# Agenda

<table>
<thead>
<tr>
<th>Agenda Items</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Ciara Regan</td>
</tr>
<tr>
<td>Overview of actuarial system architecture</td>
<td>Brendan Guckian</td>
</tr>
<tr>
<td>System architecture impacts due to IFRS17</td>
<td>Joanne Lonergan</td>
</tr>
<tr>
<td>IFRS17 architecture challenges and pitfalls</td>
<td>Brendan Guckian</td>
</tr>
<tr>
<td>System implementation programs</td>
<td>Simon McCann</td>
</tr>
<tr>
<td>Actuarial Modelling Centre of Excellence</td>
<td>Marc Fakkel</td>
</tr>
</tbody>
</table>
Valuation Systems Architecture Overview

Brendan Guckian
Current end-to-end architecture

Multiple runs
- Multiple model runs required to generate necessary information for reporting

Multiple models & end reporting systems
- May use different models for different basis
- May use multiple software

Manual processes
- Process can be manually intensive, particularly the data process

Tighter reporting deadlines
- Solvency II reporting deadlines coming back 2 weeks this year

More reporting requirements
- Requirement to report more information as a result of Solvency II

Multiple reporting basis
- A requirement to calculate a number of different reporting basis – Solvency II, Statutory reporting, Group reporting, etc.
- Different tools and processes may be used for each basis.
System Requirements of IFRS 17

Joanne Lonergan
IFRS 17 Challenges for models and systems

Overview

- IFRS 17 Calculation Engine
- Storage and Tracking of Data
- Granularity of Data
- New Disclosures
Additional IFRS17 modelling and system challenges

Sources of Profit under IFRS 17

- **Profit**
- **Release of CSM**
- **Change in Risk Adj.**
- **Experience Variance**
- **Investment Income**
- **Insurance Finance Income or Expenses**

Total IFRS 17 Insurance Liability

- CSM
- Risk Adjustment
- Time Value of Money
- Future Cashflows
Additional IFRS17 modelling and system challenges

Storage, tracking and granularity of data

Why is data such a huge issue for IFRS 17?

- More reporting due to explicit building blocks
- Calculation and reporting of CSM
- Granularity of accounting disclosure and postings
- Need for historical data on transition
Additional IFRS17 modelling and system challenges

New disclosures

**Ledgers**
- Update to allow for RA & CSM on Balance sheet and amortization on P&L

**Group Systems**
- Consolidation now needs to allow for CSM & RA

**Planning & Forecasting**
- Needs to project the CSM & RA
  - New KPIs

**Management Information**
- New Reports/KPIs
- Allowance for CSM
What then?

Can your system be easily adapted for these changes?

What about the changes needed for IFRS18 and Solvency III?
Reporting Systems

Brendan Guckian
What changes are expected due to IFRS 17?
Where will you feel the heat?
What changes are expected due to IFRS 17?
Where will you feel the heat?

Policy Data
- Data Deficiency
  - Data deficient data or old
  - Inconsistency of monthly data

Projection Models
- Lack of coding standards
- Underutilisation of standard code
- Challenges tracking/updating assumption tables

Data Warehouse
- Indexing (Load Speed vs query performance)
- Poor
- No
- The importance of tagging
- Important
- Structure of Data Marts

Management Information
- User Friendly – IT should not be required for ad hoc analysis
- Choose the right tool for your needs
- How are reports distributed?

Accounting systems
- What new information is needed?
- Can the feed be automated?
Key System Design Points
Things to consider

**When Building a System**
- Be clear on your requirements
- Ensure you have the correct level of granularity
- Ensure you have the correct data tags
- Build a framework as well as a system

**Impacts of Poor Design**
- Unnecessary volume of:
  - Input Tables
  - Model Point Files
  - Model Instances
  - Code Duplication
  - Master Products
  - Lack of consistency across reporting bases
- Increased volumes of outputs
- Longer reporting cycles
- Higher maintenance costs
- More maintenance
- Complexity
- Really talking about poor requirements and design

**When Maintaining a System**
- Looks at how changes are implemented not just the financial impact
- Too many sticky plasters results in a mummy
The Ideal Solution
What should you aim for?

Key Principles

- Clearly defined framework
- Standardised data formats
- Easy to use, ideally fully automated
- Harnesses synergies e.g. uses Solvency II functionality/models
- Flexible enough to allow for future changes
- Full data lineage and audit trail
- Meets your reporting requirements
Benefits of Good Practice
What can be achieved?

- **Project A**
  - Libraries: 33 vs. 2
  - Master Products: 458 vs. 40
  - Workspaces: 20 vs. 1

- **Project B**
  - Model run-time: -50%
  - Volume of code: -71%
  - Number of basis tables: -62%

© 2018 Deloitte Ireland LLP. All rights reserved.
What changes are expected due to IFRS 17?

Summary

<table>
<thead>
<tr>
<th>Common Issues &amp; IFRS17 Tips</th>
<th>Key Design Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Model Inputs</td>
<td>1) Requirements</td>
</tr>
<tr>
<td>✓ Projection Models</td>
<td>2) Granularity</td>
</tr>
<tr>
<td>✓ Data Warehouse</td>
<td>3) Tagging</td>
</tr>
<tr>
<td>✓ Business Intelligence tools</td>
<td>4) Framework</td>
</tr>
</tbody>
</table>
Actuarial Systems Implementations

- **Business**
  - Clear business case and support
  - Program sponsor to ensure budget and management buy-in

- **Actuarial**
  - Expert knowledge will be required to ensure that the system is capable of meeting the business requirements
  - Knowledge required to define logic, build models and reconcile

- **Finance**
  - Centrally involved due to implications on Financial Statement returns
  - Help to ensure program budget is defined and adhered to

- **Data and Technology**
  - Data sourcing and interface
  - Data storage / foundation
  - Knowledge of Actuarial Modelling software

- **Target Operating Model**
  - Integrated Finance, Actuarial, IT and Business delivery model
  - Future of Work
  - Integrated workflow management

---

© 2018 Deloitte Ireland LLP. All rights reserved.
## Critical Success Factors

### Practical execution

<table>
<thead>
<tr>
<th>Execution Levers</th>
<th>Critical Success Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope and Approach</td>
<td>Explore value add scope</td>
</tr>
<tr>
<td>Plan and Monitoring</td>
<td>Produce integrated plan incl. CPA and dependencies</td>
</tr>
<tr>
<td>Governance and Resourcing</td>
<td>Empower single owner (sponsor and director)</td>
</tr>
<tr>
<td>Design, Build, Test and Change Management</td>
<td>Prioritize upfront design and data discovery</td>
</tr>
<tr>
<td>Operational Readiness</td>
<td>Document complete and granular OR plan</td>
</tr>
</tbody>
</table>

### Outcomes

- **On time delivery**
- **Sustainable solution**
- **Business acceptance**

© 2018 Deloitte Ireland LLP. All rights reserved.
Key Takeaways
Learnings from other projects, that will help the set up, planning and approach and will help to avoid common pitfalls.

Stay Focused
- Budget, resourcing or scope will need to be sacrificed if you allow deadlines to slip

One Team
- Integrated approach: IT, Systems & Data, Finance, Actuarial, Change

Data Creates Challenges
- Differing levels of granularity
- Data housed in various systems
- Multiple languages, currencies, contracting parties

Every project is unique
- Each project will present unique challenges
- Do what’s best for your business

Policies & Processes
- The impacts on these are not to be underestimated
- New processes & policies will have to be designed and rolled out for Day 2
- Implementation of internal controls required

Systems architecture must be considered
- Enhancements likely required to comprehend new storage, calculation and reporting requirements
- Excel increases operational risk
Introducing the Actuarial Modelling Centre
AMC Ireland

The Deloitte Actuarial Modelling Centre (AMC), part of the Actuarial, Reward and Analytics (ARA) practice, is our centre of excellence for actuarial modelling. The AMC formalises the Deloitte approach to actuarial modelling where we are recognised as a market leader.

The AMC uses our standard management and project frameworks to deliver modelling engagements. Our expertise in this area is underpinned by our market leading approaches, frameworks, tools and training to support the delivery of actuarial modelling to our clients.

Global Alliance with FIS
Deloitte have formed a global strategic alliance with FIS, the developers of Prophet, to help insurers through the operational challenges of implementing IFRS 17.

© 2018 Deloitte Ireland LLP. All rights reserved.
Thank You
Any Questions?
Appendix
Prophet IFRS 17 Library

- It is a new Prophet library which performs group calculation
- It is model point driven where each model point represents a cohort of policies
- It is reading results from products in other Prophet libraries or external data source through tables
- The other Prophet libraries are also enhanced for the cashflow discounting and aggregation required for IFRS