The Actuarial Profession
making financial sense of the future

GIRO conference and exhibition 2010
Fabrice Brossart and Martin Lynch, AXA Insurance

Data in the context of Solvency II,

an example …

12-15 October 2010

Data in the context of Solvency II
An example
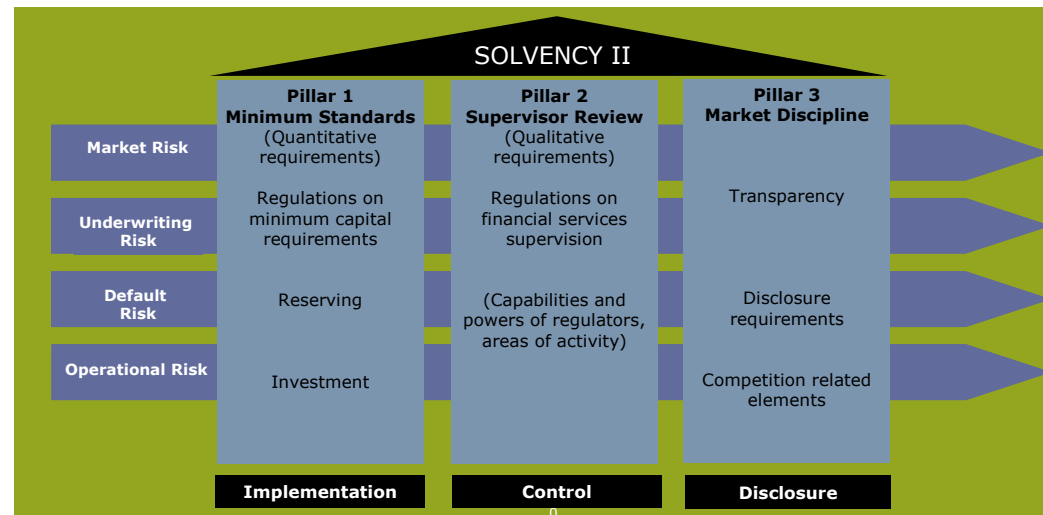
Background

- Solvency II overview
- CEOIPS advice

AXA Insurance's approach

- A bit of AXA history
- Introducing the BICC
- Data procedures: reconciliations, reference data
- Input into Internal Model and assumptions database
- Current developments
- Discussion

Solvency II overview
Introduction

- A European solvency regime for the insurance industry based on the Basel II three-pillar structure. It moves away from one approach fits all to an approach geared to the risks to which companies are exposed and encourages companies to measure and manage risk. Effective 31/12/2012.
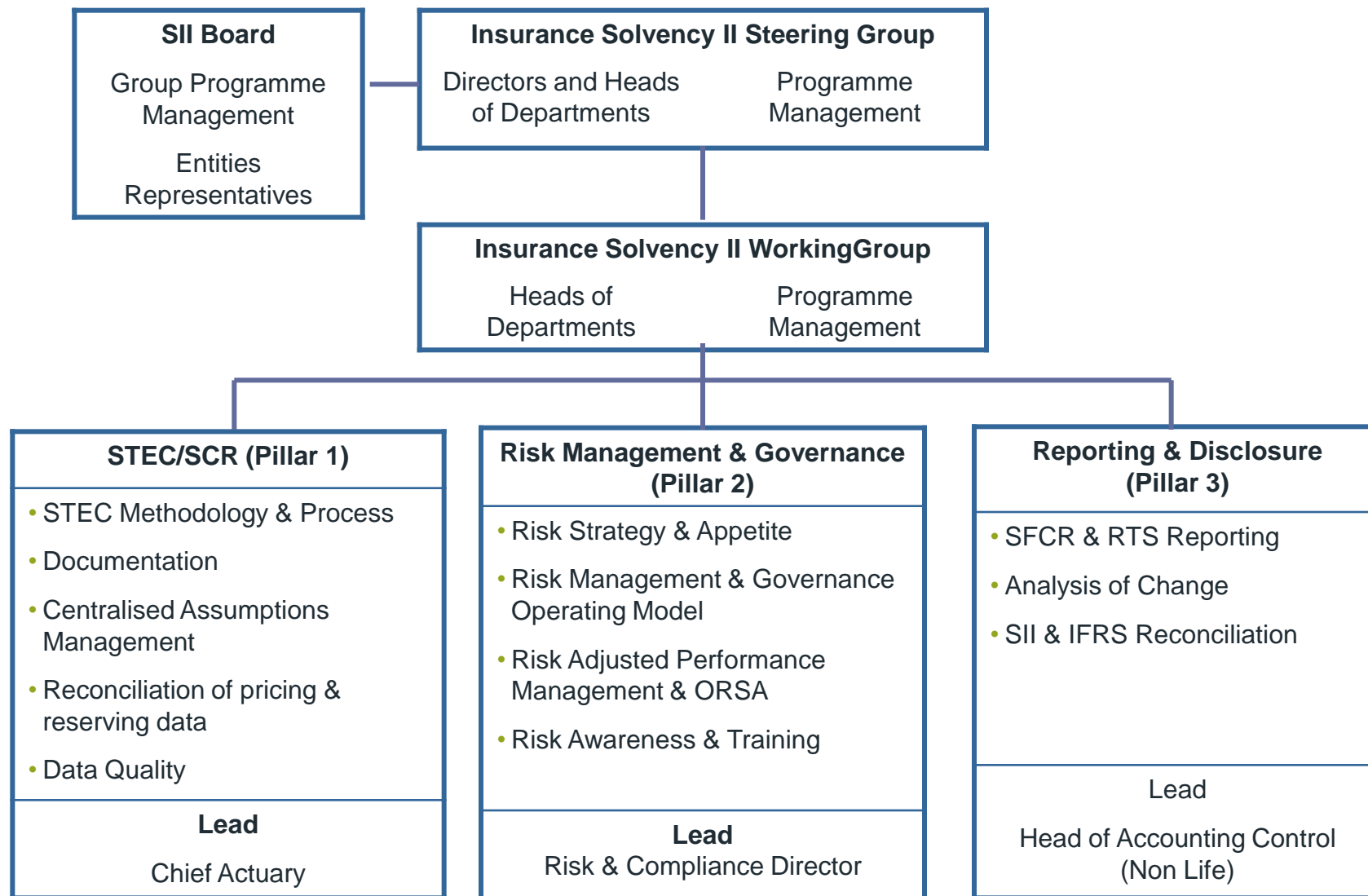
Solvency II overview
Three Pillar structure

- Pillar 1 is concerned with the calculation of capital. It aims at an economic view of the balance sheet rather than the current factor-based approach to solvency. Companies can adopt a default option, the standard formula, or develop their own model

- Pillar 2 deals with enterprise risk management. It ensures that the capital model is at the heart of a company's decision-making and that all risks are properly governed

- Pillar 3 addresses reporting and disclosure. It is currently intended that a significant amount of information about the first two pillars will be publicly available in order to boost customers and investors confidence.

Solvency II overview
Programme governance

SII Board	**Insurance Solvency II Steering Group**	
Group Programme Management	Directors and Heads of Departments	Programme Management
Entities Representatives		

Insurance Solvency II WorkingGroup	
Heads of Departments	Programme Management

STEC/SCR (Pillar 1)	**Risk Management & Governance (Pillar 2)**	**Reporting & Disclosure (Pillar 3)**
• STEC Methodology & Process • Documentation • Centralised Assumptions Management • Reconciliation of pricing & reserving data • Data Quality	• Risk Strategy & Appetite • Risk Management & Governance Operating Model • Risk Adjusted Performance Management & ORSA • Risk Awareness & Training	• SFCR & RTS Reporting • Analysis of Change • SII & IFRS Reconciliation
Lead Chief Actuary	**Lead** Risk & Compliance Director	**Lead** Head of Accounting Control (Non Life)

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Data requirements
CEIOPS Level 2 guidance

Technical Provisions - Standard for Data Quality (CP 43)

- There are three key criteria:
  - appropriateness, completeness and accuracy
- Internal processes and procedures should be in implemented to ensure compliance with these criteria. These should cover:
  - Data quality management
  - Identification, collection and processing of data
  - Role of auditors and actuarial function
- There should be a review and validation process
- The paper contains advice on how to deal with data deficiencies.

Data requirements
CEIOPS Level 2 guidance

Tests and standards for internal model approval (CP 56)

- Data used for the internal model should be
  - Accurate, complete and appropriate (Article 121)
  - Updated at least annually
- Similar requirements for external models and data
- The data policy should be signed off by senior management
- Expert judgement is required to complement data or as a substitute to missing data
- There should be a directory of any data used, specifying its source, characteristics and usage

A bit of AXA history…
Solvency II foundations started ten years ago

- Starting with the acquisition of Guardian Royal Exchange in 1998, AXA found itself in a situation with **multiple systems and unconnected actuarial and financial reporting systems.**

- During the next five years c.£15m was spent to provide a single repository (AMI) to provide both actuarial and financial reporting data

- Although providing control and compliance it did not fulfil AXAI's vision to have MI as a **critical enabler to the delivery of profitable growth**

- In 2007/8, AXA UK undertook an E&Y review of its MI system and organisational capability. The review identified that there were opportunities to move toward a more flexible service oriented BI environment more closely aligned to the business

- A multiyear project then started on this journey……..

A bit of AXA history…
Further data investments are in progress

- The first phase in 2008/9 was to produce '**relevant' financial driver MI;** the AXAI Exec Pack reports agent-level performance across a number of financial KPIs; this completed during 2010.

- The second phase underway is to integrate AXAI's **strategic systems into a new data warehouse solution** and move **output measures down to operational drivers**

- This phase also delivers the data elements required for **Solvency II** compliance i.e. a central **Assumptions hub** (June 2010) and **controlled and reconciled Pricing, Reserving** and **Finance** data feeds.

- However, investment must be supported by organisational change……………………

Introducing the BICC
Why a Business Intelligence Competency Centre?

- Although BI can be tackled through a technical solution – our experience with AMI- it works best in conjunction with organisational change to support the following key organisational challenges:

  - Single point of contact

  - Solution to remove cottage industries

  - Skill leverage

  - Data quality management ownership

  - Consistency and automation of BI reporting

  - Direct ownership for efficient downstream integration of front end systems e.g. into general ledger, capital modelling etc.

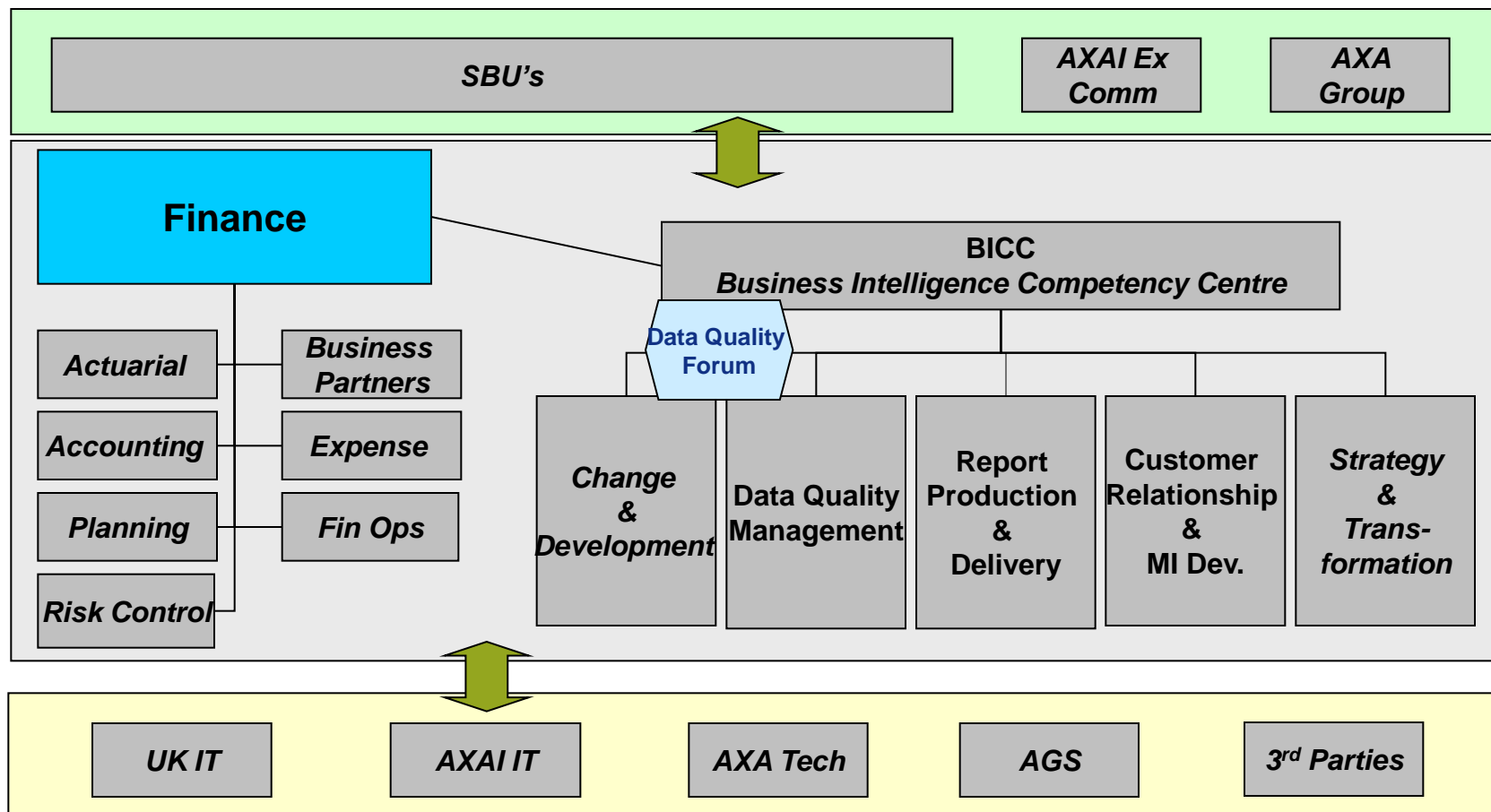 - Setting the strategy and innovation for the future

Introducing the BICC
AXA's specific experience – challenges

- Challenges to consider when creating a BICC
  - Secure senior sponsor support
  - Define the BICC that best suits your business
  - Communicate up front business need and clear wins
  - Deliver services that bring fast commercial benefit through AGILE deployment providing rapid but realistic increments to cement success
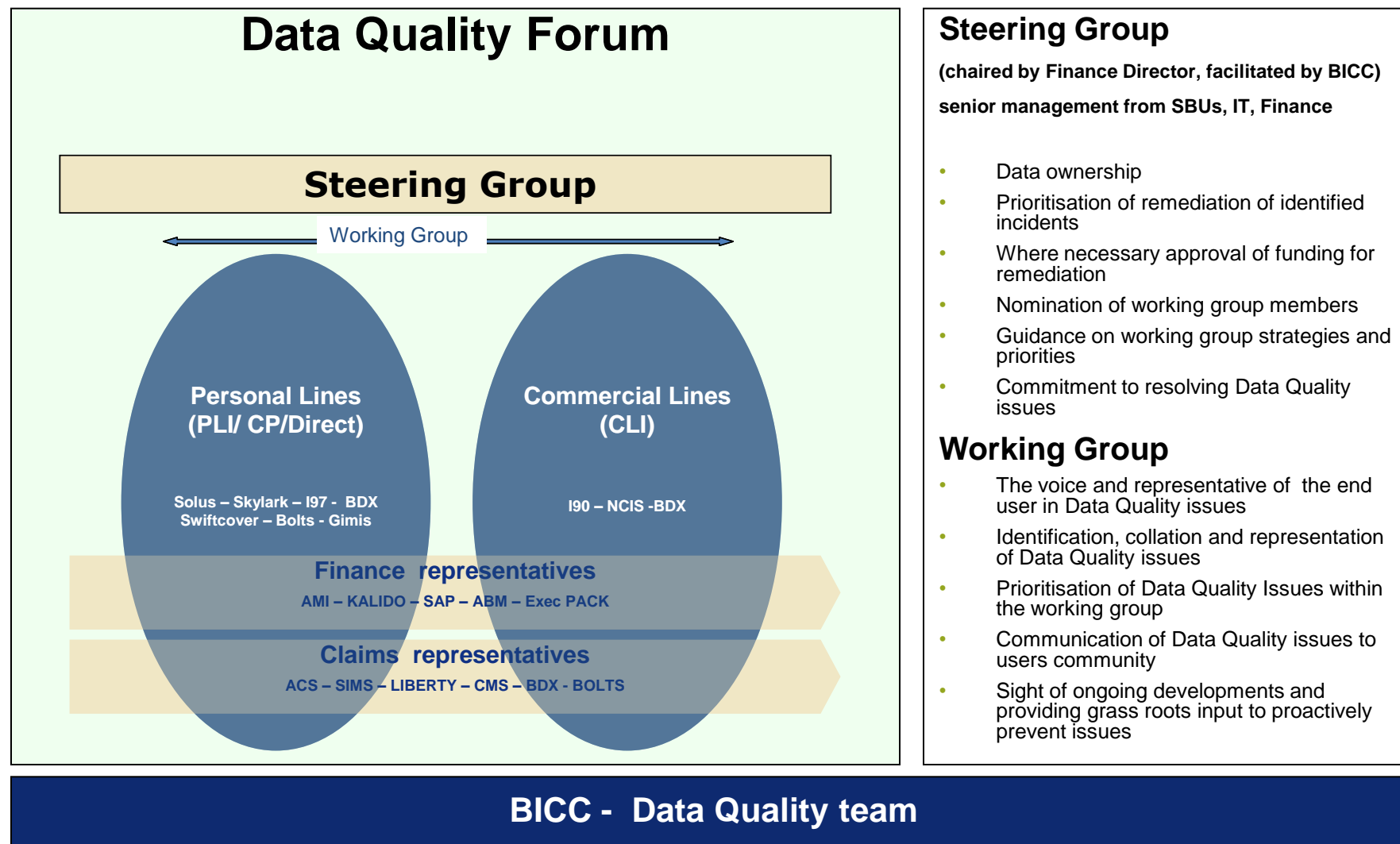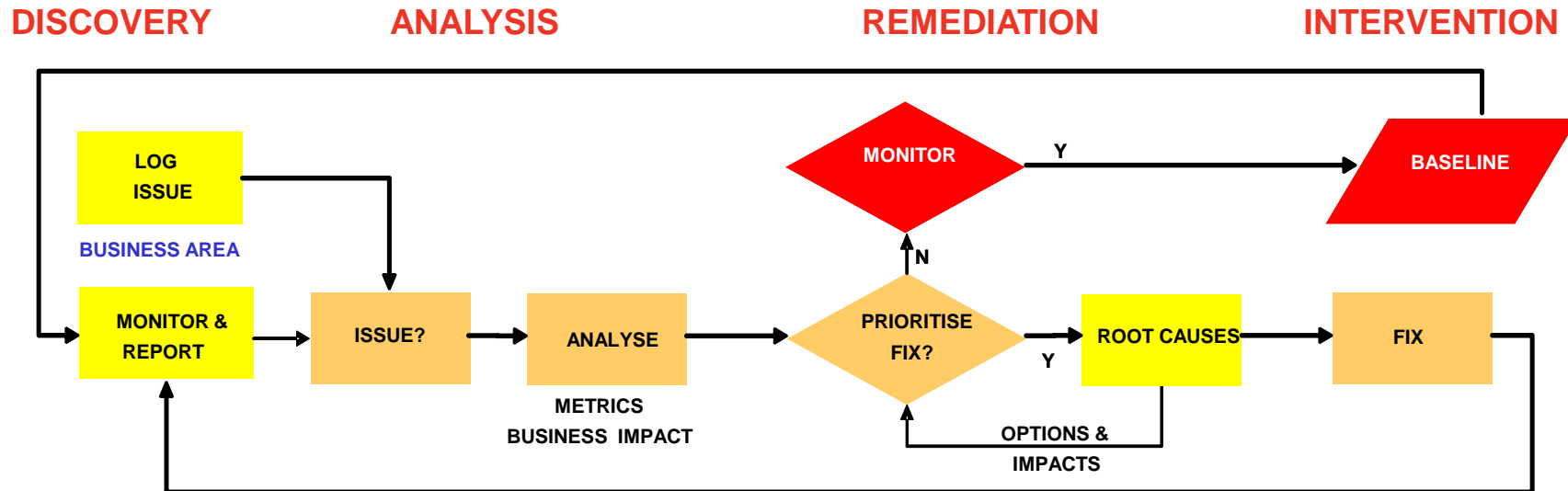
Introducing the BICC
What BICC model has AXA deployed?

Data procedures: reconciliations, reference data Data Quality Forum

Data Quality Forum

Steering Group

Working Group

Personal Lines (PLI/ CP/Direct)

Solus – Skylark – I97 - BDX
Swiftcover – Bolts - Gimis

Commercial Lines (CLI)

I90 – NCIS -BDX

Finance representatives
AMI – KALIDO – SAP – ABM – Exec PACK

Claims representatives
ACS – SIMS – LIBERTY – CMS – BDX - BOLTS

Steering Group

(chaired by Finance Director, facilitated by BICC)

senior management from SBUs, IT, Finance

- Data ownership
- Prioritisation of remediation of identified incidents
- Where necessary approval of funding for remediation
- Nomination of working group members
- Guidance on working group strategies and priorities
- Commitment to resolving Data Quality issues

Working Group

- The voice and representative of the end user in Data Quality issues
- Identification, collation and representation of Data Quality issues
- Prioritisation of Data Quality Issues within the working group
- Communication of Data Quality issues to users community
- Sight of ongoing developments and providing grass roots input to proactively prevent issues

BICC - Data Quality team

Data procedures: reconciliations, reference data
Data Quality Process

DISCOVERY **ANALYSIS** **REMEDIATION** **INTERVENTION**

- *Collaborative Issue **logging tool**. Currently Excel based but moving towards web based.*
- ***Define DQ** needs of operations, underwriting & pricing and monitor*

- ***Agreed constituent members** of Working Group; modelling teams, risk management pricing and underwriting etc…*
- ***Agreed DQ issue model**; i.e. define a rule or standards based response and automate*
- ***Defined preventative measures** and enforce via WG*

- ***Defined Fix criteria** i.e. If not fixable - can it be monitored?*
- ***Defined monitoring criteria and automate**?*
- ***Determine root causes and implications** upon long term data management strategy; definitions of the data, how the data is maintained.*

- ***What are preventive options** i.e. find the real root cause of the issue:*
  - *Are the data definitions / standards incorrect?*
  - *Do we have sufficient control to ensure it.*
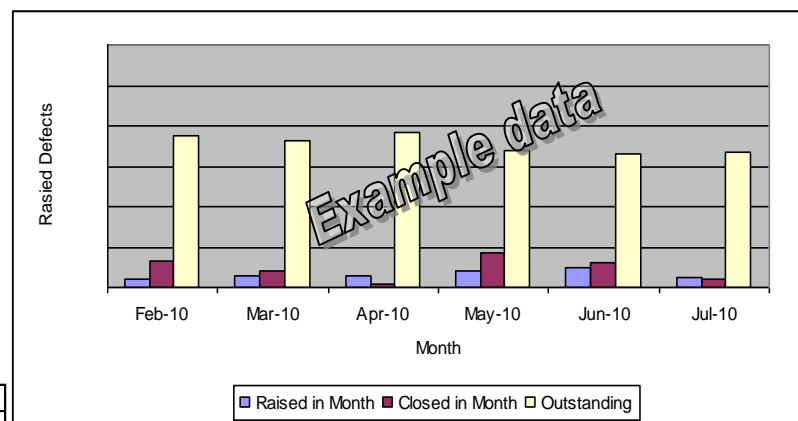
Data procedures: reconciliations, reference data
Data Quality Issue log – an example

- X New issues raised and aA total of x issues have been closed in the month. x was due to no fault found and x were as result of x data corrections.

- A snapshot of the issues as at Feb 2010 (x in total) has been base lined for remediation. An update on progress is to be provided at the next IFORC meeting

Working Group Issues	Jul-10	Jun-10	May-10	Apr-10	Mar-10	Feb-10
Raised in month	x	x	x	x	x	x
Closed in Month	x	x	x	x	x	x
Outstanding	x	x	x	x	x	x

Example data

		Completeness	Accuracy	Timeliness	Consistency	Total
3rd Party Data	System	x	x	x	x	x
	Data Transfer	x	x	x	x	x
Leakage	System	x	x	x	x	x
	Data Transfer	x	x	x	x	x
	Total	x	x	x	x	x

- Summary analysis commentary 1

- Summary analysis commentary 2

•**3rd Party Data** refers to Data Quality Issues identified outside of the AXA IT estate where data is being provided or used within AXA
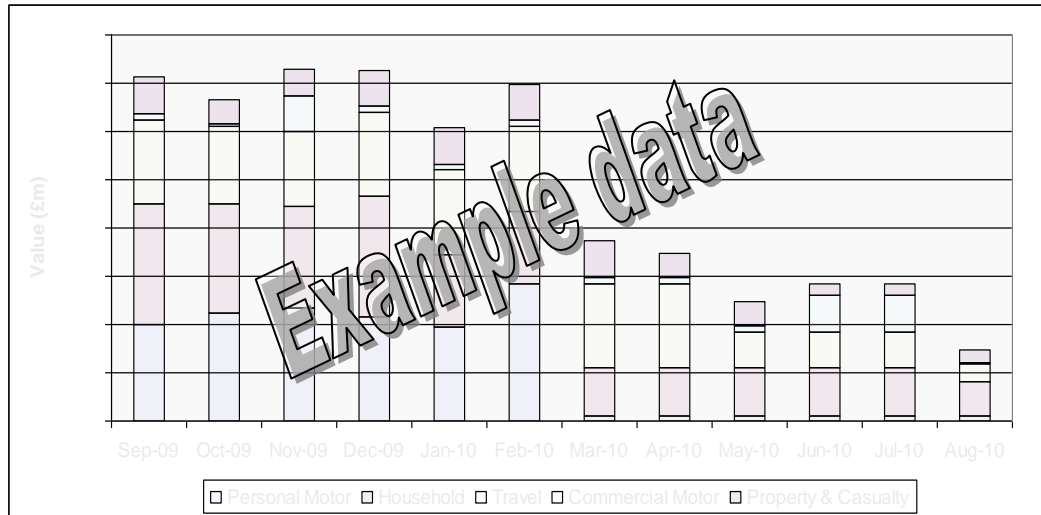•**Leakage** refers to Data Quality issues identified within the AXA IT Estate
•**System** – Issues identified as being created within a specific system
•**Data Transfer** – Issues identified as arising on data transfer between specific systems

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Data procedures: reconciliations, reference data
Data Quality Dashboard – an example

Example data

Premium Suspense £Xm

•Motor

• *Motor has decreased by £Xm for July*

Household

•*Household has decreased £Xk for July*

Travel

• *Travel has decreased £Xm for July*

Commercial

•*All commercial suspense has decreased £Xm for July*

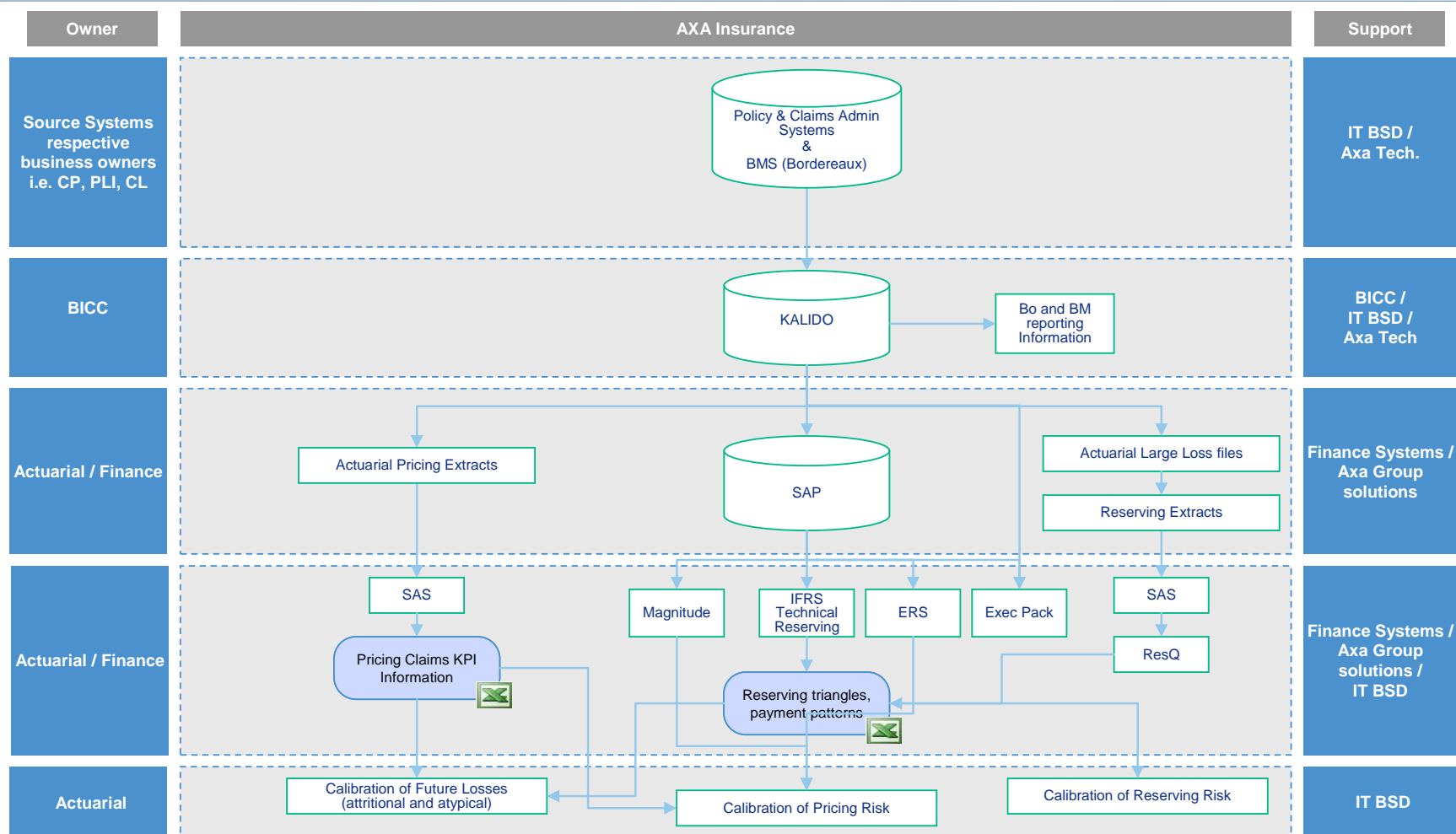| Premium	Tolerance		Actual		RAG	Movement (£)	Actions	Responsibility
	Transaction Volume	Absolute Value	Transaction Volume	Absolute Value (£)				
Personal Motor	500 - 1000	£50,000	x	x	A ↓	x (x net)	x	BICC / IT BAU
Household	500 - 1000	£50,000	x	x	G ↔	x (x net)	x	SBU
Travel	1000 - 2000	£50,000	x	x	R ↓	x (x net)	x	IT BAU
Commercial Motor	100 - 200	£50,000	x	x	G ↑	x (x net)	x	BICC
Property & Casualty	500 - 1000	£50,000	x	x	A ↑	x (x net)	x	BICC
Totals	**2600 - 5200**	**£250,000**	x	x				

AXA's experience – positive impacts

- Moving from common goals and fragmented BI to common goals and common BI

- External reviews by E&Y, Deloitte (Q2 2009) and IBM have all indicated that the BICC has in particular improved data governance beyond that provided by technology alone

- Avoided tactical solutions in silo and facilitated the rationalisation of BI software and hardware

- Improved business confidence in data quality

- Established earlier business engagement with BI e.g. new product or distribution developments

- Begun journey on meta data management

- Reduced new data integration costs

- Industrialised BI capability and toolsets

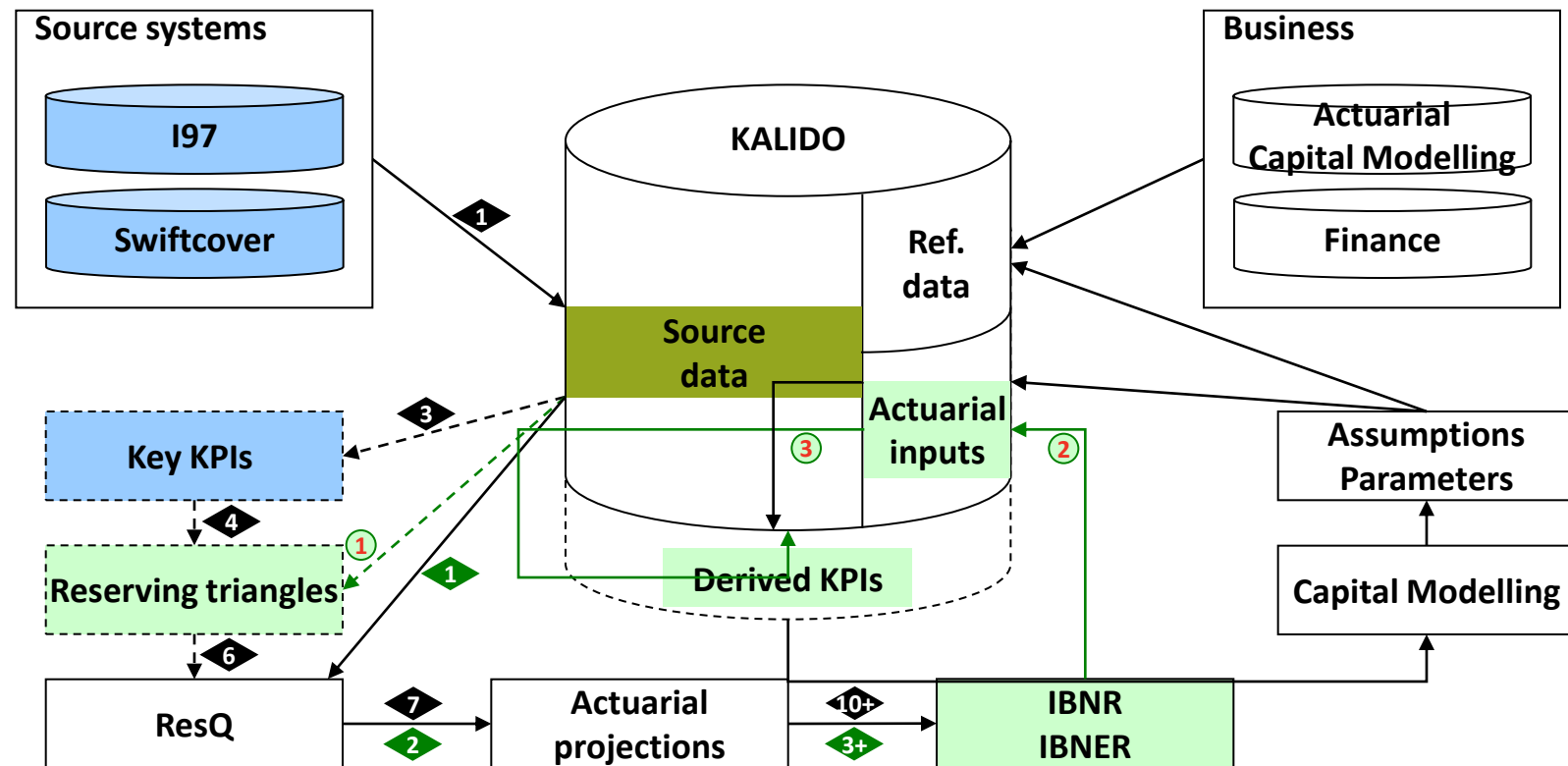# Input into Internal Model and assumptions database Insurance Risk data flow

Note: Arrows indicate data flows which are all monitored and reconciled

Current developments
Actuarial Blue Sky Plans

Actuarial Reserving Processes – Blue Sky vision

Discussion

Tips on formatting your presentation in The Actuarial Profession's style

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