



# Actuarial systems: What lies ahead?

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*We also acknowledge **Magnolia Aspiras** as an author of this paper.*

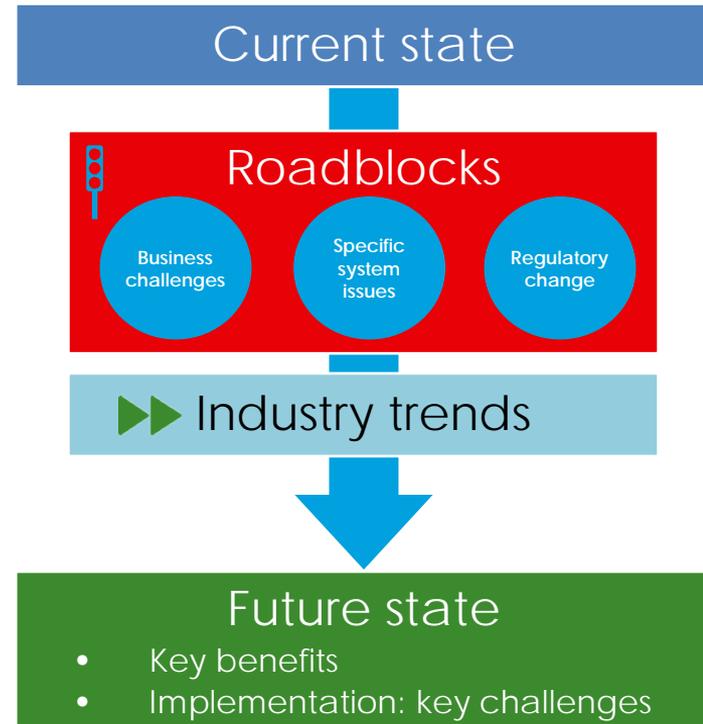
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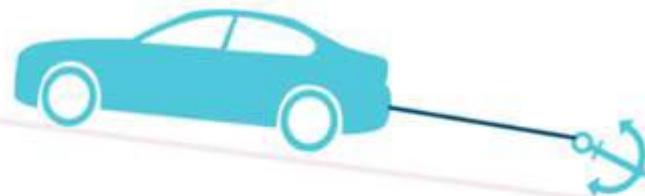




# Background

- FS companies in Australia often **struggle to deliver insight**, due to complexities of processes
- System processing capabilities have improved significantly:  
1971: 2,300 → 2011: 2.6b transistors  
[1m times]
- How about the progress of business insight?...
- Purpose of this presentation:
  - Key issues
  - Future system design/functionality
  - Transition considerations

What part of your business is slowing you down the most?



Source: *Shifting Gears*, 2016

# Business challenges

## Strategic/operational

- Actuaries need to provide more **insight**/communication to the business
- **Turnaround** time continues to be shortened
- Increased **operational risk**
- Ability of system to meet **current and future business needs** (eg scenario testing, regulatory change, etc)
- Business need for **single source of truth**
- Business need for a **repository**, easily accessible by all areas of the business

## Cost

- **FTE** – shift from process to insight as processes become more efficient. Or reduce FTE.
- High ongoing **systems cost**
- **Impact of inefficient systems** on the ability to service existing business and write new business, etc

HOW IS THE QUALITY OF SUPPORTING SYSTEMS IMPACTING THE ACTUARY'S ABILITY TO DELIVER TRUSTED INSIGHT?



# Regulatory change

## APRA Stress Testing

- Life insurer industry stress testing completed
  - GI testing next; Health to follow
  - Regular reporting of stress testing to APRA expected
- APRA expect improved stress testing as part of ICAAP
- Permanent updates to models/spreadsheets
  - More robust process for calculation, review and reporting – improving Board engagement
  - ...without making model too complex for regular use

## Others

- Future ICAAP/LAGIC requirement changes
- RBC modelling
- International compliance (Solvency II, etc)

## IFRS 4 Phase II

- Potentially new groupings
- Locked in discount rate for CSM
- Split of PVPM into RA and CSM – requirement to apply retrospectively
- New carrier for CSM? Number of policies in-force implied through deliberations.
- Simplified treatment for YRT products; no DAC

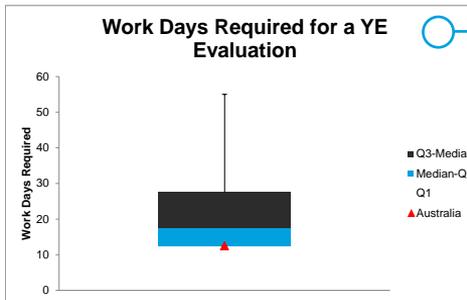
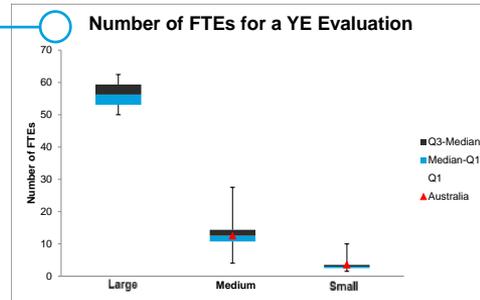
Final standard expected late 2016/early 2017.

- QIS will be needed after rules are finalised
- Updates to models/spreadsheets
- Changes to profit analysis tools

# Industry trends – efficiency

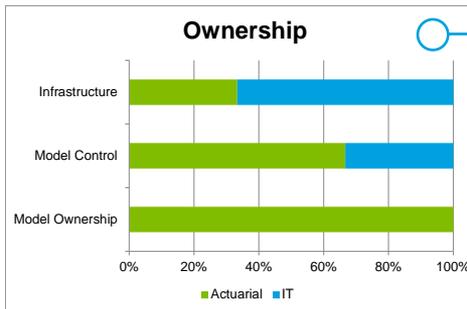
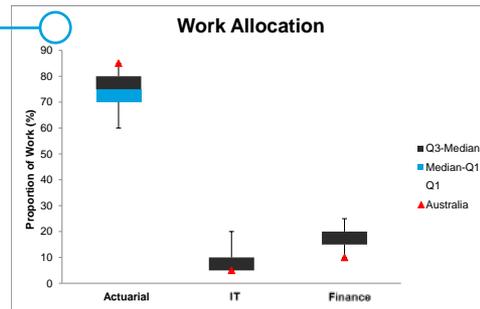
We conducted a global survey through Deloitte firms, comparing the use of actuarial system in different countries (Americas, Europe, Africa, and Asia Pacific region).

In terms of year end valuation, Australia uses **similar FTEs** as other countries – interesting in itself given Australia’s simpler products.



Australia at the lower end of valuation working days – not surprising given the simplicity of Australian products. Many Australian insurers only have a single reporting regime to follow.

The proportion of year end work done by **actuarial team is much higher** compared to its peers in other countries

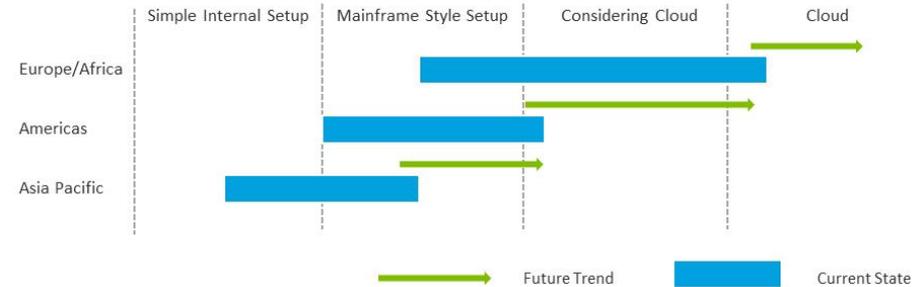


The models are still primarily **owned by actuarial team**, with infrastructure owned by IT. Some companies have now moved the model control to IT, away from actuarial team

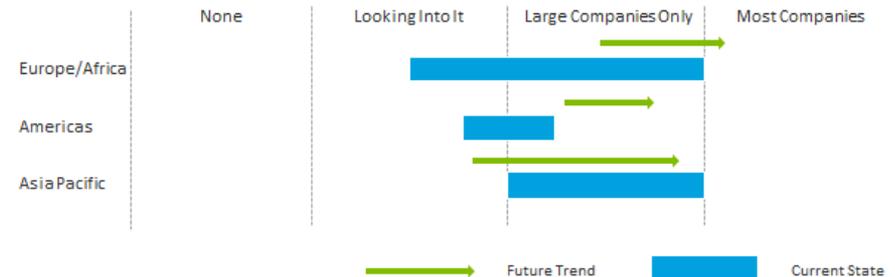
# Industry trends – infrastructure

- There is a clear trend towards using **Cloud** solution to organise computer resources (particularly in UK and Netherland)
- Most large companies (particularly MNCs) are using Prophet **Enterprise** (or equivalent) to meet their reporting timelines.
- Most companies do not use a single **data warehouse**, with the exception of large companies in Australia, UK and Spain. Other countries are considering moving to single data warehouse

Organisation of Computing Resources



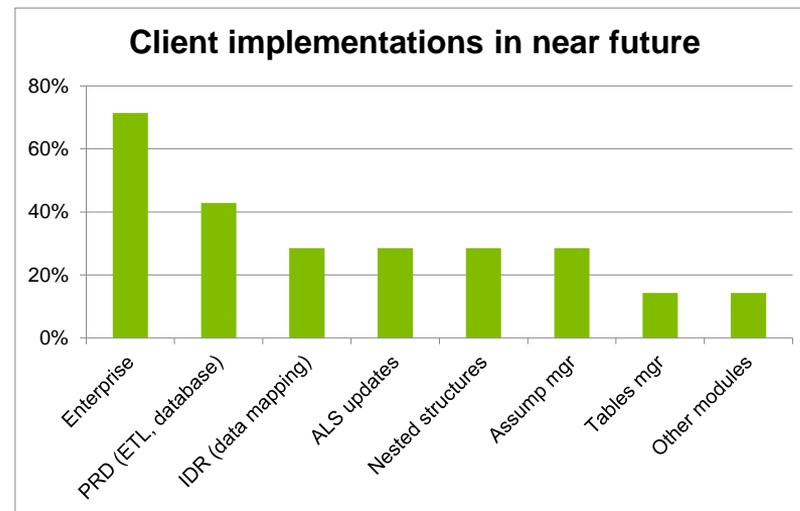
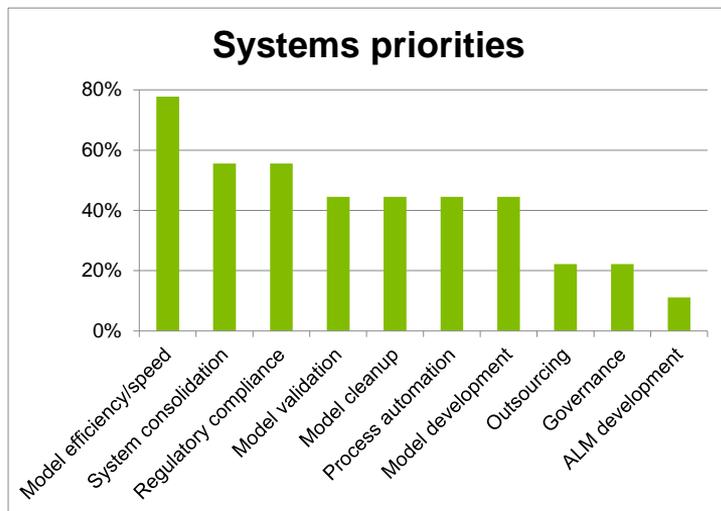
Companies using Prophet Enterprise (or equivalent)





# Industry trends – outlook

- Key client priorities are linked to implementations they are considering:



# The future of actuarial systems

## Functionality

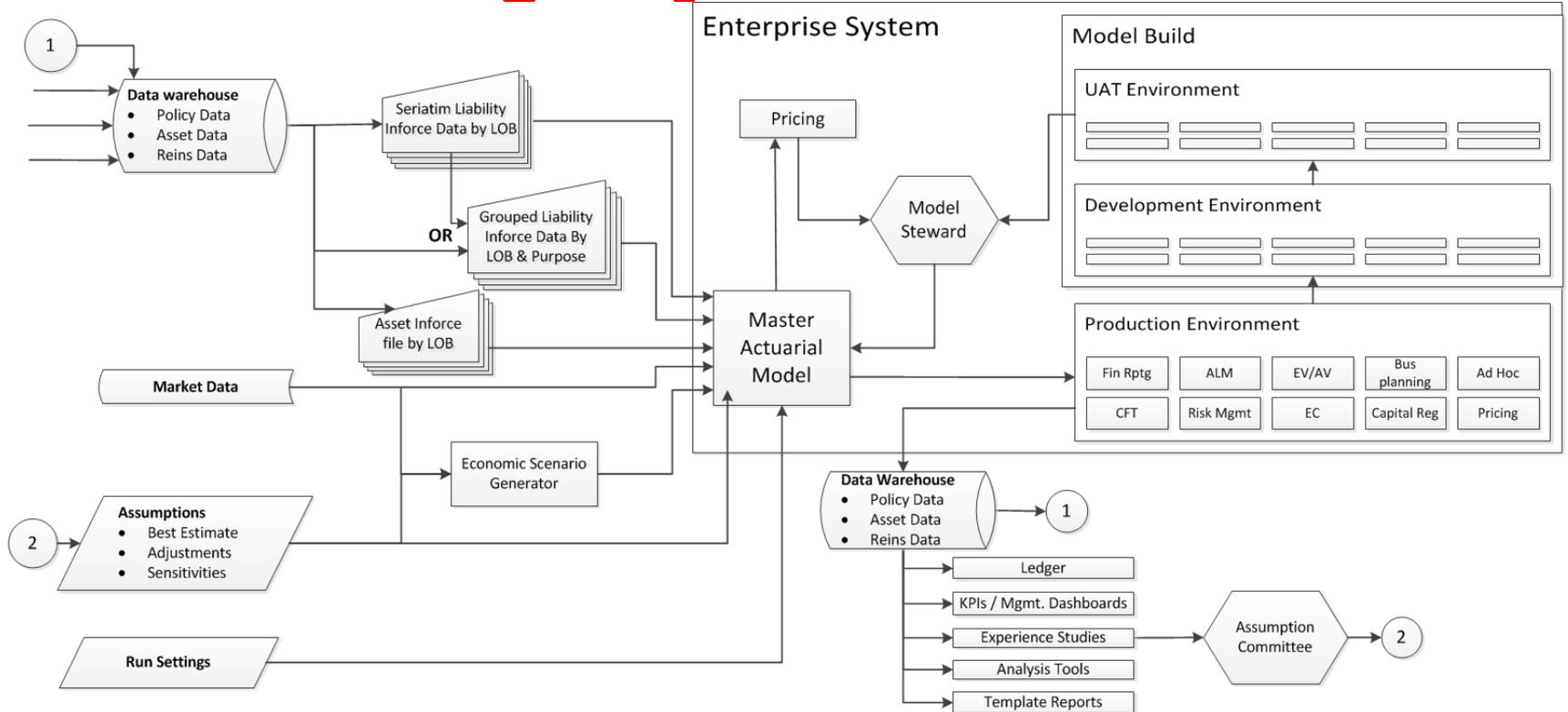
- **Single core system solution** for all actuarial calculation uses (reserving, pricing, forecasting)
- Inputs and results **accessible** directly by users **across the business**
- **Automated checking**
- **Integrated approval** mechanisms
- Clearly defined and implemented **controls**

## Operations

- **Automated processes**
- **Minimal** number of **manual adjustments**
- **Rationalised** set of **platforms and processes**
- System maintenance **managed by IT**
- System **development outsourced** from actuarial (to IT or external professionals)
- All components and processes **documented**



# Single system solution



# Key challenges and considerations

## Key challenges

- **Culture change** – shift from model ownership to a shared actuarial system
- Shift to focus more on upfront **system requirements, integrated design** and focused testing – models should be “future proof”
- Balancing the level of flexibility and complexity of a single system

## Benefits of outsourcing

- Lower cost in the longer term
- Shortening timeframe if outsource some of the resources offshore
- Access to industry and global experience

## Key considerations

- **Implementation cost** – consider outsourcing during intense implementation phase. Careful cost/benefit argument is required.
  - Business case, and funding source is important. IT teaming useful for a number of systems changes (data, infrastructure, etc)
- **Order of implementation** – perform gap analysis and detailed system implementation plan to realise the potential benefits in the short term vs long term
- Review the **actuarial operating model** – new roles and responsibilities may be required to facilitate centralised model development and change management



# Key benefits and opportunities

Enables companies to realise strategic benefits and reducing cost in the long run

## Strategic/operational

- Shift actuarial team focus from process to provide more **insight**/communication to the business
- **Flexibility** to respond and meet **current and future business needs** (eg scenario testing, regulatory change, etc)
- **Reduce turnaround** time
- Reduced **operational risk**
- Provide business with a **single source of truth**

## Cost

- **FTE** – shift from process to insight as processes become more efficient => talent focus, higher staff satisfaction/ better staff retention
- **Increased efficiency** – reduce ongoing system cost

Use technological advancement as best possible – becoming much cheaper



# Questions and Wrap up

- What are the main issues you currently see?
- Is your company heading in the direction of a single automated system? How realistic is a single system solution?
- What are the key challenges that you have come across in implementation of an updated system?
- What are the key learnings that you have come across in implementation of system changes?