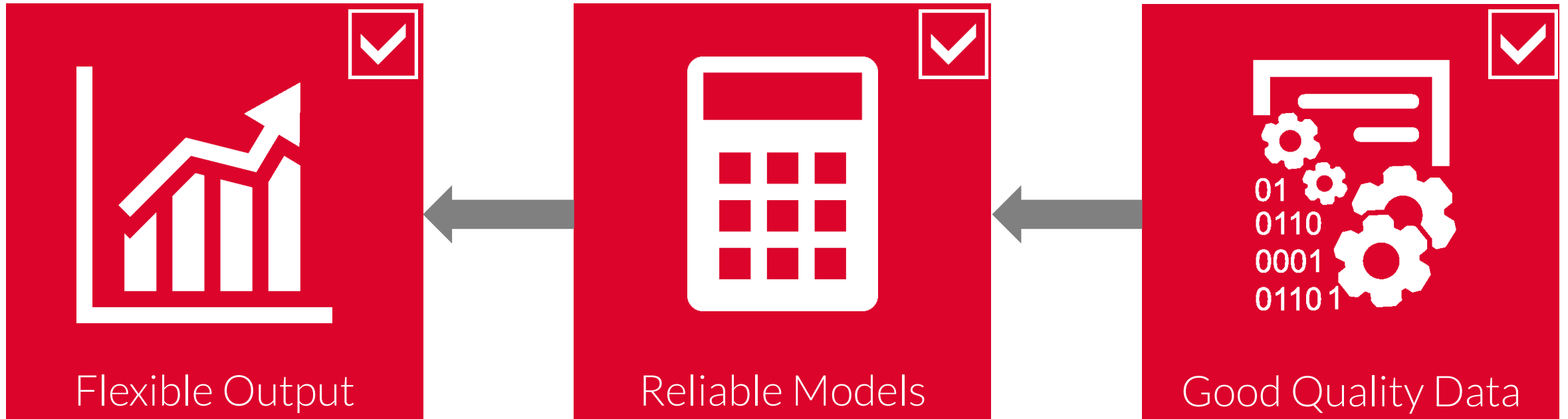


Complaints

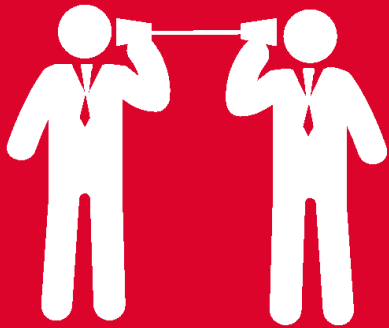
- It can't take that long to program
- The data must be there – we pay our customers
- There are too many input errors
- The model is wrong – so testing wasn't good enough
- I want a different analysis



Your Actuary Needs Help



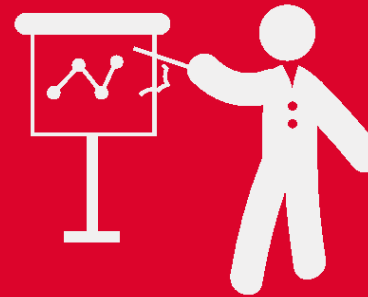
The Life Actuary of the Future



Better Communicator



To be an “Actuary”



Data Analyst



Understand What’s Possible

What can be done?



- Data warehouse
- Automate testing - consistency checks
- Control input process
- Store output for a variety of presentations and to provide estimated results

Any thoughts?

Group Discussion

A View from the Trenches – Priorities for 2014

Trigger Thoughts

- Restarting / continuation of Solvency II
- Solvency II to BAU
- New technology adoption
- Organisation design and optimisation
- Legacy
- Roles and responsibilities

Closing Remarks

Adam Tyrer

Drinks Reception

The Jerusalem Tavern, 55 Britton Street