Institute
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IFoA Life Conference

C2: From Bottlenecks to five minutes: How to secure management buy-in for your actuarial transformation

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Agenda

- Background information
- Management buy-in
- Transformation Approach
- Implementation
- Lessons Learned

Background Info

Background Information

The challenges

Model Maintenance

Reliance on centralisation of proprietary systems for actuarial liability modelling

- Long development cycles for new products
- Loss of visibility on results analysis
- Limits on actuarial modelling expertise
- Slow results turn-around/execution times for some heavier models

Asset and other metrics on different systems, including manual work.

- Control challenges and re-runs
- Speed of execution

Manual Processes

Data analysis, results consolidation and reported metrics performed in spreadsheets.

- Long laborious process to update links
- Increased risk of errors and re-runs
- Proliferation of spreadsheets
- Difficulty in maintaining controls
- Large data sets not easy to handle
- Some dashboarding capabilities exit, however, reliant to good quality data.

Background Information

The challenges

Limitations

Normal budgetary, skills and time constraints.

- Management cautious on spending
- Proposals must be backed with strong business benefits
- Skill gaps (e.g. for coding)
- Licensing fee flexibility
- Risk of savings not materialising
- External party risks
- Process is live so cannot be disrupted
- Audit change control

Other considerations

As much as addressing current challenges, need a longer-term sustainable view.

- IFRS17
- New products
- Resources turnover
- Ongoing costs
- New technologies
- Ongoing skills gaps
- Key person risks

Management buy-in

Management Buy-in

The build up to the business case

Management does not automatically sign off on technology or changes - they sign off on **measurable outcomes**.

Business case had to be focused on:

- Identifying and quantifying potential savings
- Identifying mitigation steps
- Address risk concerns
- Have both a short-term and long-term view

The What:

- Map process effort (and savings)
- Identify duplications

The How:

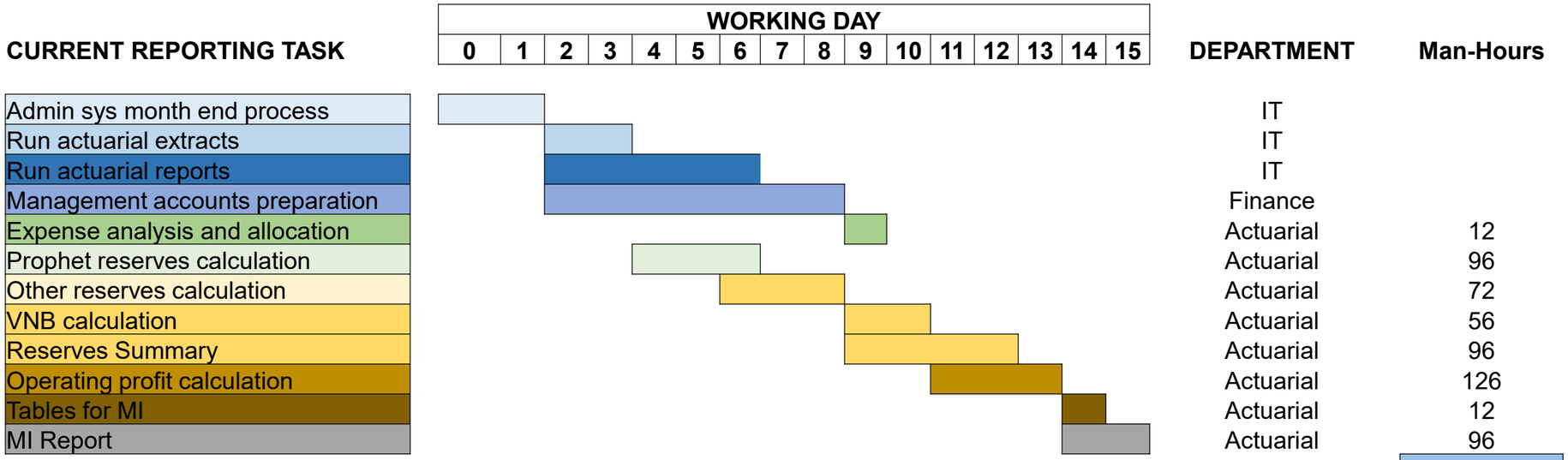
- Open Source?
- Proprietary?

The How much:

- Cost of licensing
- Cost of maintenance
- Skill gaps
- Risks introduced

Management buy-in

The metrics (before)



CURRENT REPORTING TASK	DEPARTMENT	Man-Hours
Admin sys month end process	IT	
Run actuarial extracts	IT	
Run actuarial reports	IT	
Management accounts preparation	Finance	
Expense analysis and allocation	Actuarial	12
Prophet reserves calculation	Actuarial	96
Other reserves calculation	Actuarial	72
VNB calculation	Actuarial	56
Reserves Summary	Actuarial	96
Operating profit calculation	Actuarial	126
Tables for MI	Actuarial	12
MI Report	Actuarial	96
		554

- Most of the process spent on linking
- High Risk of making errors and miscalculation resulting for a manual process
- Resource demanding process - Resources spent most of time in a year on results production and less on value adding activities
- Refreshing of the number when updated accounts received takes 1.5 days

Management buy-in

The metrics (estimated after initial POC)

NEW REPORTING TIMELINE	WORKING DAY															DEPARTMENT	Man-Hours
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Admin sys month end process																	IT	
Run actuarial extracts																	IT	
Run actuarial reports																	IT	
Management accounts preparation																	Finance	
Expense analysis and allocation																	Actuarial	12
Prophet reserves calculation																	Actuarial	96
Other reserves calculation																	Actuarial	72
VNB calculation																	Actuarial	28
Reserves Summary																	Actuarial	12
Operating profit calculation																	Actuarial	18
Tables for MI																	Actuarial	6
MI Report																	Actuarial	48
Data validation and Analytics																	Actuarial	
																		292

- Iris Automation of the processes within the yellow shaded tasks significantly reducing man-hours
- Focus more on Actuarial Analytics, Validation and Insight
- Removal need for linking spreadsheets using Iris Data Nodes while maintaining Data Lineage and Audit trails
- Release of resources from results production to value adding activities within the business
- Scalable Automation without reliance of Developers
- Low hanging fruits - Initial solution available to be implemented for dry run within month with fully documented process using Auto Doc functionality
- Refreshing with new accounts takes maximum 5min

Management buy-in

Business case backed by:

- 260+ person-hours potential savings
- Reduction of re-runs (due to automation)

Outstanding points:

- Cost of implementation
- BAU disruption
- Audit cost of change

Implementation

Implementation

Choice of proprietary or open source. Challenge around maintenance risk and skill gaps (either way).

Approach:

- Big project is broken into a series of small mini projects automating specific tasks at a time
- Quick turnaround from development to production
- Skills transfer to the BLIL team to allow them, with time, to develop and maintain models
- Sufficiently documentation and controls built into models
- Models and data processes built to allow further future development
- BLIL team early involvement with implementation
- Modular change of tasks
- Parallel runs to build evidence, reduce audit noise and train for handover

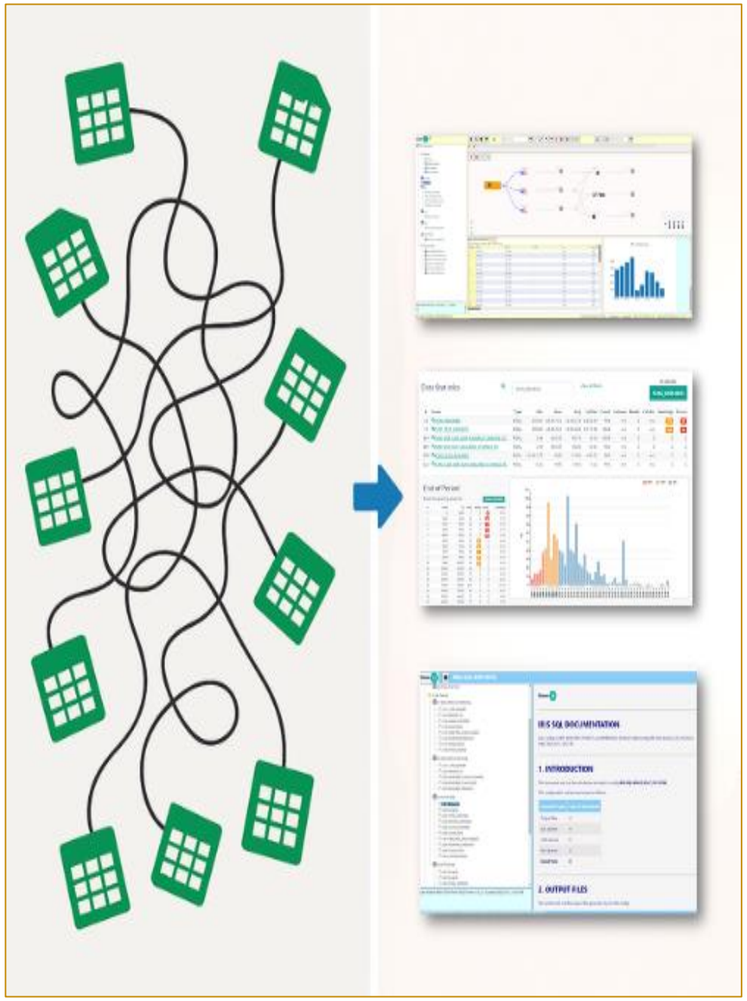
Implementation

Use-case: **Trial Balance (1.5 days per run).**

- Multiple sources (model runs, assets, reports, spreadsheets, rules tables)
- Mixture of data repository and data manipulation
- Duplicate work and hard-coding values

Type of challenge	Replacement
Manual spreadsheet refreshes	Iris-DN: Spreadsheet automation (recreates process without manual interactions)
Data Manipulation (match, product logic, filtering, sorting, lookups, pivots)	Iris-X/SQL: Used dedicated auditable processes instead
Data Sourcing	Table structures: Tables removed to central locations (ODBC)
Data duplication	Data detached from configurations

- Process now runs in minutes. Visual audit trails of data journeys.
- **Key takeaway**: break the tasks into type of workload, to choose the right tool



Implementation

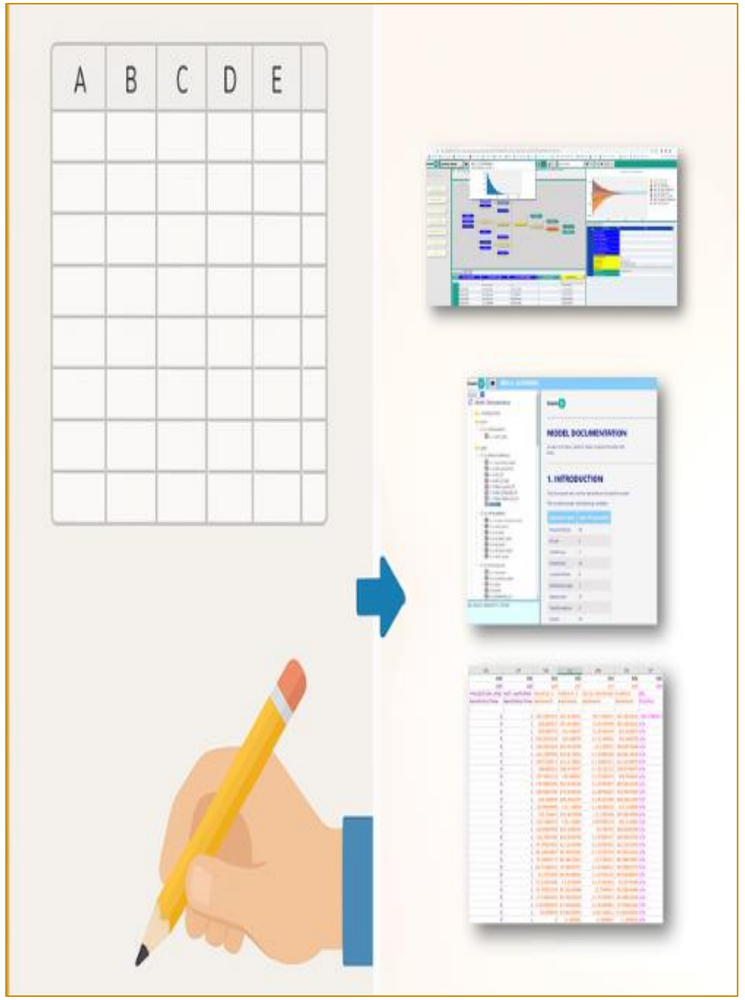
Use case: **CL/GL/ALM Annuity/UPR models (days to run):**

- Spreadsheet based, with data and assumptions blended with calculations
- Multiple copies of data, assumptions and calculations inside spreadsheets
- Duplicate work and hard-coding values for different purposes

Type of challenge	Replacement
Spreadsheet models	Iris-C
Assumptions management	Iris-C-mapper
Performance bottlenecks	AVX/Grid

- Result: from 24 hours down to seconds.
- Audit packs for results and assumptions
- Automation

Key takeaway: Separate concerns (data, calculations, assumptions). Higher performance on same hardware.



Implementation

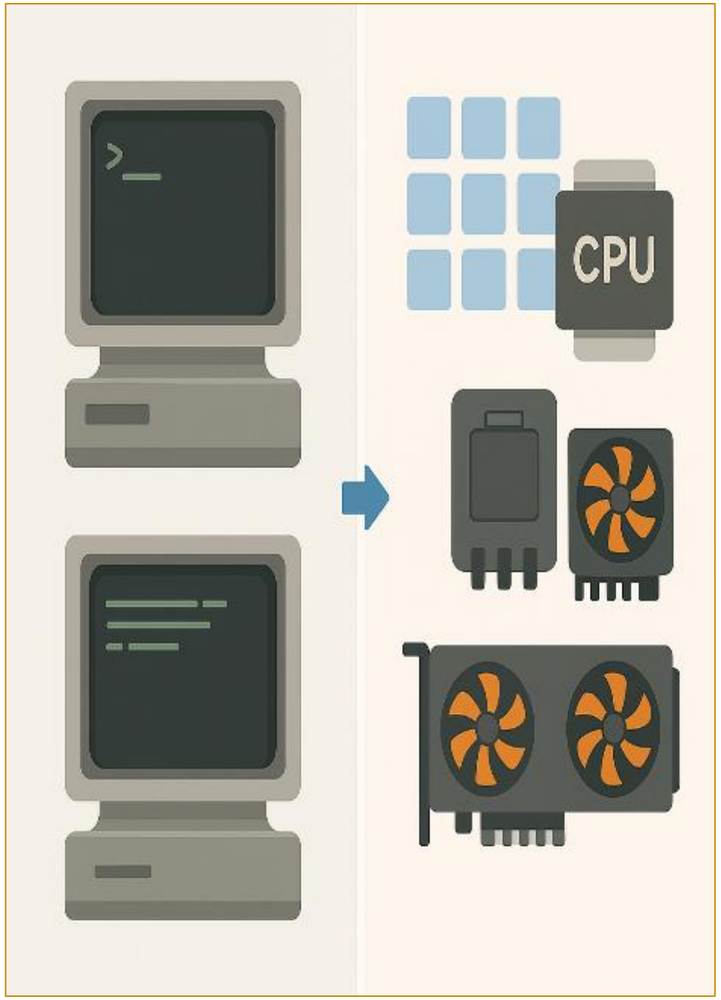
Use case: **Heavy model (est. tens of core hour runs)**:

- Funeral plan model
- Multiple beneficiaries, “rebasing” (not needed for IFRS17)
- Multiple benefit options

Type	Replacement
Performance bottlenecks	Iris-C/GPU - minutes
Code maintenance	Built in 2 days
Infrastructure	AVX/Grid or GPU

- Result: estimated savings of 10s of hours of run-time
- Reduced maintenance cost
- AI-powered Iris-AID applied in other models.

Key takeaway: Efficient use of existing hardware or new technologies can have measurable benefits on both implementation speed and run times.



Lessons Learned

Key takeaways:

- Management need tangible measure of success
- Transformation effort can be spread both across time and shared across tasks.
- Modularity enables a phased and continuous transformation as part of BAU
- Gradual replacement and parallel runs reduce audit noise and increase quality of tasks
- Early implementation and involvement of business helps with key person risk
- Low code can be beneficial for lowering technical barriers
- There are many choices (open source, proprietary) and the exact choice will depend on preferences and skill gaps.
- Having vendor involved helps with influencing new features
- More time can be spent on quality work

Q&A

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