Transforming actuarial processes

Life2017

QEII Conference Centre, London

21/22 June 2017
The robots are taking over
Commercial impact of finance transformation

**PROS**
- Better MI
- Lower Risk
- Shorter WDT
- Reduced Cost Base

**CONS**
- Disruption
- Delivery Risk
- Big Project Cost
Tips for success

Tip 1
Be clear on what you are trying to achieve

Tip 2
Getting the right people

Tip 3
Build vs buy: know your options

Tip 4
Fire up the technology

Tip 5
Take your people on the journey

Tip 6
Manage interactions with other corporate initiatives

Tip 7
Ensure you realise the benefits

Tip 8
Preserve the investment
Case study

Mike Byrne

21/22 June 2017
Introduction

**Beginning**
Shaping the vision and objectives

**Middle**
Process re-engineering and Unify implementation

**End**
Benefits delivered and reflection
Beginning – establishing the vision and objectives
The primary objective was working day timetable, intermingled with other desires.

Solvency II
working day timetable

- Better management information
- Improved efficiency
- Cost control
- Better modelling
- Higher quality output
- Right mix of skills/capabilities
- Clearer reporting lines
Beginning – establishing the vision and objectives

The project scope contained the end-to-end actuarial process, with a timeline of 18 months.

<table>
<thead>
<tr>
<th>Phase 1 – 6 months</th>
<th>Phase 2 – 6 months</th>
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<tbody>
<tr>
<td>Policy Data</td>
<td>Assns</td>
<td>Modelling</td>
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<td>Reporting</td>
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- **Policy Data**
  - 50% WDT Gain

- **Assns**
  - 15% of WDT gain

- **Modelling**
  - 35% of WDT gain

CAP: Policy Data, DI: Assns, Modelling, Reporting
Beginning – establishing the vision and objectives

The wide scope and mixed objectives resulted in a mix of acceleration and improvement tasks.

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<th>Phase 1 – 6 months</th>
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<tr>
<td>ACCELERATION</td>
<td>IMPROVEMENT</td>
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**Policy**
- 35% of WDT gain

**Data**
- 15% of WDT gain

**Assns**
- 50% WDT Gain

**Modelling**
- 35% of WDT gain

**Reporting**
- 15% of WDT gain
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Beginning – establishing the vision and objectives
Key acceleration initiatives were left until the end, placing them at the highest risk of being completed.

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50% WDT Gain ➔ 15% of WDT gain ➔ 35% of WDT gain
Beginning – establishing the vision and objectives

Key acceleration initiatives were left until the end, placing them at the highest risk of being completed.

**ACCELERATION**

**IMPROVEMENT**

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Beginning – establishing the vision and objectives
Create a clear distinction between acceleration and improvement

Initial **acceleration phase**:  
- Targeted acceleration
- Fire up the technology
- Unlock the benefits

Followed by an **improvement phase**:  
- Facilitates an agile approach
- Release BAU resource to support more development work
- Testing and development accelerated
- Begin to embed the new technology

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<th>Initial acceleration phase: Phase 1 – 6 months</th>
<th>Followed by an improvement phase: Phase 2 – 6 months</th>
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Middle – process re-engineering and technology implementation

Background, scope and brief

| Scope | (1) **End-to-end actuarial process**; from data and assumptions, through deterministic modelling, to reporting.  
(2) **Stochastic model execution** |
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<td>Objective</td>
<td><strong>Accelerate</strong> the process, reducing the working day timetable and user effort, and introduce holistic process control and governance. Don’t change the numbers!</td>
</tr>
<tr>
<td>Tool kit</td>
<td>Established users of DataValidator and RiskAgility FM. <strong>Unify on a trial license.</strong></td>
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<td>Plan</td>
<td>Three phases: Design, Implement &amp; Test and Review.</td>
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Middle – process re-engineering and technology implementation

A robust and challenging design phase before any implementation

We spent 4 of the 10 weeks on a collaborative design phase

Phase 1: Design
- Requirements
- Design principles

Phase 2: Implement
- Understand processing steps
- Specify interactions / hand-offs
- Workflow and scheduling

Phase 3: Review and Analyse
- Design document
- Targeted development tasks
- Testing strategy and success criteria

We spent 4 of the 10 weeks on a collaborative design phase
Middle – process re-engineering and technology implementation

(1) End-to-end actuarial process; We deployed Unify using a build-block approach.

Phase 1: Design
- Admin Systems: Policy data transformation, validation and cleansing.

Phase 2: Implement
- External sources / others teams: Assumptions derivation, validation and management.
- Deterministic Cashflow model
- Results extraction, consolidation and aggregation
- Reporting and Analysis

Phase 3: Review and Analyse

Workflow

= user intervention
(2) Stochastic model execution; we automated the full suite of stochastic runs for the analysis of change.
Middle – process re-engineering and technology implementation

(2) Stochastic model execution; we automated the full suite of stochastic runs for the analysis of change.

Roll-forward runs – before

Phase 1: Design
- Policy data
- Run roll-forward routine
- Stochastic model 1
- Process Output
- Stochastic model 2

Roll-forward runs – after

Phase 2: Implement
- Policy data
- Run roll-forward routine
- Stochastic model 1
- Output routine
- Stochastic model 2

Unify

= user intervention
Middle – process re-engineering and technology implementation

(2) Stochastic model execution; we automated the full suite of stochastic runs for the analysis of change.

Write-back runs – before

Phase 1: Design
- Stochastic model 1
- Extract output
- Derive new assumptions
- Update assumptions
- Set off next AoC run

Write-back runs – after

Phase 2: Implement
- Stochastic model 1
- Extract output
- Derive new assumptions
- Update assumptions
- Set off next AoC run

Unify

= user intervention
Middle – process re-engineering and technology implementation

(2) Stochastic model execution; we automated the full suite of stochastic runs for the analysis of change.

Phase 1: Design

Stochastic model 1

Macro to test output vs closed form

Test vs tolerance

Process

Output

Stochastic model 2

Phase 2: Implement

Convergence run – before

Stochastic model 1

DataValidator – convergence test

Unify decision

Output routine

New Scalars

Stochastic model 2

Convergence run – after

Phase 3: Review and Analyse

Unify

= user intervention
End – review and reflect
We reduced the elapsed time of the process significantly, without changing the results.

**Headlines:**
- Event driven, not user driven.
- Significant improvements in processing time:
  - 65% for end-to-end
  - 50% for stochastic modelling
- Use a 24 hour working day, optimising the working day timetable.
End – review and reflect

User input was focussed on value-add areas, which substantially improved efficiency.

Headlines:
- Reduction in user effort by:
  - 85% for end-to-end
  - 98% for stochastic modelling
- All user time is now value-add.

Phase 1: Design
Phase 2: Implement
Phase 3: Review and Analyse
End – review and reflect
We added comprehensive governance, audit and control to the process through Unify.

Headlines:
- End to end process controlled, governed and monitored by Unify.
- Enforced review stages to ensure working best practice is followed.
- The full audit trail and responses are automatically stored.
- All output is automatically stored, versioned and reproducible.
- Single version of the truth.
So what does this mean for you?

You should look to deploy technology and robotics earlier in your transformation programmes.

For relatively little spend, you can deliver significant benefits in a matter of months:

- Reduce your project delivery risk
- Shorten the working day timetable right now
- Facilitate reduction of cost base
- Embed governance and control now
- Take your people on the journey
Questions

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