Reinventing Analysis of Surplus

Simon Perry   Ernst & Young

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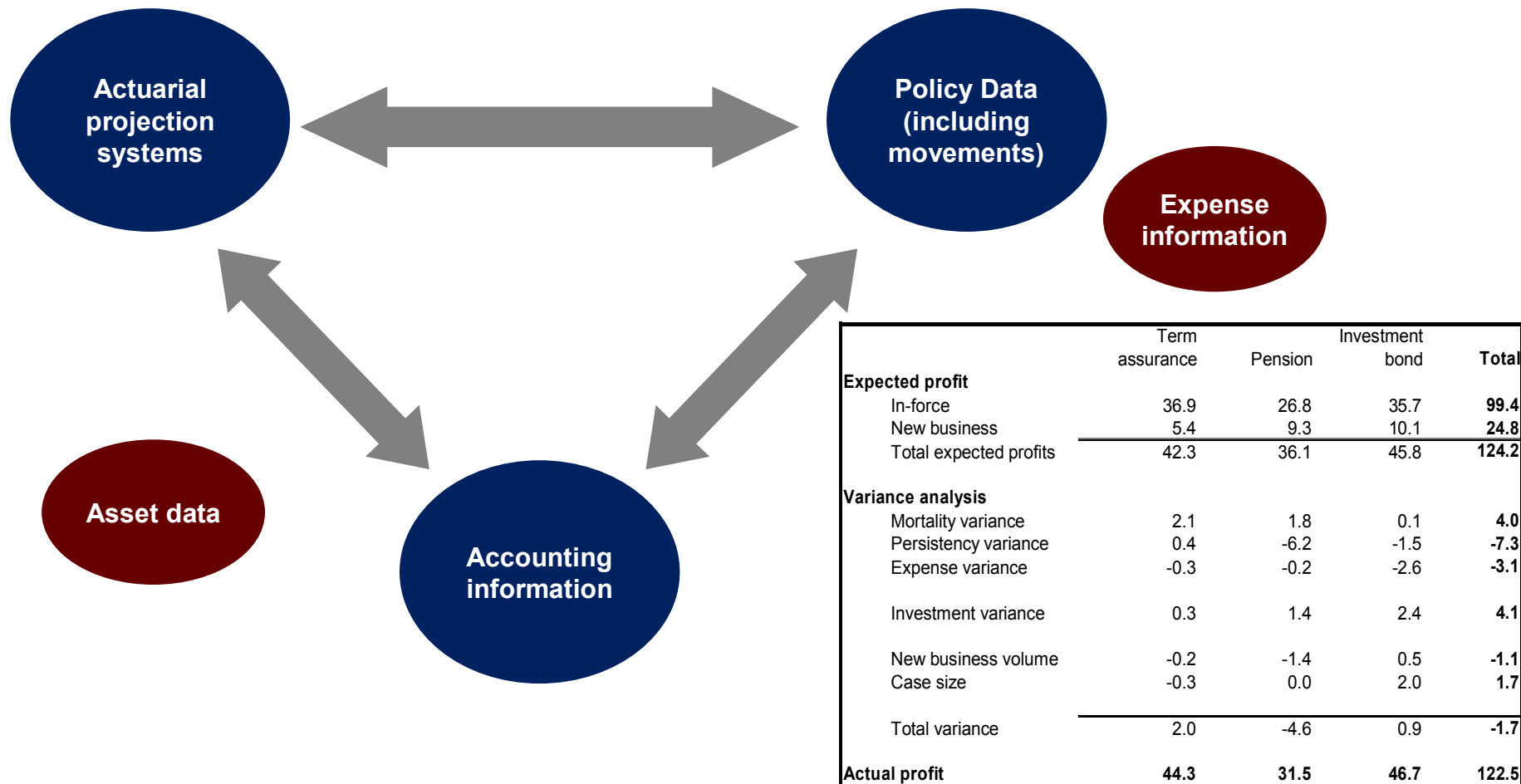
Angela Tatarow   Ernst & Young

Reinventing Analysis of Surplus

- Why is Analysis of Surplus key to a successful finance function?
- The Vision – what constitutes best practice?
- The Reality – what constitutes current practice?
- Implementing / enhancing the Analysis
  - Short term wins v long term vision
  - Overcoming common obstacles
  - Working together on the analysis
- Using the analysis as a value adding tool to manage the business

Why is the Analysis of Surplus important?

What is Analysis of Surplus?

	Term assurance	Pension	Investment bond	Total
Expected profit				
In-force	36.9	26.8	35.7	**99.4**
New business	5.4	9.3	10.1	**24.8**
Total expected profits	42.3	36.1	45.8	**124.2**
Variance analysis				
Mortality variance	2.1	1.8	0.1	**4.0**
Persistency variance	0.4	-6.2	-1.5	**-7.3**
Expense variance	-0.3	-0.2	-2.6	**-3.1**
Investment variance	0.3	1.4	2.4	**4.1**
New business volume	-0.2	-1.4	0.5	**-1.1**
Case size	-0.3	0.0	2.0	**1.7**
Total variance	2.0	-4.6	0.9	**-1.7**
Actual profit	**44.3**	**31.5**	**46.7**	**122.5**

Analysis of Surplus – A role play

A day in the life of the Head of the Actuarial Analysis team at A Life company

Analysis of Surplus – Meeting the needs of the business

Meeting the needs of:

Senior Management	The Finance Function	Auditors	Analysts	The Regulator
• Understanding profit drivers • Decision making	• An efficient financial reporting process • Planning and assumption setting	• A strong control on the financial results	• Explanation of results and sources of profit	• Evidence of a well controlled and managed company

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Analysis of Surplus – Some quotes

The Regulator – Senior FSA contact

*"An Analysis of Surplus is a sign that the company is **well controlled** and can provide valuable **insights into the profit drivers** of the business; this is why the FSA introduced it as a requirement for Peak 2.*

The analysis of Peak 2 is being performed well because it is an FSA requirement. An analysis of Pillar 2 is recommended practice and the FSA is seeing good examples coming through from clients.

*For Peak 1, on the other hand, market practice is mixed. The FSA does not require or monitor this, which presumably explains companies' behaviour. However, even for non-profit funds, an Analysis of Surplus can perform a useful additional **control to the accounting processes.***

*Analysing the past plays an important part in explaining a company's performance; even if the company expect the future to be different, it can be relevant to **understand the past** using Analyses of Surplus."*

An Auditor – KPMG (auditor of HBoS)

*"An analysis of embedded value earnings is a **key control** on EV results, and is **fundamental in understanding** what is happening to the business. Without analysing and reconciling the sources of earnings there is considerable scope for an error to remain undetected. Looking at the analysis of earnings is a key part of KPMG's approach to reviewing or auditing embedded values."*

Analysis of Surplus – Some quotes

An Analyst

*"The quality of information published continues to improve. **Consistency** of different reported information is important, otherwise we are limited to the lowest common denominator. In assessing companies, we are looking for a **strong track record** of delivering against expectations, in order to give us comfort on future assumptions. An analysis is essential to measuring this. A clear analysis with good explanations provides us with **confidence** in the numbers and the **ability of the management**."*

Senior Management

*"Analysis of Surplus is a **key control** within our business, and it ensures a streamlined and **efficient** reporting process. It assists in our **decision making,** by helping us to understand what's driving the bottom line, and also what's needed to improve performance. It can also provide us with a **'heads up'** of any potential problem areas."*
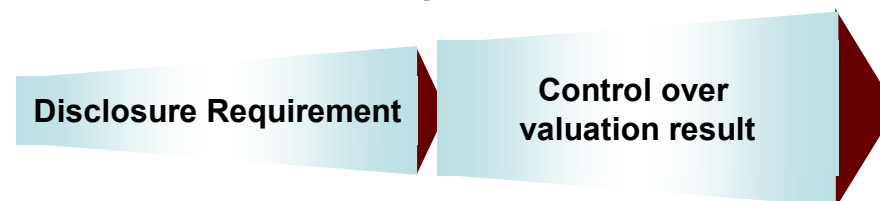
Analysis of Profit Drivers – Moving from control to MI

Typically, companies have carried out an analysis of surplus because they've been required to:

- Embedded Value profits
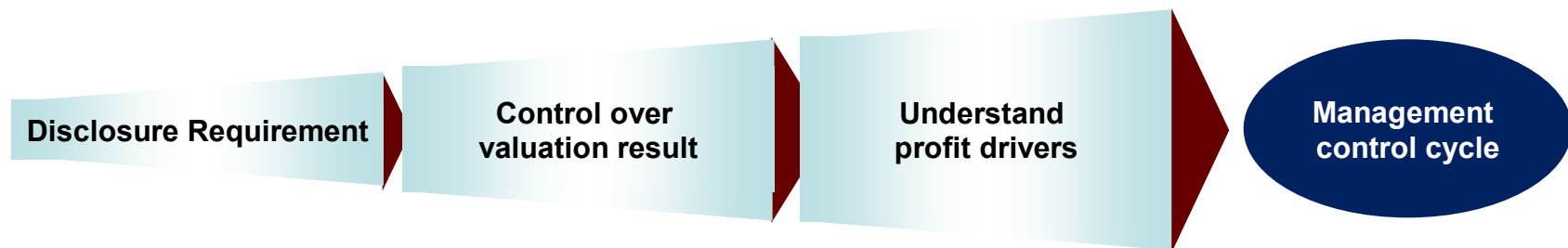- Analysis of movement in working capital (Peak 2)

Also seen as a strong control by management and auditors:

- Provides a check on the valuation result and gives management confidence in the result
- Provides a check on the underlying data and systems
- Helps to explain how the result has changed from the previous period
- Provides a check on the valuation assumptions and an indication of assumptions that need reviewing

Disclosure Requirement

Control over valuation result

Analysis of Profit Drivers – Moving from control to MI

- The analysis can be used for much more:
  - Provides an explanation of what is really driving the business in financial terms.
  - Can provide a single source of management information for the business.
  - Can feed into management decision making.
  - Creates an efficient reporting process.
  - Makes the finance function a value adding part of the business.

Disclosure Requirement → **Control over valuation result** → **Understand profit drivers** → **Management control cycle**

A Vision – What constitutes 'best practice'?

A Vision – Our thoughts on 'best practice' (1)

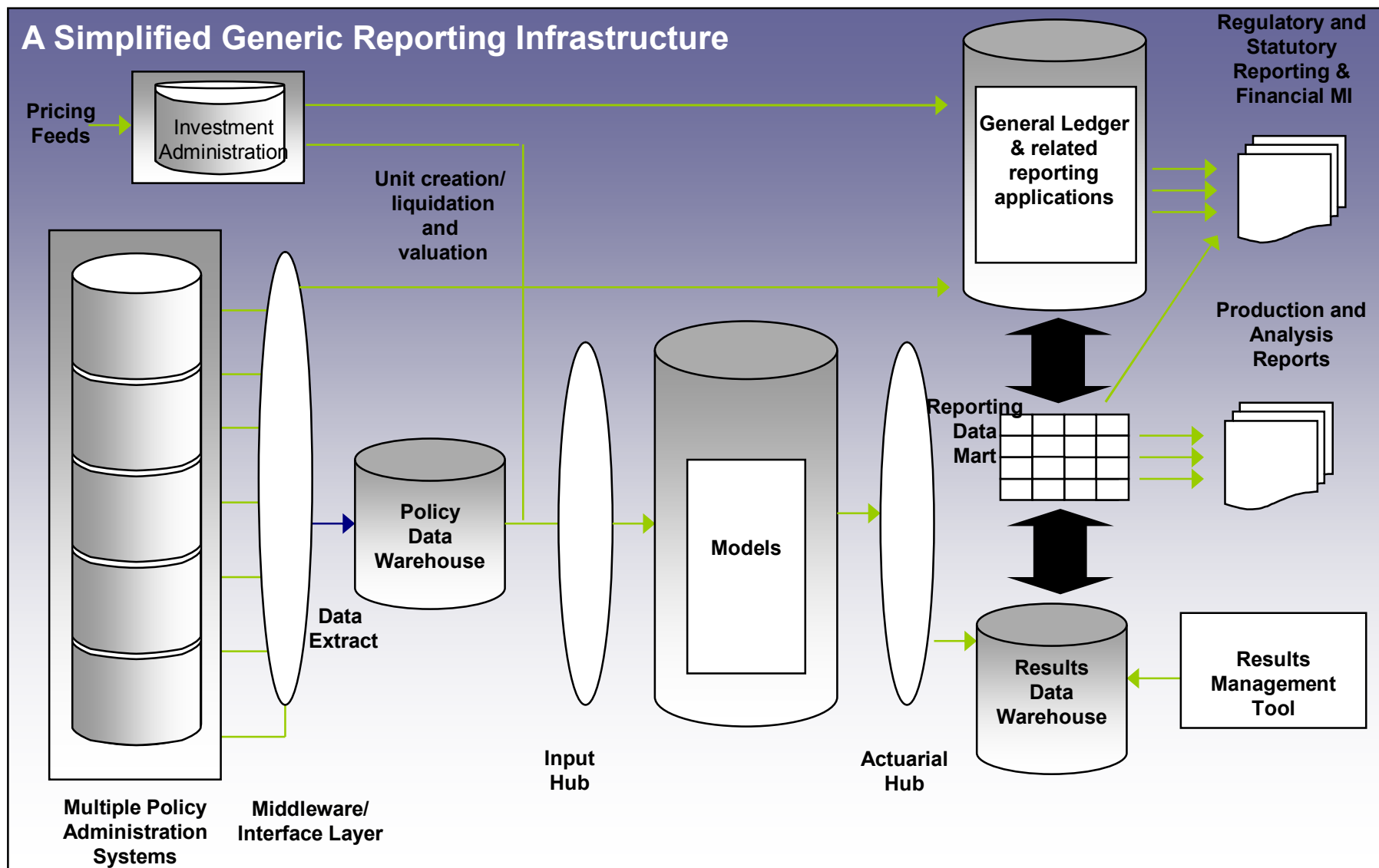| Automation	The analysis process is fully automated, up to the point of tracing the unexplained.
Tools	The inputs and results are stored on a Data Warehouse, enabling users across the business to cut the data any way they wish.
Consistency	There is a link between the data, actuarial systems, and accounting systems.
Reporting bases	The analysis covers all reporting bases – there is one core basis which is bridged to others to ensure consistency.
Granularity	The results are granular (ie at a policy level)
Frequency	The analysis is conducted frequently (ie monthly)

A Vision – Our thoughts on 'best practice' (2)

Timeliness	The analysis is carried out promptly (ie with the reporting of the results).
Control	The process is fully controlled and documented.
Accuracy	The analysis is accurate with predetermined materiality limits.
Reliability	There is confidence in the results.
Use	The results are used to manage the business and form the central source of financial MI.
Embedding	The analysis is properly embedded – the results are used throughout the business.

Technical Discussion Points / Questions

Decrements	Individual policy or average policy approach?
Order of analysis	Analysis results will depend on order in which variances are analysed.
Variances	Analyse against opening or closing assumptions?
Expense analyses	To what level of granularity? Is an accurate expense analysis required every time period?
Unexplained	Different issues give rise to unexplained each time. When to stop exploring? Setting tolerance levels (% profit, % balance sheet)
Model points	How to allocate grouped results (eg stochastic) to an individual policy database?
Unmodelled business	Creating an expected revenue account for unmodelled business.
Tax	Carry out analysis net of tax, or separately analyse tax variance? Dynamic tax modelling.
New business	Allocating experience variances to new business (ie, to new business contribution, or to experience variances).
Documentation	Is full documentation required at each period?

A Vision for Actuarial Reporting

A Simplified Generic Reporting Infrastructure

Pricing Feeds

Investment Administration

Unit creation/ liquidation and valuation

General Ledger & related reporting applications

Regulatory and Statutory Reporting & Financial MI

Production and Analysis Reports

Multiple Policy Administration Systems

Middleware/ Interface Layer

Data Extract

Policy Data Warehouse

Input Hub

Models

Actuarial Hub

Reporting Data Mart

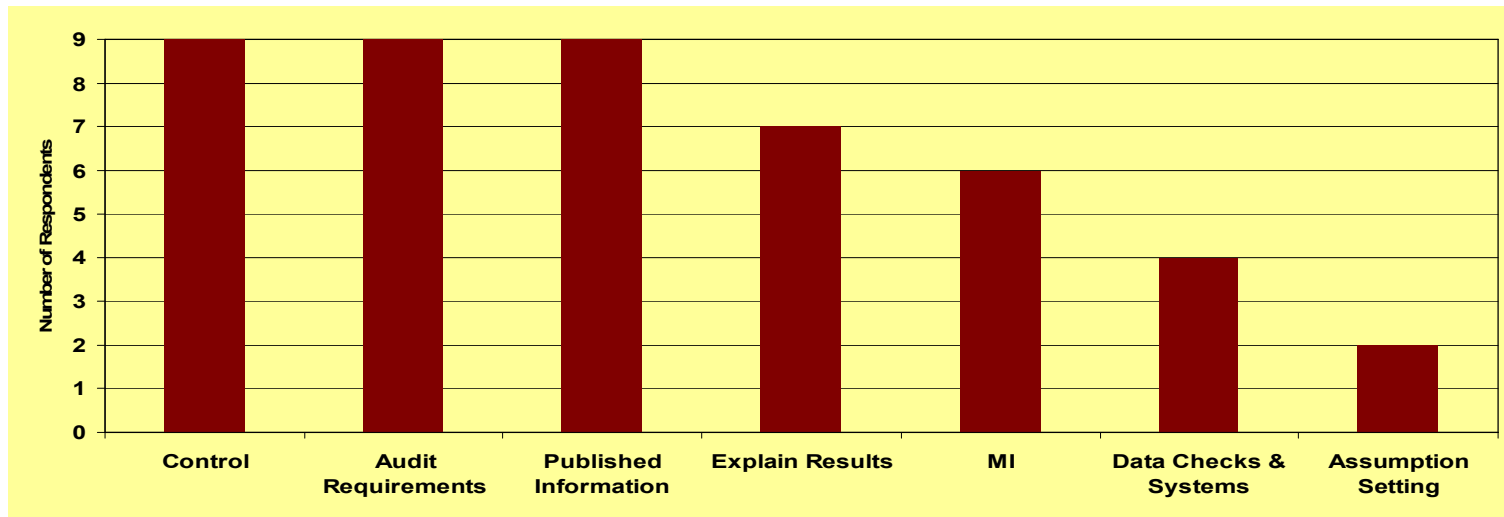Results Data Warehouse

Results Management Tool

The Reality – What constitutes current practice?

- Based on findings from a survey of many of the leading life companies carried out in March 2007
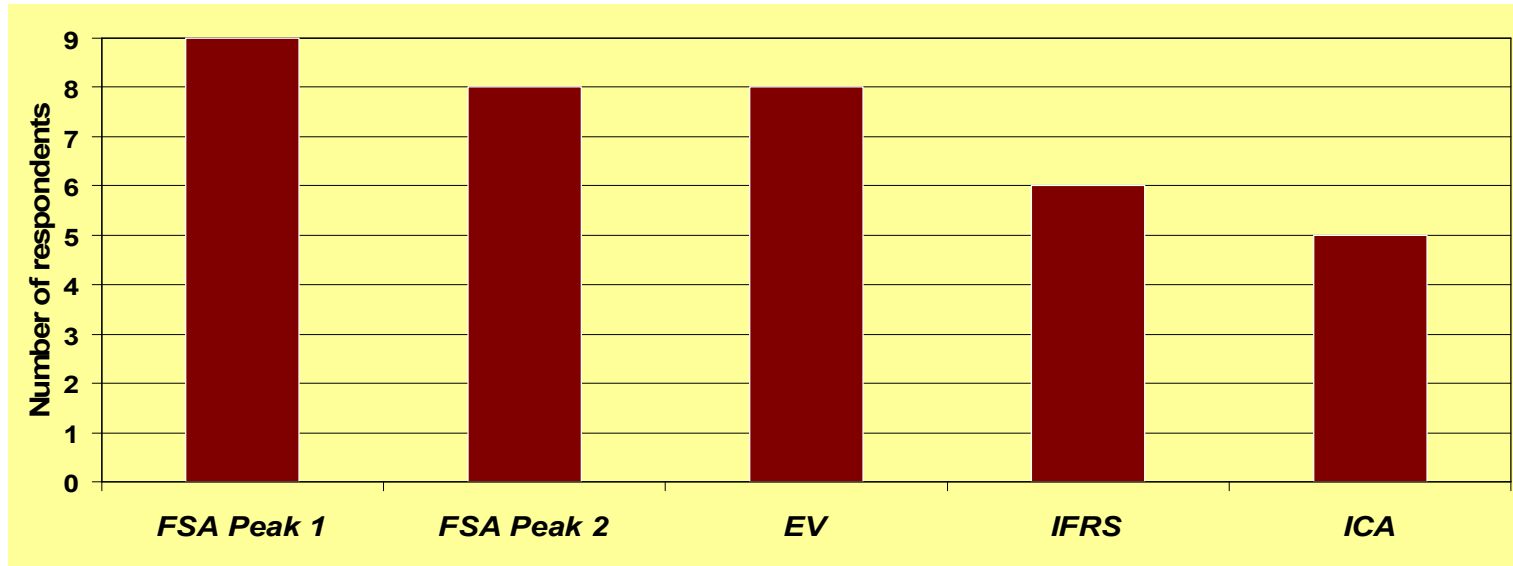
Moving from Control to MI

Primary uses of the analysis:

- Analysis of Surplus is established as a control and as a source of published information
- But it is not fully embedded as a source of MI
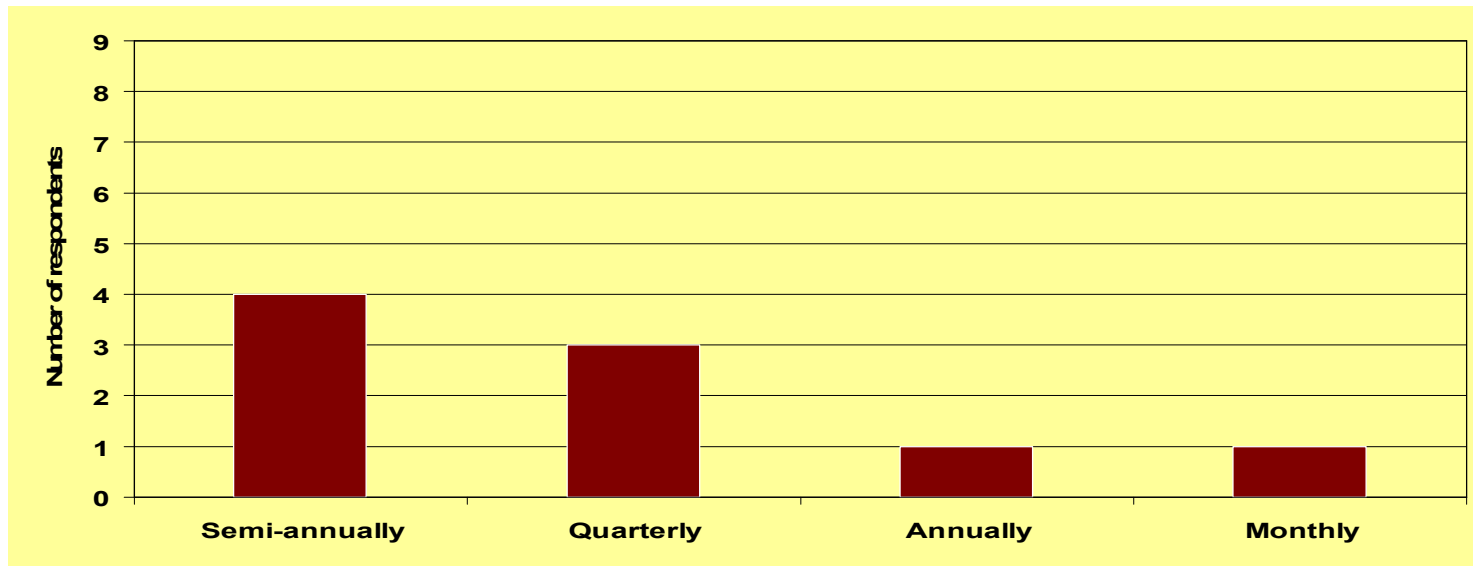
Reporting Bases

Reporting bases analysed:

- Some measures are analysed well while others are analysed approximately or not at all.
- Most companies carry out independent analyses for each measure, leading to inconsistency and inefficiency.

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Frequency & Granularity

The frequency of the analysis:

- Frequency (and granularity) often depend on the measure analysed, often driven by reporting requirements.
- Few companies are achieving the granularity required to get real insights into the performance of their business.

Automation & Sophistication

- Very few companies have developed a sophisticated and fully automated analysis.
- For many companies, some aspects of the analysis are done well while others are more approximate or based on manual calculations.
- Analysis is accurate where needed, but more work is required to demonstrate the reliability of the analysis to the business.

Tools Used & Their Quality

- Spreadsheets are most commonly used to develop the analysis.
- Some companies have implemented a Data Warehouse, and many others are considering this route.

Quality of tools (out of 5):
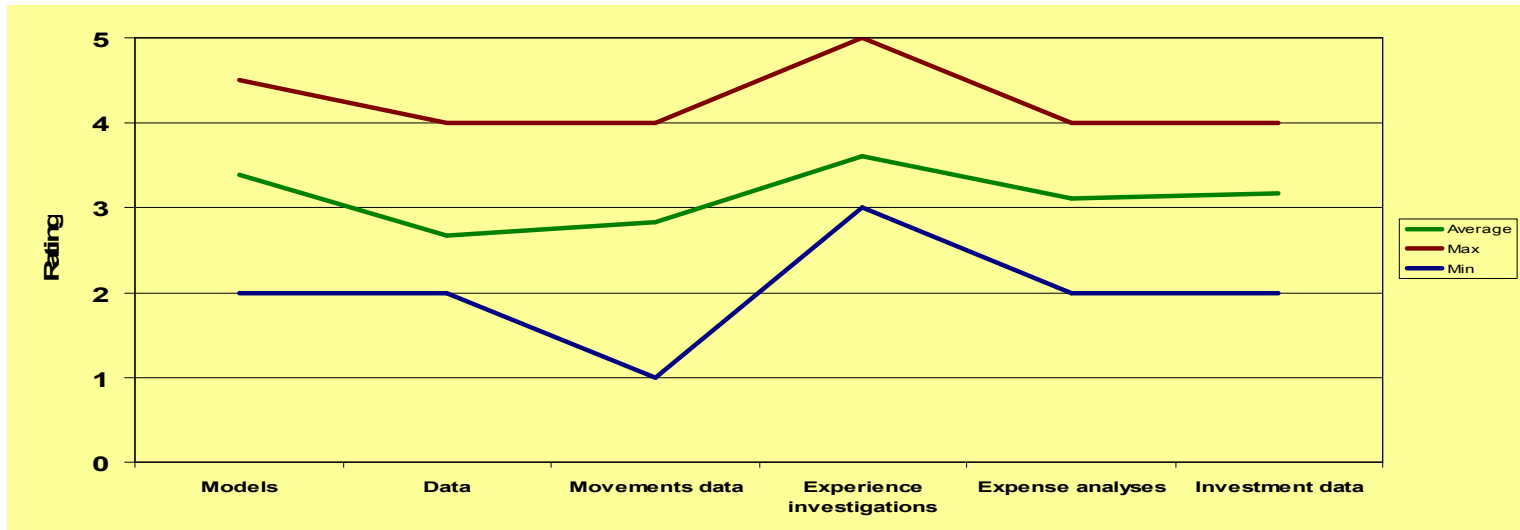
- Companies typically struggle with movements data and with accounting information.

Moving from Reporting to Value Adding

Time to complete tasks:
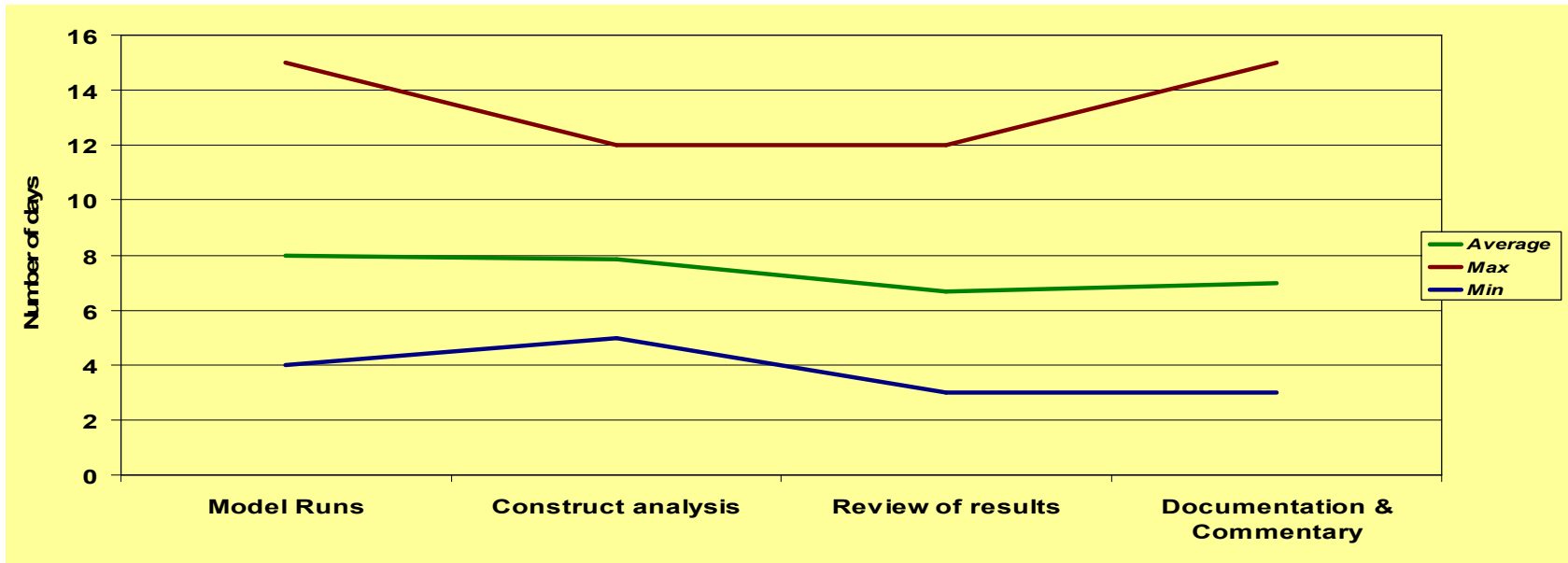
- Most companies spend too much time on performing the calculations and too little time on interpreting and explaining the results

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How do companies measure up against best practice? (marks out of 10)
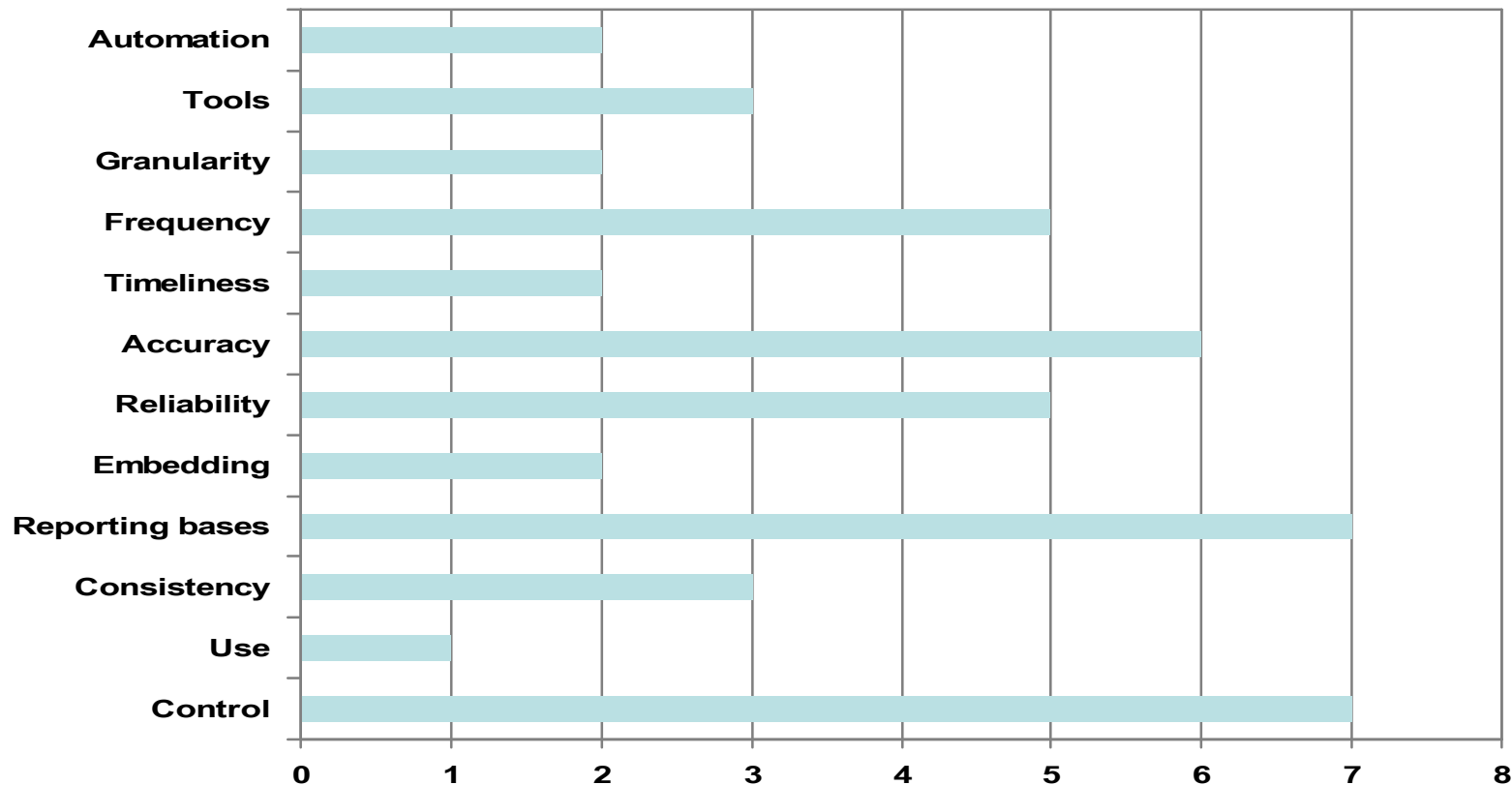
How do companies measure up against best practice? (marks out of 10)

Average = 3.5

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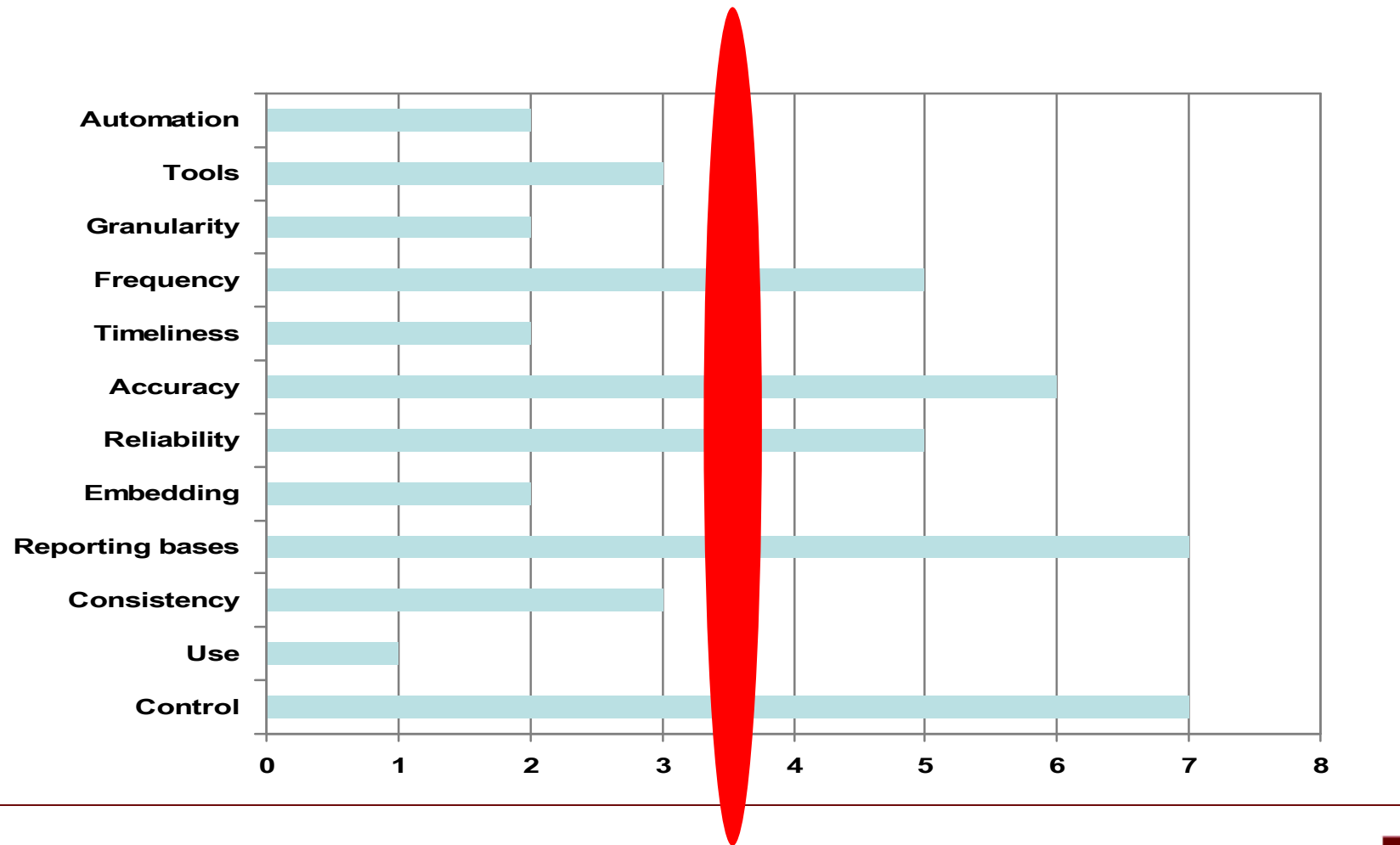
Enhancing Analysis of Surplus

Enhancement: Objectives

- The Project's aim is to develop and improve this type of "Actual v Expected" Report

	Surplus (£m)
Expected Surplus	
Impact of Modelling Changes	
Non-Economic Experience Variances	
Economic Experience Variances	
Impact of Non-Economic Assn Changes	
Impact of Economic Assn Changes	
New Business Contribution	
Other One-Off Items	
Exchange Impacts	
Unexplained	
Total Actual Return	

- Long term aims:
  - One core analysis to be used on all key reporting bases
  - Cover all life companies and material lines of business
  - An embedded BAU process, carried out regularly
  - Developed alongside another project addressing actuarial systems infrastructure

Short Term Wins
vs
Long Term Vision

Phased delivery is the key to success

Quick Wins	Medium Term	Long Term
▪ Improvement of current process ▪ Quick fixes, using approximations where necessary ▪ Very specific to available information ▪ Identify main drivers of the surplus ▪ Focus on material lines of business	▪ Based on existing systems ▪ Improvements to modelling systems – eg, to project actual experience ▪ Improvements to experience investigations to support variance analysis ▪ Consistent accounting data at level of analysis	▪ Redesign of systems and data ▪ Good quality reliable data – in force, movement files (inc. new business) ▪ Consistent accounting data ▪ Integrated modelling platform ("one version of the truth") ▪ Integrated "data warehouse" ▪ Sophisticated automation ▪ Full reconciliation between reporting bases
Quick wins achieved by focusing on material lines and material components of profit		**Longer term solution delivering wider objectives with more permanent benefits**

Analysis Improvements: Indicative plan

Phase 1

Understand requirements & assess current state (2-3 weeks)	Development of detailed options (3-4 weeks)	Implementation

High level current state assessment and high level gap assessment.

- Analysis of key issues and constraints.
- Assess capacity for change.

Identify key issues and priorities to inform the development of future state design principles.

Indicate how to manage costs of phases 2 & 3 and subsequent implementation.

Future State Assessment

Develop options for ultimate state.

Test target options against current state and gap assessment and for each option;

- Specify data requirements.
- Identify system development requirements.
- Prepare outline delivery plan.

Ultimate operating model

Create detailed delivery plan for implementation of long-term vision.

Present plans and receive feedback from key stakeholders.

Consider insights from S-T work.

Update delivery plan for feedback, secure funding and resource for further developments.

- Implementation strategy

Short-term Solution

Collate information available.

Prepare indicative outline of output/reporting from analysis.

Agree scope of short-term work (business covered, enhancements).

Develop project plan for short-term work.

- Paper outlining options and recommendations

Short-term Solution

Build improvements to existing process.

Feed-back information to planning of long-term project.

Test updated processes and implement as BAU process.

- Kick off meeting
- Working design principles

- Current state assessment
- Plan for implementing quick wins

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Enhancement: Achievements in Phase 1

- Enhanced analysis of Group profit (IFRS)
- Specifically targeted variances in:
  - Investment
  - Lapse
  - Mortality
- Enhancements to a control comparing cashflows from actuarial models to general ledger sitting alongside the analysis
- Delivered benefits by year end
- The process was embedded into BAU
- Contributed to a stronger control environment at last year end
- A vision and implementation plan for long term

- Phase 2 is now well advanced to implement longer term vision

Overcoming Common Problems & Obstacles

Potential problems & obstacles

When implementing a new AoS process or enhancing an existing one, some significant obstacles will need to be overcome:

- Insufficient appreciation of the benefits that the AoS can bring
- Systems lack the capability to support the analysis
- Data not available in sufficient depth or quality to carry out analysis
- Insufficient resource available to make the enhancements required
- The right skills and knowledge not present within the team

Other challenges need to be met during the course of the project:

- Teams need to work together across Finance and IT (and rest of business?)
- Clear communication of requirements and detailed project management is essential to success

The systems & data challenges

Areas where systems and data are inadequate:
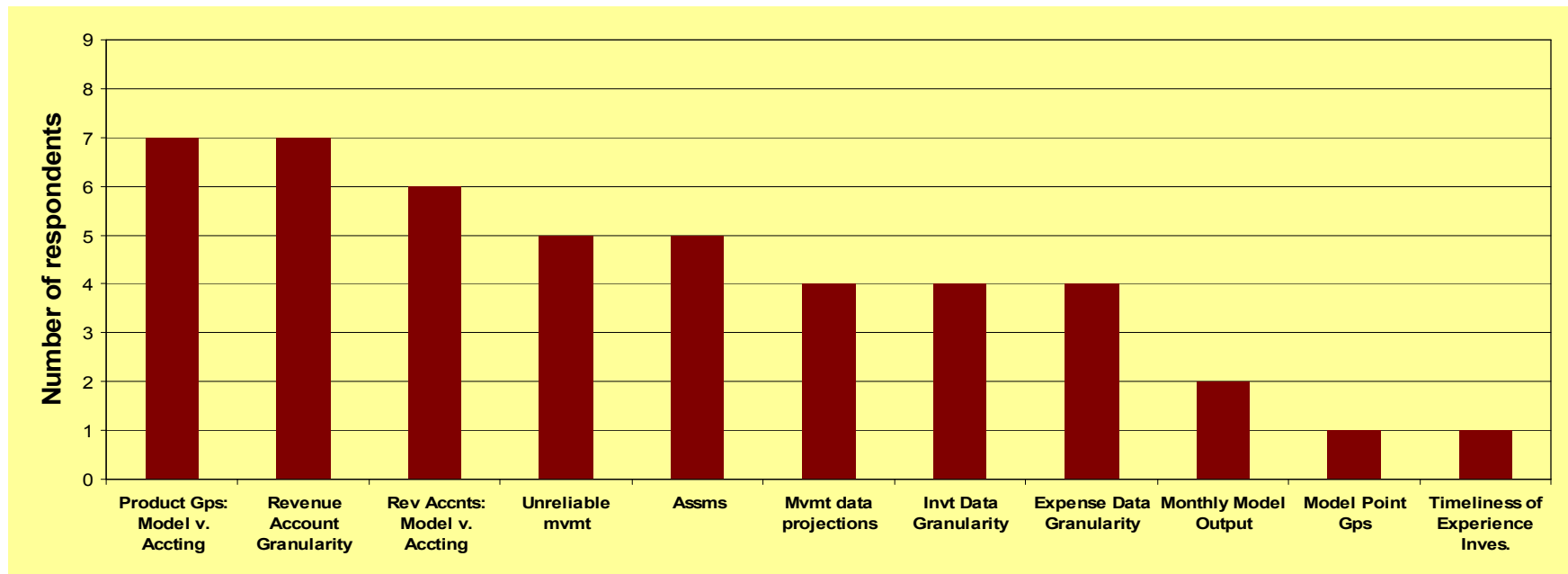
Movements data & accounting systems are the two main problem areas for most companies

Overcoming common problems & obstacles

- There are unlikely to be simple generic answers to the various problems.
- Each organisation is likely to have specific problems requiring tailored solutions.
- Gaining sponsorship from "the top" will be key to the success of the project.
- Plans and solutions will need to be flexible and may need to change once the project is "in-flight".
- Different solutions for each product / company / legacy system may be required.
- Pragmatism will be important throughout the project.

Working Together on the Analysis

Working Together

Joint effort

- The analysis is mainly seen as an actuarial tool and the process is led by the actuaries.
- A successful analysis requires input from many areas of the business.

Actuaries and accountants

Differences in experiences and approach can often mean that actuaries and accountants see things in very different ways:

- Different views as to emphasis and role of AoS
- Top down v bottom up view?
- Different importance placed on different bases (EV v IFRS)
- Different definitions / terminology

One approach to use these differences as an advantage is to bring the accountants and actuaries together in one team

Business Partnering:

Using the analysis as a value adding tool to manage the business

Business Partnering: Creating value from the analysis

The analysis focuses management time and effort on the most value creating activities:

- Consistent financial impacts
- Variances – trends or one-offs?
- Impact of different businesses and cohorts
- Information timely enough to act on
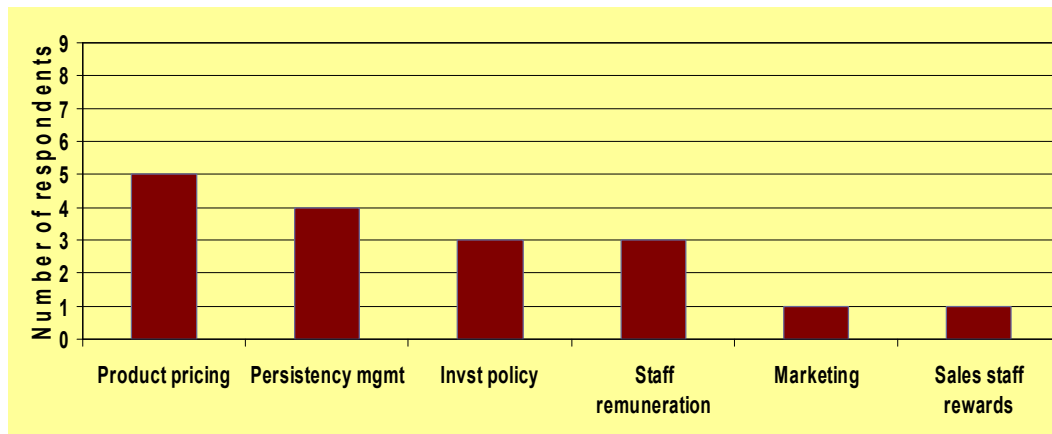
Other potential areas:
- Cost control
- Distribution strategy
- Customer segmentation
- Risk management
- Capital management

The analysis is not being used widely in other areas of the business
Where used, this is on an ad hoc reactive basis, not an automated proactive basis

Business Partnering: How does this bear out in practice?

The survey results show that companies have some way to go to get the full benefit of the analysis throughout the business

Use of analysis in management reporting
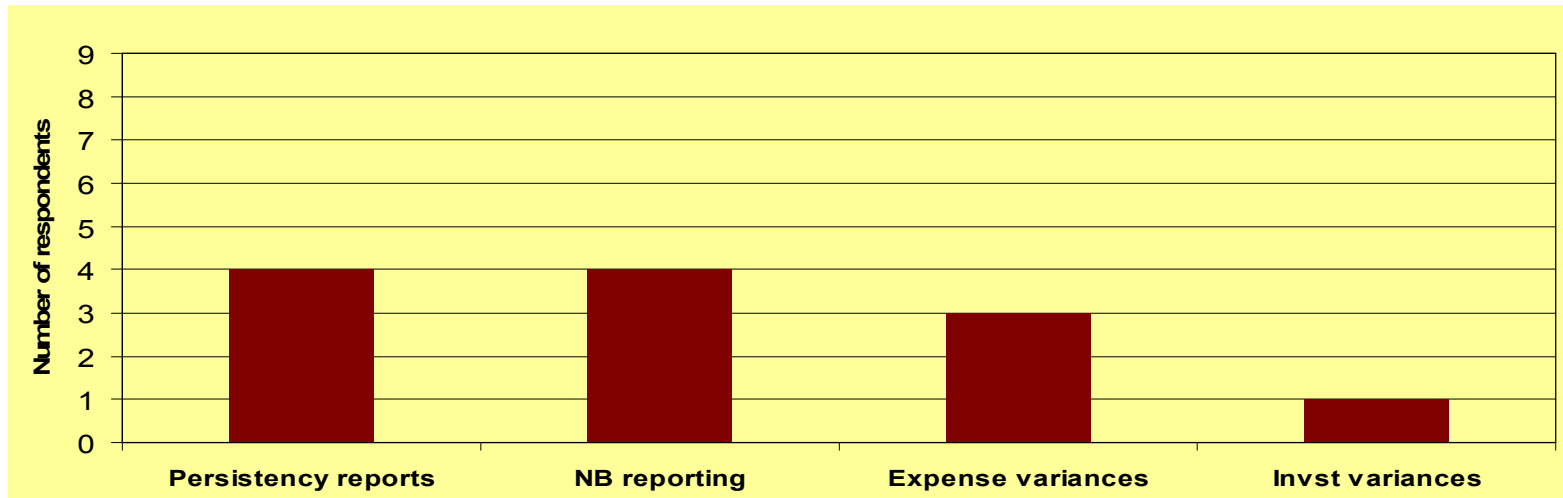
Analysis of Surplus is seen by many as an actuarial tool – owned and run by the actuaries.

This needs to change as companies move towards a single integrated finance function that offers proactive partnering support to the business.

Business Partnering: Analysis of profit drivers – an example

Best MI Life assurance company - Analysis of Profit Drivers Dec 2006 (£m)

| | IFA | | | | Bank partner | | | |
	Term assurance	Pension	Investment bond	**Total IFA**	Term assurance	Pension	Investment bond	**Total Bank partner**
Expected profit								
In-force	36.9	26.8	35.7	**99.4**	8.8	22.8	44.6	**76.2**
New business	5.4	9.3	10.1	**24.8**	8.6	3.5	20.0	**32.1**
Total expected profits	42.3	36.1	45.8	**124.2**	17.4	26.3	64.6	**108.3**
Variance analysis								
Mortality variance	2.1	1.8	0.1	**4.0**	0.6	0.5	0.1	**1.2**
Persistency variance	0.4	-6.2	-1.5	**-7.3**	0.5		-2.3	**-1.8**
Expense variance	-0.3	-0.2	-2.6	**-3.1**	-0.5	-0.4	7.2	**6.3**
Investment variance	0.3	1.4	2.4	**4.1**	0.2	1.1	3.6	**4.9**
New business volume	-0.2	-1.4	0.5	**-1.1**	-3.6	1.3	2.0	**-0.3**
Case size	-0.3	0.0	2.0	**1.7**	-2.5	0.1	1.5	**-0.9**
Total variance	2.0	-4.6	0.9	**-1.7**	-5.3	2.6	12.1	**9.4**
Actual profit	**44.3**	**31.5**	**46.7**	**122.5**	**12.1**	**28.9**	**76.7**	**117.7**

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Issues:
High churn rates on IFA pension business
Management response:
Customer segmentation to identify valuable customers
Surrender correspondence
Staff retention bonuses

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Further supporting information
Expected average lapse rate: 10.0%
Actual average lapse rate: 12.5%

Impact of 2.5% change in lapse rate:
IRR: reduced from 15.3% to 13.2%
VNB: reduced from £50.2m to £39.9m

Key message
IRR reduced below target hurdle rate

Historic trend				
Nov	Oct	Sep	Aug	Jul
-4.3	-3.8	-1.0	0.8	1.0

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Issues:
High churn rates on IFA pension business
Management response:
Customer segmentation to identify valuable customers
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Issues:
Lower volumes of term assurance business through bank branches
Management response:
Consider changing product terms more suitable to bank clients
Encourage bank staff to focus on protection business

Further supporting information
Expected average lapse rate: 10.0%
Actual average lapse rate: 12.5%

Impact of 2.5% change in lapse rate:
IRR: reduced from 15.3% to 13.2%
VNB: reduced from £50.2m to £39.9m

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Variance analysis								
Mortality variance	2.1	1.8	0.1	**4.0**	0.6	0.5	0.1	**1.2**
Persistency variance	0.4	-6.2	-1.5	**-7.3**	0.5		-2.3	**-1.8**
Expense variance	-0.3	-0.2	-2.6	**-3.1**	-0.5	-0.4	7.2	**6.3**
Investment variance	0.3	1.4	2.4	**4.1**	0.2	1.1	3.6	**4.9**
New business volume	-0.2	-1.4	0.5	**-1.1**	-3.6	1.3	2.0	**-0.3**
Case size	-0.3	0.0	2.0	**1.7**	-2.5	0.1	1.5	**-0.9**
Total variance	2.0	-4.6	0.9	**-1.7**	-5.3	2.6	12.1	**9.4**
Actual profit	**44.3**	**31.5**	**46.7**	**122.5**	**12.1**	**28.9**	**76.7**	**117.7**

Issues:
High churn rates on IFA pension business
Management response:
Customer segmentation to identify valuable customers
Surrender correspondence
Staff retention bonuses

Issues:
Lower volumes of term assurance business through bank branches
Management response:
Consider changing product terms more suitable to bank clients
incentivise bank staff to focus on protection business

Issues:
Extra volumes of business from bank leading to lower unit costs
Management response:
Reconsider cost sharing terms with bank

Further supporting information
Expected average lapse rate: 10.0%
Actual average lapse rate: 12.5%

Impact of 2.5% change in lapse rate:
IRR: reduced from 15.3% to 13.2%
VNB: reduced from £50.2m to £39.9m

Key message
IRR reduced below target hurdle rate

Historic trend

Nov	Oct	Sep	Aug	Jul
-4.3	-3.8	-1.0	0.8	1.0

Business Partnering: The key to a strong finance function

Analysis of Surplus - a Core Tool

- **A core central tool** for MI and decision making
- **Regular, timely, accurate** MI
- **Early 'heads up'** on trends
- Quick and effective **decision making**
- **Financial impact** of management decisions
- **Consistent measure** across different activities
- Activity in **areas that make a material difference**
- **Reward and recognition** linked to financial performance
- **Granularity - 'Slice and dice'** results:
  Product, distribution channel, customer, IFA
- A dynamic measure focusing on **movements in balance sheets**
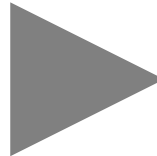
A Leading Finance Function

Value adding
- Finance can focus on understanding the results rather than just producing them

Credible
- Analysis provides a highly effective control on the results - results are correct first time, every time

Efficient
- Automated analysis is core to a regular, fast, pain-free financial close process

An integrated partner of the business
- A single tool to manage the business, with finance playing a leading proactive role

Role play revisited

- The Head of Actuarial Analysis meets the Finance Director and audit partner after the year end

Summary

- Analysis is key to a successful finance function

- No-one is doing it perfectly

- Implementation is difficult

- A pragmatic focus on short term wins together with a long term vision can overcome these problem

- Incorporating the analysis into regular MI can add significant value to the business

Questions?