



# Enhancing reporting timescales

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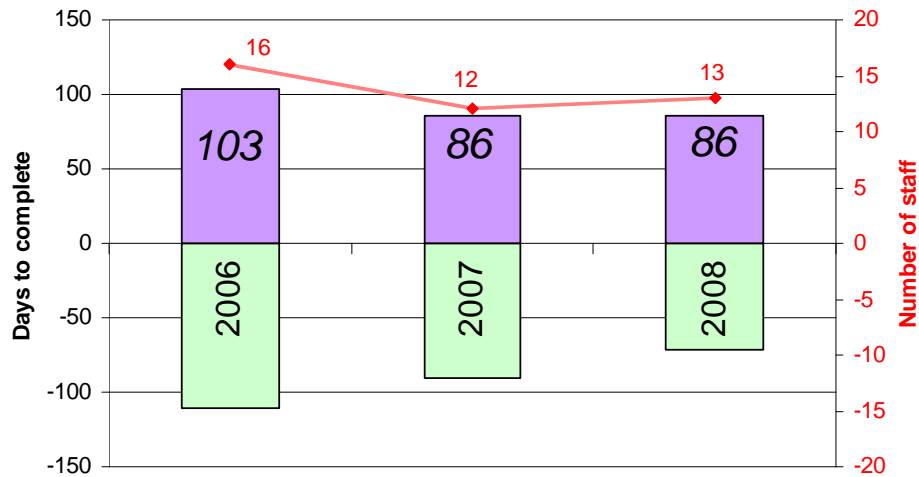
# Background



## Royal Liver Assurance

- Friendly Society
- Approx. £3bn assets under management
- Manufacturing and distribution operations in Ireland and UK
- Industrial and ordinary branch business
- With-profits and non-profit products

## Historical year-end timescales



## Reasons for historical timescales

Reporting date	Contributing factors
31 Dec 2006	<ul style="list-style-type: none"> <li>Problems with late delivery, errors or incomplete data</li> <li>Model run times</li> </ul>
31 Dec 2007	<ul style="list-style-type: none"> <li>Loss of key staff &amp; arrival of new staff (AFH)</li> <li>Model run times</li> <li>Late changes to investment return calculation approach</li> </ul>
31 Dec 2008	<ul style="list-style-type: none"> <li>Stock market crash &amp; economic volatility</li> <li>Model run times</li> <li>Late adjustments/changes</li> </ul>



## Why change?

- ☐ Make best use of available resource

- De-skill production process
- Moves actuaries from production to analysis
- Reduces cost

- ☐ Reduce operational risks

- Errors from manual processes

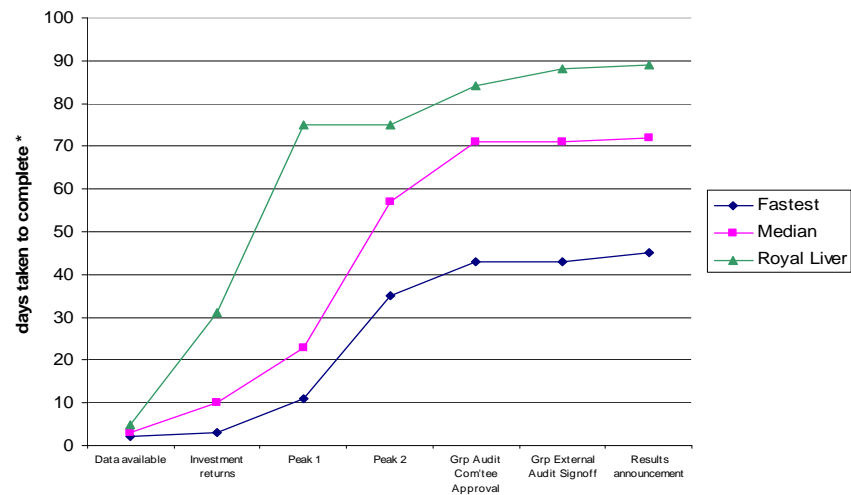
- ☐ Motivate and challenge the team ...

- Become best practice in the industry
- Develop “end-to-end automation”
- Develop staff



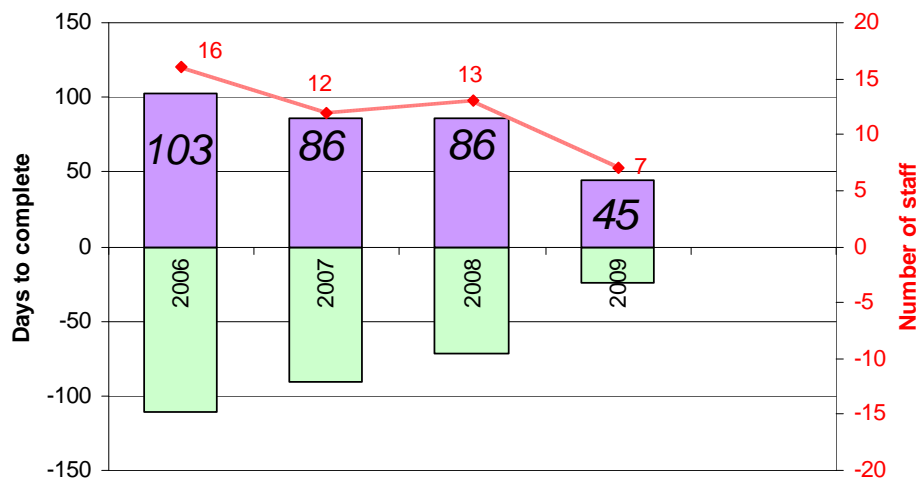
Target

## End-2008 close compared with industry



\* Based on 2008 year end PwC survey

## Target for end-2009





# How?



What do you need to do this?

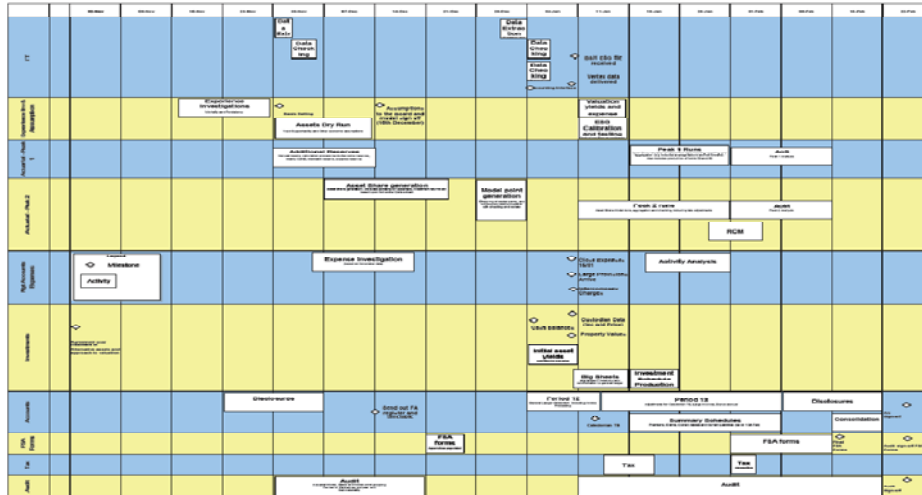
- Compelling business case
- End game vision
- Buy-in and behavioural changes
- Auditor's support
- Multi-disciplinary project team

- Less time to produce = less cost
- Less resource = less cost
- De-skilled process = less cost
- Motivated staff = less cost
- More free time = more value add
- S----- 2

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[illegible]

## Workshop output : “Dream”



## Workshop output : challenge

Category	Ref	Observation	Opportunity
Data Extraction	D1	3 extracts are run, September (closed book), November (Asset Shares) and December (Open book). The closed book valuation was re-run using December data due to changes in basis.	Ultimately move to a single December extraction. Roll forward non-material product lines. In the short term move to a November extract for Asset Shares and December extract for Peak 1 valuations
Data Extraction	D2	OB table views, there are over 100 table views. This takes time to create.	1 table and 1 view for VIP ilech is being developed by John Bowers

### ■ Key questions:

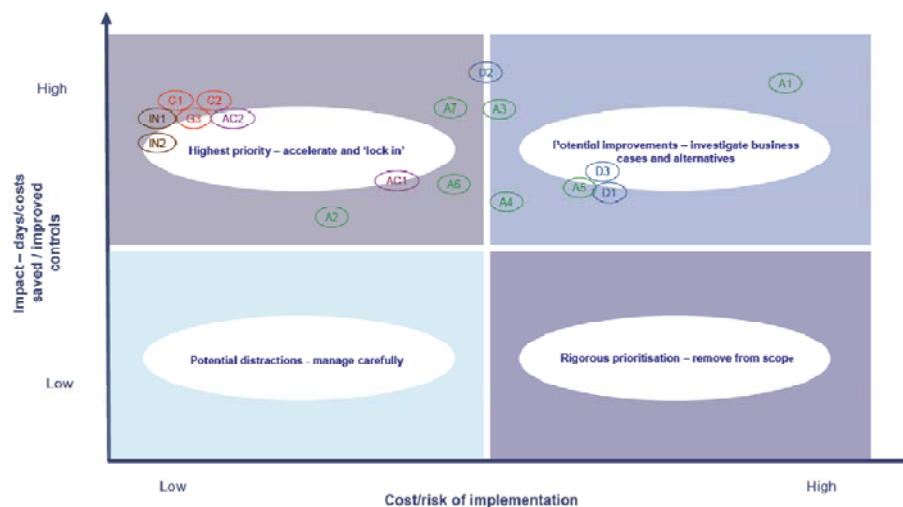
- ☐ What do you do?
- ☐ Why? Why? Why? Why? Why?
- ☐ What would you like it to be?
- ☐ What do you need to have it that way?



## Workshop output : issue prioritisation

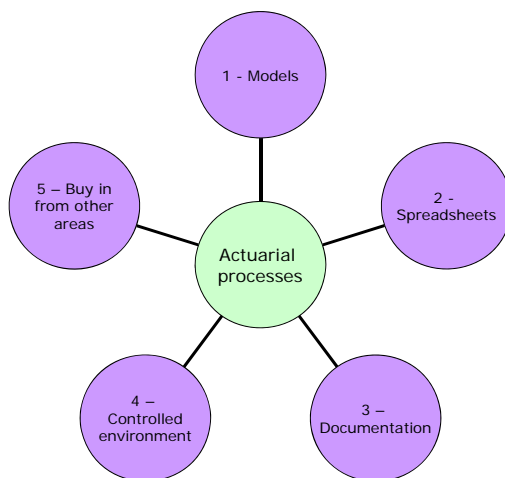
Ref	G1	Priority	High	Reduction in working days	
Owner	A Dauby	Phasing	Quick win (less than 1 month)	Cost / difficulty	£0K-£25K
Description				Other benefits	
<ul style="list-style-type: none"> <li>Materiality thresholds need to be set out clearly before the year end so that all teams know the Materiality they need to work to.</li> <li>Define a SUD policy which describes the process of recording unadjusted errors or omissions that although fall below the Materiality level, exceed an acceptable tolerance.</li> <li>Track unadjusted errors that do not exceed either Materiality or SUD levels but cumulatively could result in an overall material misstatement.</li> </ul>				<ul style="list-style-type: none"> <li>No reworking on small amounts.</li> <li>Reduced risk of errors caused by rework.</li> <li>More disciplined approach to first piece of work.</li> <li>Lower resource requirement</li> <li>Free up time to do other work.</li> <li>Concern around audit committee seeing more SUD items.</li> </ul>	
Key actions required to progress				Who is impacted	
<ul style="list-style-type: none"> <li>Buy in and input from George McGregor.</li> <li>Agreement of approach from external auditors.</li> <li>Single owner to coordinate.</li> <li>Single owner to analyse all SUD items and assess impact to determine whether adjustments need to be made (Needs to be somebody senior with an understanding of all aspects of the business, i.e. actuarial, accounting and investments).</li> </ul>				<ul style="list-style-type: none"> <li>Accounts</li> <li>Investments</li> <li>Actuarial</li> <li>Tax</li> </ul>	

## Workshop output : issue prioritisation

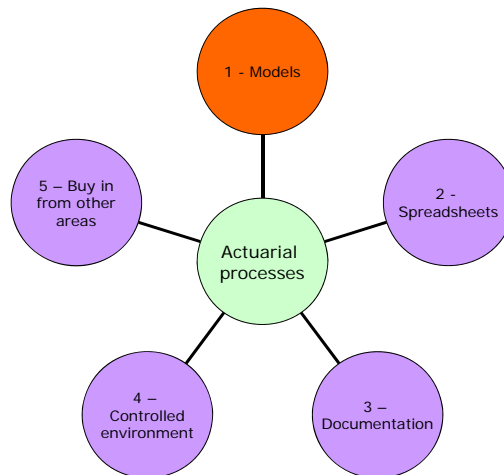


# Actuarial process improvements

## Areas to address



## Areas to address



## Key buy-in for model improvements

- Systems development team
  - ☐ Vision “end to end automation”
  - ☐ Ownership of solution – guide don’t drive
- Model reconciliation approach agreed with auditors
  - ☐ Evidence new model correct not old model wrong
  - ☐ Independent spreadsheet development for testing

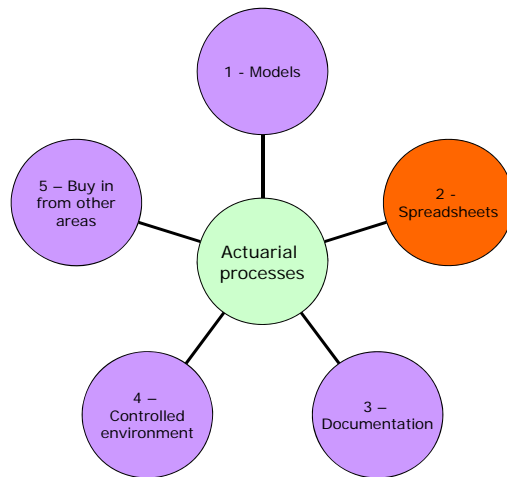
## Model improvements in 2009

Before	After
2 software platforms	1 software platform
14 actuarial models	1 actuarial model
2 ESGs	1 ESGs
2 teams (UK & ROI)	1 team
200+ spreadsheets	15 spreadsheets
Sporadic documentation	Documentation linked through from product libraries to model specifications
Extensive use of desktops	Central hub blade server with controlled user access

## Model improvements in 2009

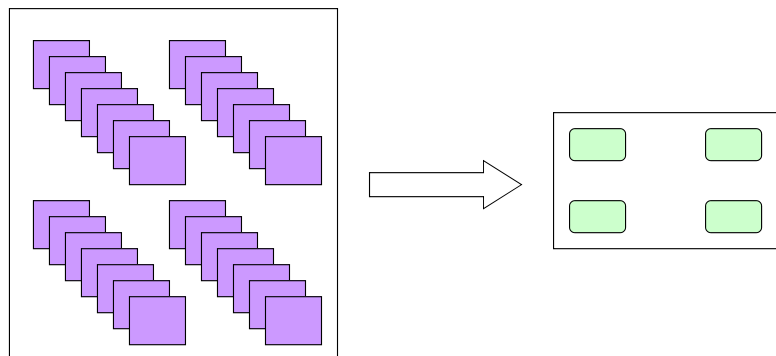
- Develop model from end-vision
- Simplified coding
  - Maximise use of standard code
  - Re-use product modules e.g. WL = EA
- Simplified prudent margining approach
- Automated process for assumption upload
- Semi-automated analysis of change
- Automated population of results forms

## Areas to address

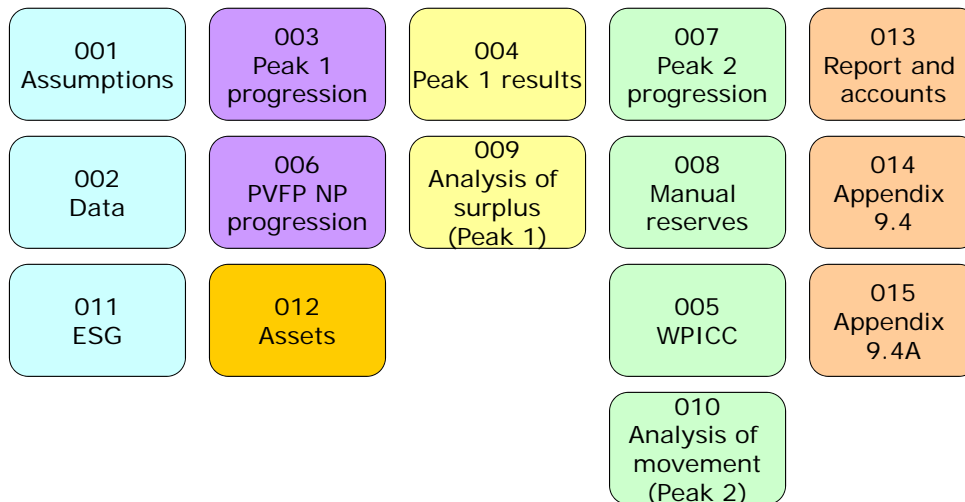


## Key spreadsheet improvements in 2009

- 200+ old spreadsheets replaced with 15 new ones representing key workstreams

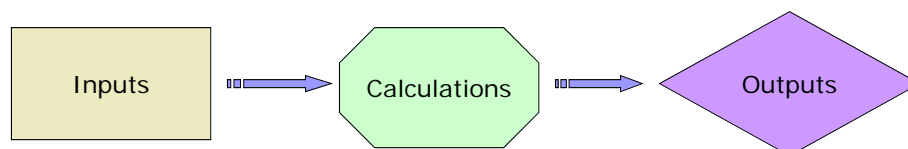


## 15 new spreadsheets



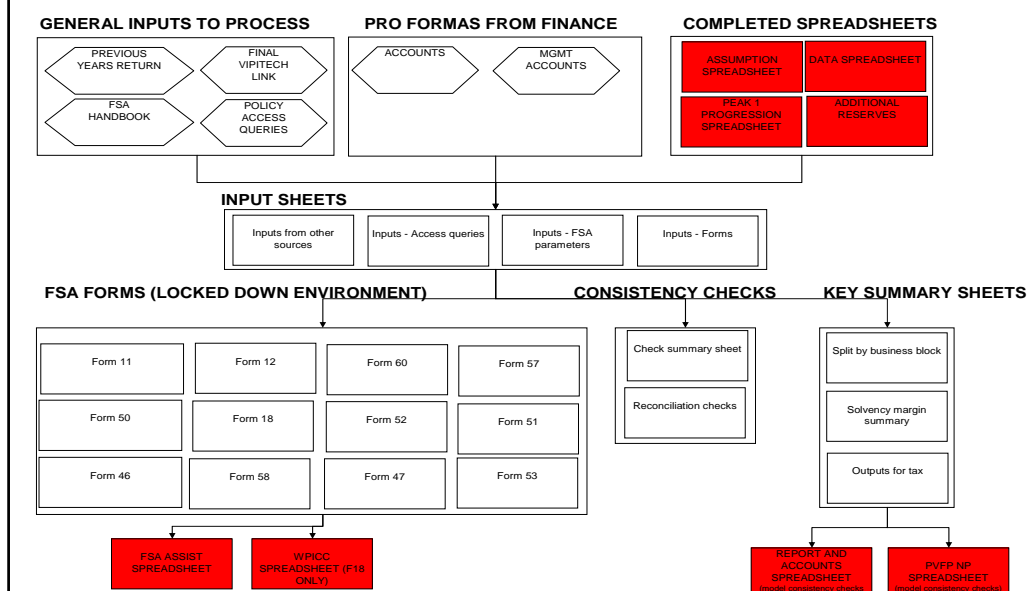
## Other key spreadsheet improvements

- Inefficiency in processes and methods addressed
- Layouts made simple and transparent



- Automated checks added
- Better governance
- Enhanced team understanding and transparency

## Spreadsheet layout – Example from Peak 1 spreadsheet

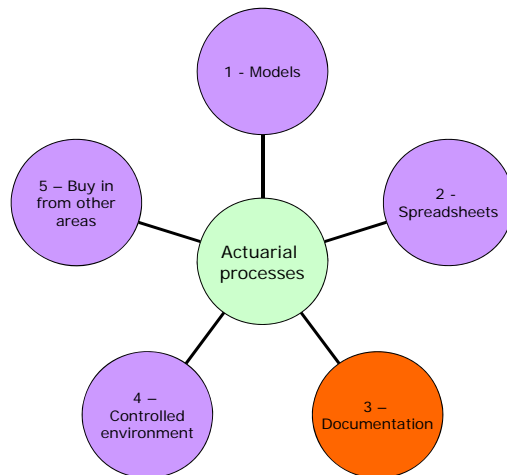


## Automated checks – sample from Peak 1 spreadsheet

- Risk based approach, supported by external auditors

Risk	Mitigation	Check		
		Form 51	Split For Base Results	Form 52 & 53
UK IB number of contracts does not reconcile between worksheets and VIP output	Check UK IB - Numbers	OK	OK	
UK IB current guaranteed benefits does not reconcile between worksheets and VIP output	Check UK IB - Current Guaranteed Benefits	OK	OK	
UK IB APV does not reconcile between worksheets and VIP output	Check UK IB - APV	OK	OK	
UK IB reserve does not reconcile between worksheets and VIP output	Check UK IB - Reserve	OK		
UK IB - Basic Reserve does not reconcile between Split for Base Results worksheet and VIP output	Check UK IB - Basic Reserve		OK	
UK IB -SaR does not reconcile between Split for Base Results worksheet and VIP output	Check UK IB -SaR		OK	
UK IB - Reinsurance does not reconcile between Split for Base Results worksheet and VIP output	Check UK IB - Reinsurance		OK	
UK IB - Cost of Bonus does not reconcile between Split for Base Results worksheet and VIP output	Check UK IB - Cost of Bonus		OK	
UK IB - Total Reserve does not reconcile between Split for Base Results worksheet and VIP output	Check UK IB - Total Reserve		OK	

## Areas to address

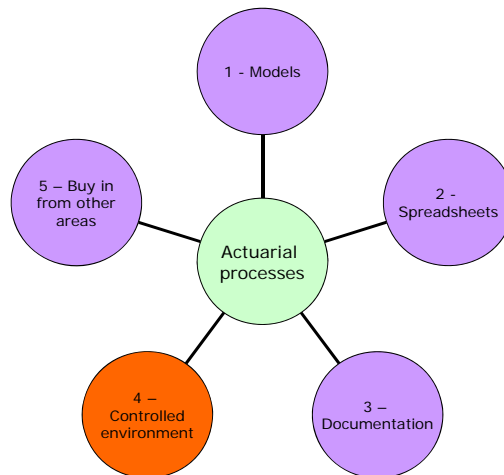


## Documentation structure

Section of document	Level 1 (Reviewer)	Level 2 (Checker)	Level 3 (Doer)
Business overview	1	2	3
Process flowcharts	1	2	3
Process and checkpoints		2	
Validation and error reporting	1	2	
Inputs			3
Outputs	1	2	3
Issue log		2	
Appendices		2	



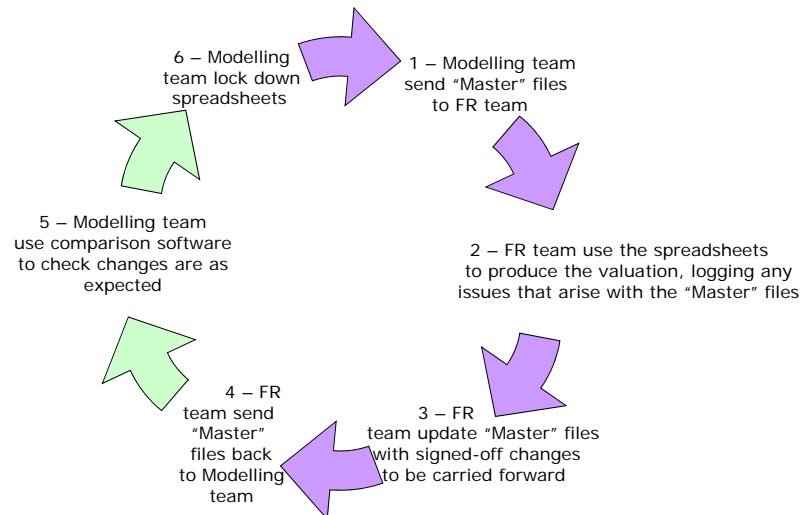
## Areas to address



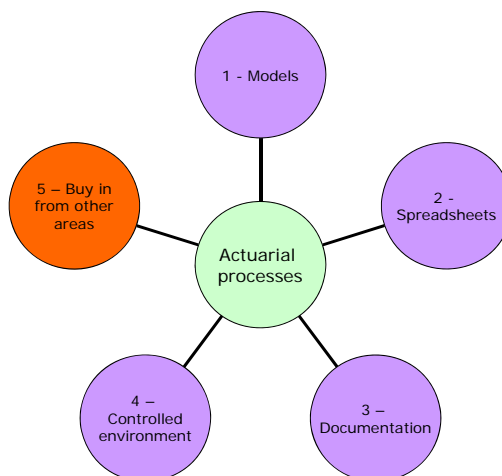
## Changes to control environment

- Segregated model ownership
- Locked down “Master” directory structure
- Tools to compare different versions of spreadsheets
- Embedded time flags in spreadsheets to signal reviews
- Model/spreadsheet version control (vX.Y.Z) for release of major, minor and bug fix changes
- Documentation linked from product libraries to model specifications
- Central hub blade server with development, test, production environments and controlled access

## Spreadsheet control process for YE



## Areas to address

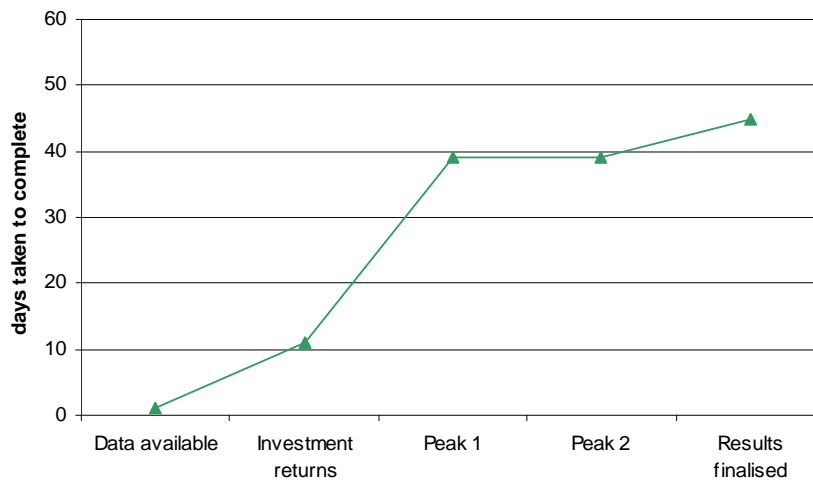


## Gaining buy-in

- Early buy-in from other areas (Investments and Accounts)
  - Visible support from finance executive management
  - Use executive team to monitor delivery – set the “tone from the top”
  - Improvements in reporting time benefits all areas - helps sell idea
- Develop approach with auditor’s support
  - Clearer processes gained auditor approval
- Strong leadership and sufficient resource
  - Integrated and experienced team – prevent silos
  - Don’t overload resources with other projects
- Broader behavioural change adopted
  - Right first time
  - Multi-disciplinary workshops : assess reality and “dream” – own the end-game
  - Set clear deliverable objectives and reward delivery

Actual year-end  
2009 experience

## End-2009 target plan

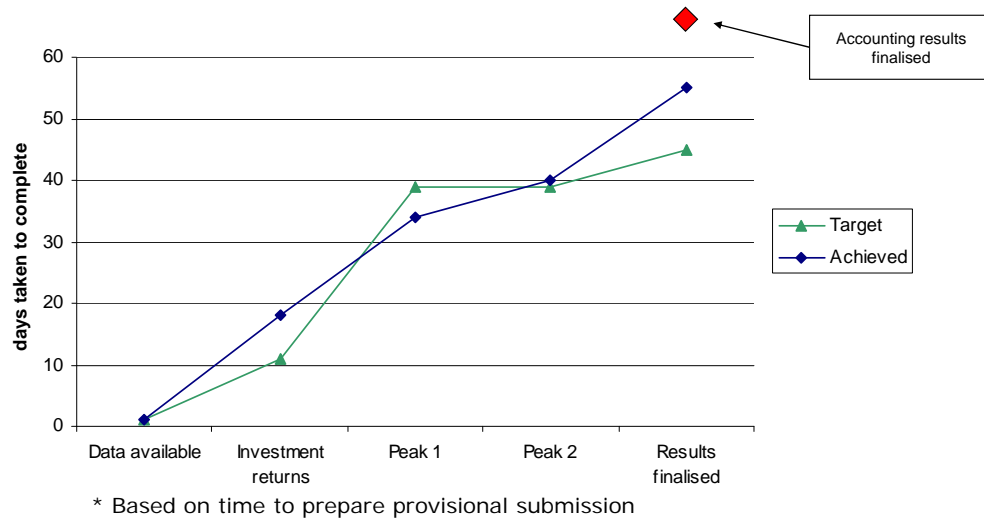


\* Peak 1 and Peak 2 are completed in parallel

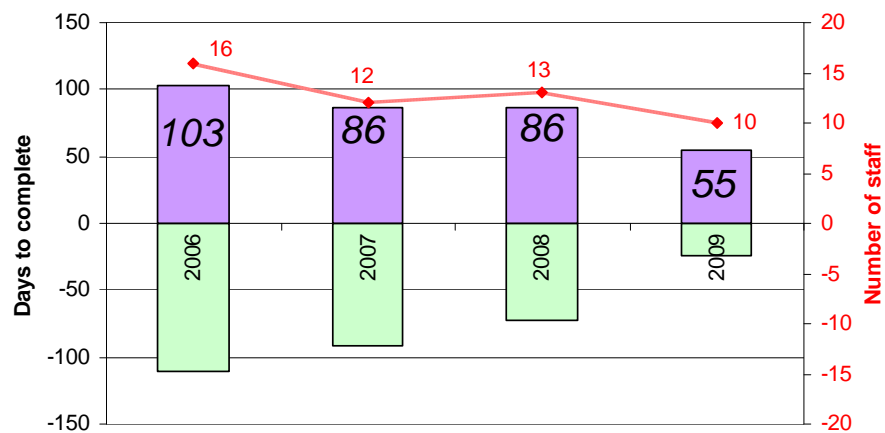
## Complexities at end-09

- Major changes at Board level
  - CEO left H2 2009; New CEO
  - FD left Nov 2009; New FD started Jan 2010
- New Financial Controller
- New external auditors
- Expense analysis completed after year-end close
- Manual adjustments & late changes

## Actual experience – end 2009

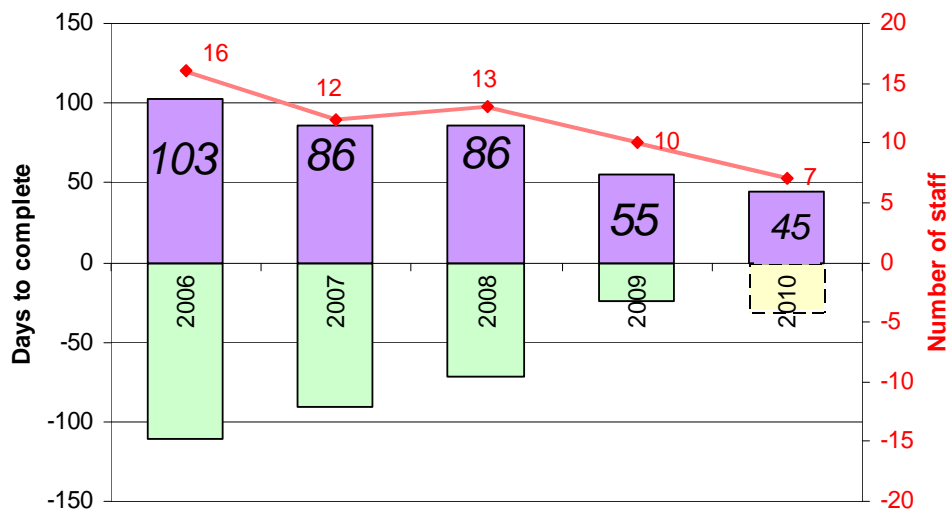


## Historical information - updated



# Developments in 2010

## Goal for end-2010



## Developments in 2010

- Technical forum to oversee governance / change control
- Automated analysis of change
- Automated ICA stress tests
  - Ability to produce ICA within 45 day timescale
- Silent running
  - Control of process from single spreadsheet
  - Models run without opening software
- Reduced number of manual reserves
  - Modelled previously unmodelled business

## Developments 2010

- Form ownership clarified
  - Executive ownership allocated
- External audit issue allocation clarified
  - Target closure within 24 hours
- Early auditor approval for key areas
  - Enhanced auditor engagement pre year-end
  - Actions from management letter closed
  - Structured time allocation to agree approach to each entity



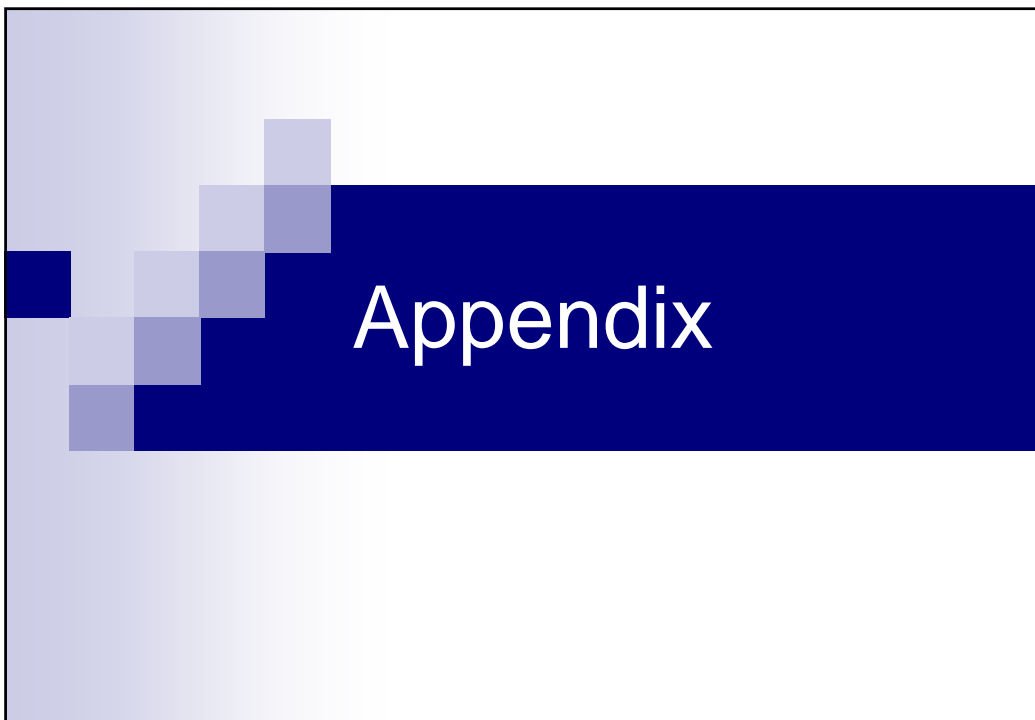
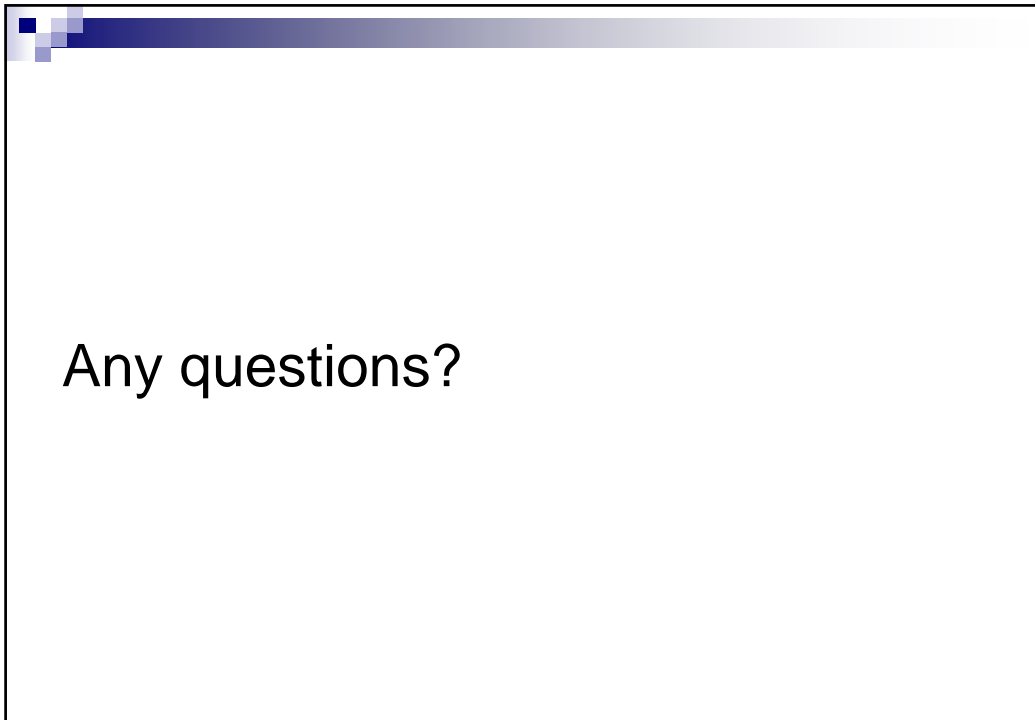
# Potential future improvements



## Potential future developments

- Enhance policy data automation
- Development of a data layer
  - One source of truth
- Enhanced use of ERA software
  - Migrate process maps
  - Automate process control with embedded sign-off
  - Repository for control documentation & “Master” spreadsheet management
  - Automate risk and issue logging to link to risk register
- Complete the automation to risk dashboards, including
  - Replicating portfolio links
  - Risk appetite (probability of ruin approach)
  - Stress and scenario analysis
- Intranet based run submission and job queuing/processing

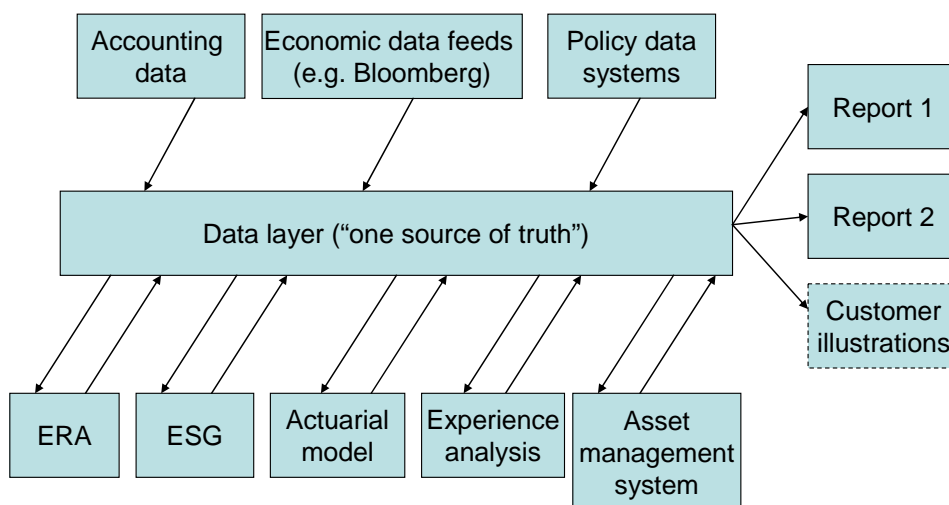




## Enhance policy data automation

- Raw data drop from IT – identify master data source
- Single point of data manipulation
- Automation of recurrent issue correction
  - E.g. missing data items
- Automated links to model point creation
- Automated data report production for cycle of data management with IT/business

## Data layer – “one source of truth”



# Nimbus software – screen shot

