MOODY'S ANALYTICS

Solvency II – European Lessons

Brian Heale

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Agenda

1. EIOPA update & Current Status of Solvency II Programs in Europe
2. Moody's SII Survey – Key Findings
3. Technical Platform for Solvency II
4. Potential Business Benefits generated by Solvency II

1. EIOPA Update

EIOPA Update

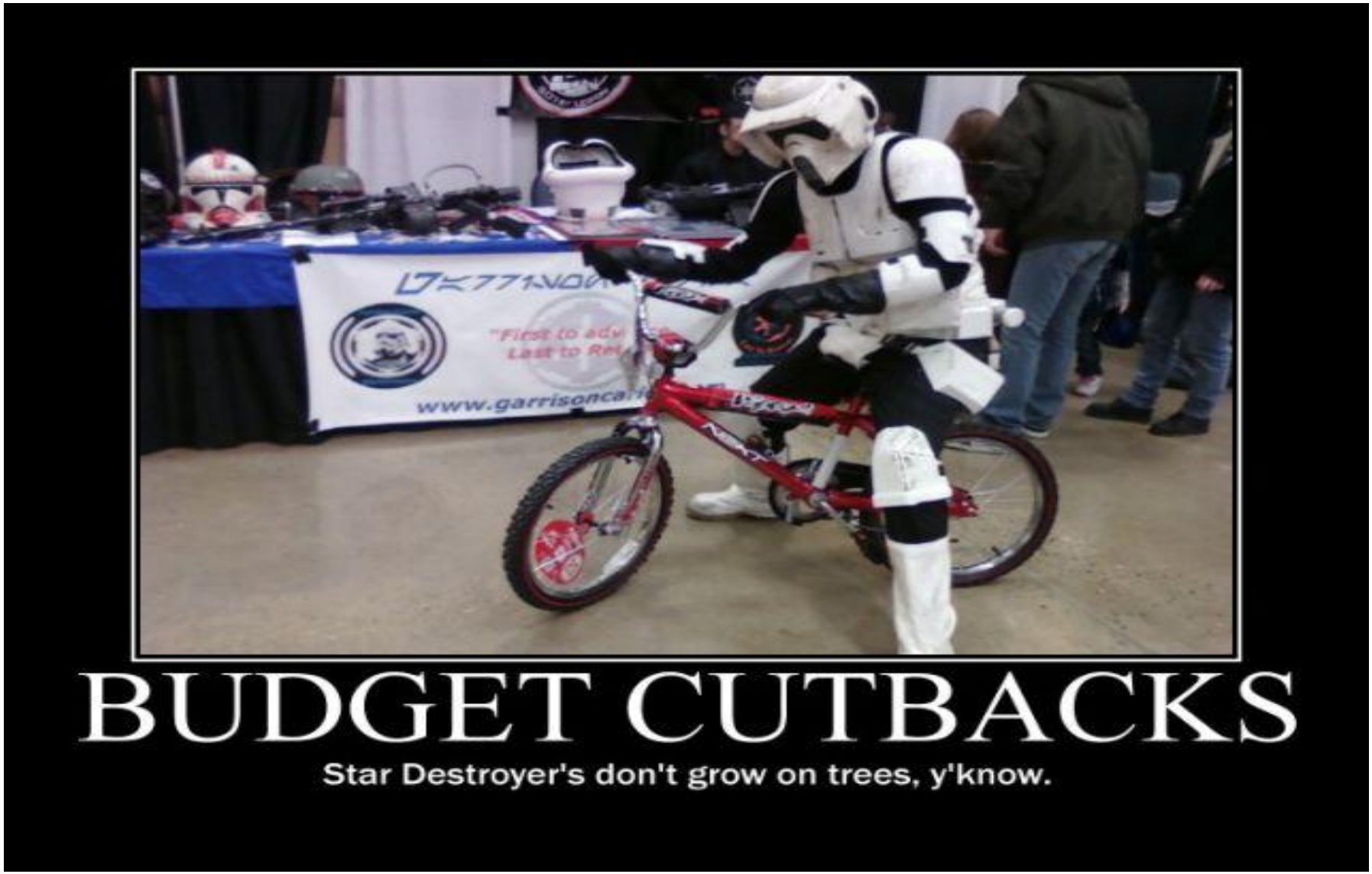
- On the 27th September 2013 EIOPA published its final guidelines for the preparation of Solvency II comprising :
  - System of governance
  - Forward looking assessment of own risks (based on the ORSA principles)
  - Pre-application for internal models
  - Submission of information to National Competent Authorities (NCAs)
- The guidelines apply from 1 January 2014 even if gradual application over 2014 and 2015
- EIOPA plans to issue the guidelines in all official EU languages on 31st October 2013
- NCAs then have 2 month to report to EIOPA about their intention to comply
- EIOPA is pushing to 2016 Implementation

What's happening in Europe?

1.	Approach to the Solvency II programs varies considerably by size of insurer & country – Netherlands and UK quite advanced !! Southern and Eastern Europe not as advanced. Tier 1 insurers more advanced in programs than smaller insurers
2.	The delay announced by EIOPA last year hit Solvency II projects with many frozen and budgets re-allocated - particularly Pillar III reporting projects – but now being re-energised due to latest EIOPA update!!
3.	ORSA remains a key focus though and in many countries (such as the Netherlands and UK) dry-run ORSA process continues apace for 2013. ORSA being adopted around the world
4.	Some insurers have spent vast amounts of money on their Solvency II program - with very little return thus far!
5.	Many Insurers are looking more closely at the analytical data they require for SII, IFRS and decision making purposes
6.	Larger insurers are switching their capital focus from regulatory capital (SCR) to strategic capital planning (economic capital and risk adjusted return measures) – how to run the business better

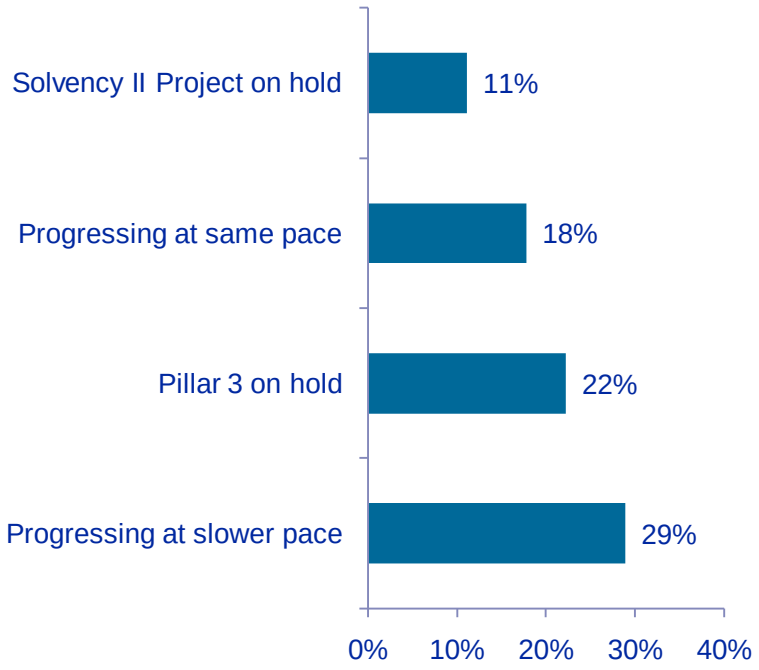
Solvency II Programs – Key Problems emerging

Data	▪ Solvency II requires huge amounts of ***analytical data*** from actuarial, finance, risk & asset systems ▪ The data comes from multiple sources & has to be aggregated and consolidated ▪ Data quality and governance framework needs to be in place ▪ Granular storage, analysis & reuse essential (***Analytical Repository)*** to support reporting and decision making
Embedding Risk Based Culture	▪ Integrating ORSA/Use Test and business planning processes ▪ Role of the CRO ▪ Capital Modelling & Scenarios for ORSA ▪ Support of Senior Management
Communication	▪ Educating Board - risks , models & scenarios ▪ Importance of co-operation between departments – e.g. IT and Actuaries ▪ Communication Program
Resources	▪ Lack of skilled resources internally ▪ Reliance on consultants ▪ Local regulators also lack skilled resources
Business Benefits	▪ Risk and Capital metrics and measures to run the business ▪ Reporting Processes ▪ Management Actions


BUDGET CUTBACKS
Star Destroyer's don't grow on trees, y'know.

Due to the delay many firms have put projects on hold and frozen budgets, some continue towards their original deadline

How has the delay impacted your Solvency II project? (% of respondents)



29% of survey participants progress slower than before

Face issues to progress as budgets have been frozen due to the uncertainty about final rule an timetable

22% of respondents have put Pillar 3 projects on hold

- They have left Pillar 3 for the final part of the implementation instead of addressing the requirements with an end-to-end approach
- Underestimate the work that is required to satisfy quantitative and qualitative reporting requirements

Others are progressing at same pace (18%)

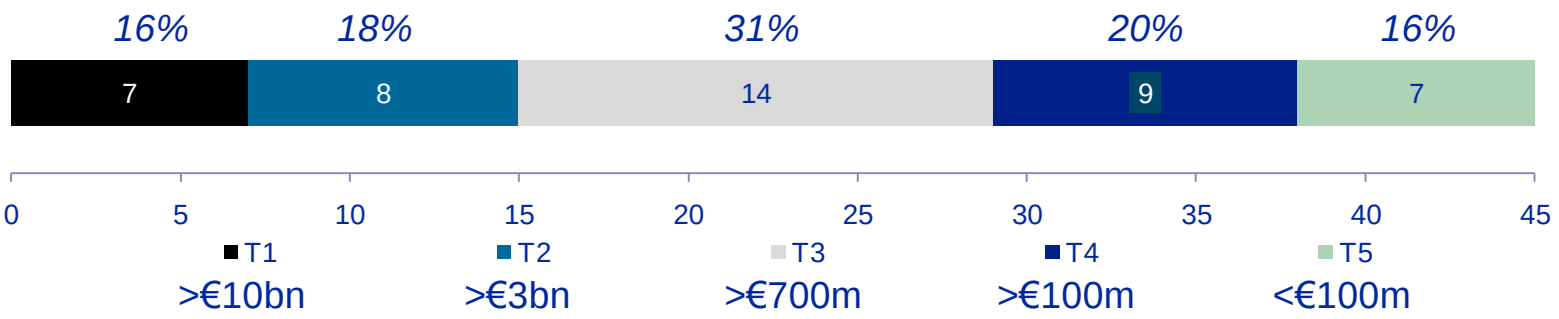
Continue working towards their original project timelines as reducing efforts may entail higher overall costs

Few have put their Solvency II projects on hold (11%)

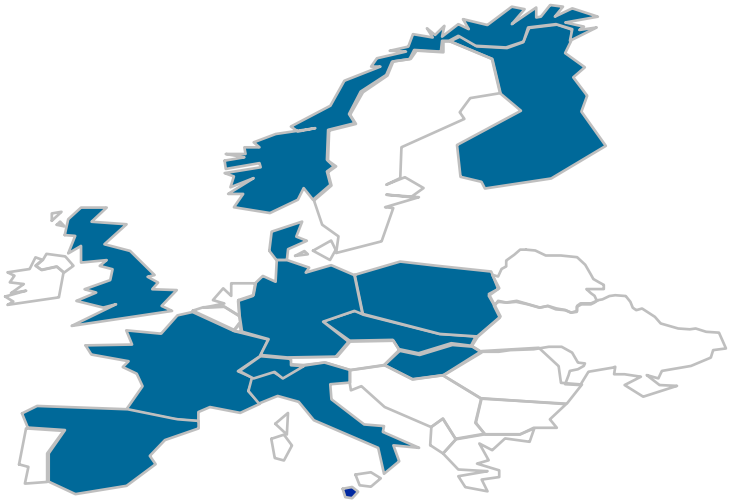
Stopped working on Solvency II until final requirements are issued

Moody's Solvency II Survey

Survey conducted with 45 insurers of all sizes across Europe



Geographies Covered
UK
Germany
France
Italy
Spain
Denmark



Geographies Covered
Finland
Norway
Switzerland
Czech Republic
Malta
Slovenia

Key Themes to Emerge (1)

1. Standard Formula is the preferred approach	Most Insurers **(58%)** in the survey are currently adopting a Standard Formula approach due to lack of resources and cost - the ***exception*** being Tier 1 Insurers
2. Small trend towards partial or full internal model	**Eight** Insurers indicated that at a future date they will move from a standard formal to a partial or full internal model at a future date
3. Few insurers are ready to comply	Only **24%** of Insurers stated that they were ready to comply with SII – most were only around **50%** through their programs
Pillar 2 is the current area of focus	The majority of insurers are currently focussing on Pillar 2 initiatives with Pillar 3 a lower priority

Key Themes to Emerge (2)

5. France is most advanced	Surprisingly **France** was the most advanced in SII preparedness with UK, Switzerland and Germany close behind
6. CRO's and CFO's are the main sponsors	**52%** of SII projects were sponsored by CROs and **26%** by CFO's
7. Increase in staff numbers	**67%** of insurers interviewed had to increase staff to address Solvency II Risk Management the recruiting focus
8. Lack of local regulator support	**93%** of insurers stated that support from local regulators was poor and they had expected a greater degree of help

Key Themes to Emerge (3)

9. Improved Risk Management

Thanks to Solvency II insurers have strengthened their risk organizations and the underlying technology **(32%)**

10. Business Benefits

Better decision making and capital planning, improved data management, capital savings or better management of third party expectations are key benefits perceived

Data is the Number One Problem for many Insurers

Solvency II Data

- Actuarial
- Asset
- Finance
- Risk

64 QRT templates alone have 10,000 plus fields

Much of the data has to be transformed and ..... exists in Excel spreadsheets

Quantitative and Qualitative has to be combined for the SFCR, RSR and ORSA

Data has to be:

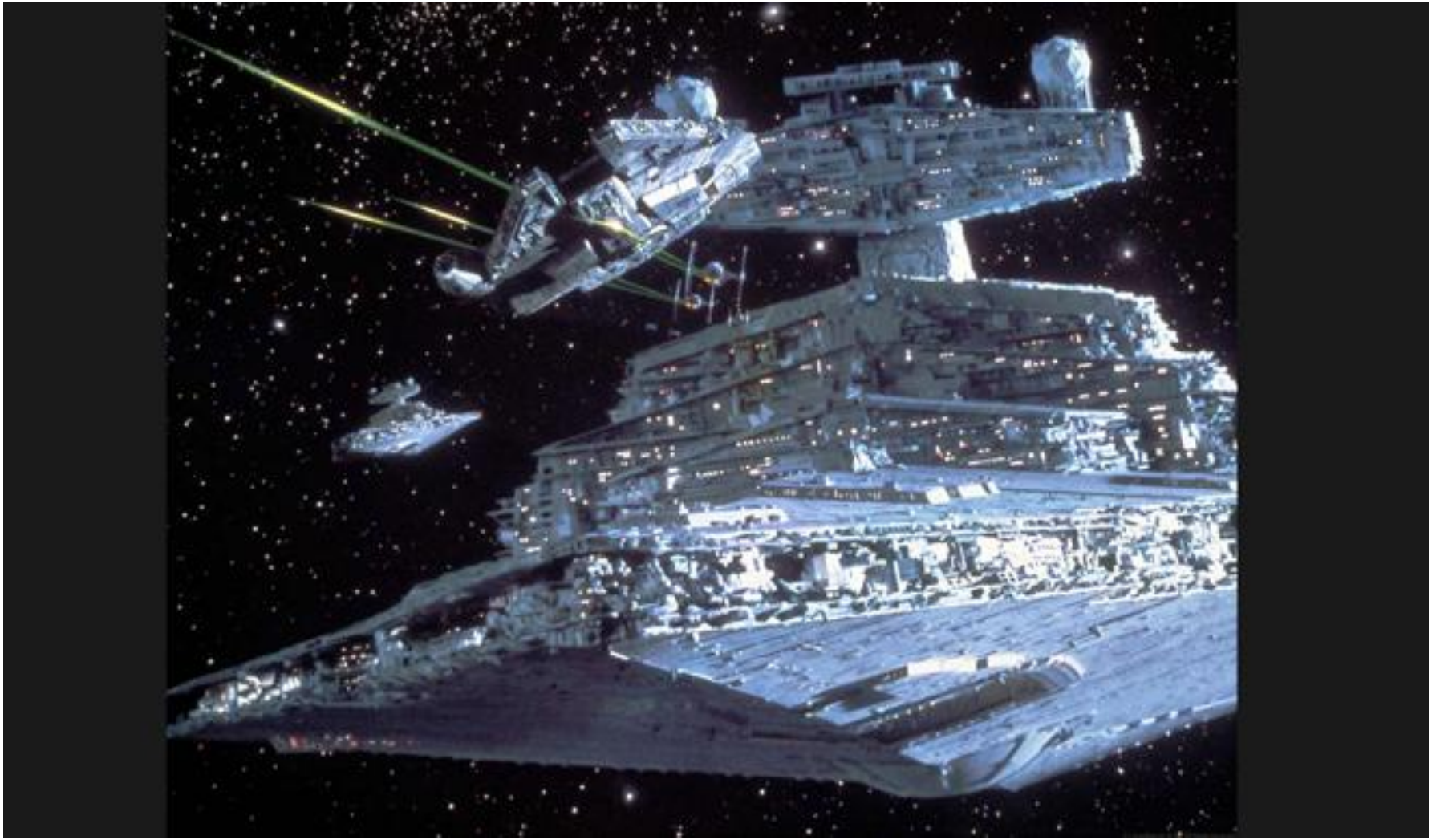
- Extracted & Transformed
- Validated & Approved
- Meet Quality Standards
- Fully Auditable with full lineage

- SII reporting
- IFRS Reporting
- Business Benefits

Practical Data Problems

1. EIOPA	Still waiting final EIOPA (Omnibus II) and local regulator requirements – e.g. finalisation of QRT templates
2. Asset Data	Getting asset data from Asset Managers in the right format and level of granularity with appropriate "look through" (D1-D6 templates) is a major issue
3. Actuarial Data	Extracting and transforming data from actuarial systems such as MoSes, Prophet, Igloo & ReMetrica and feeding into reporting systems is difficult - e.g. an insurer may have 100s of actuarial models to distil
4. Decision Making information	Defining additional data, performance measures and reports to support the Use Test and Business decision making process – e.g. new capital measures, SRC projection etc
5. Aggregating data from solos to group	Aggregating analytical data from a range of solo entities each of which, typically has its own architecture, tools and systems can be a complex, laborious process
6. Low Data Quality in source systems	Most insurers struggle with poor data quality and a proliferation of ill defined data held in multiple "silos" . Insurers often have multiple policy administration & finance systems with no common data/metadata models.

Solvency II Technology Platform



Analytical Data & Reporting Needs of Insurers

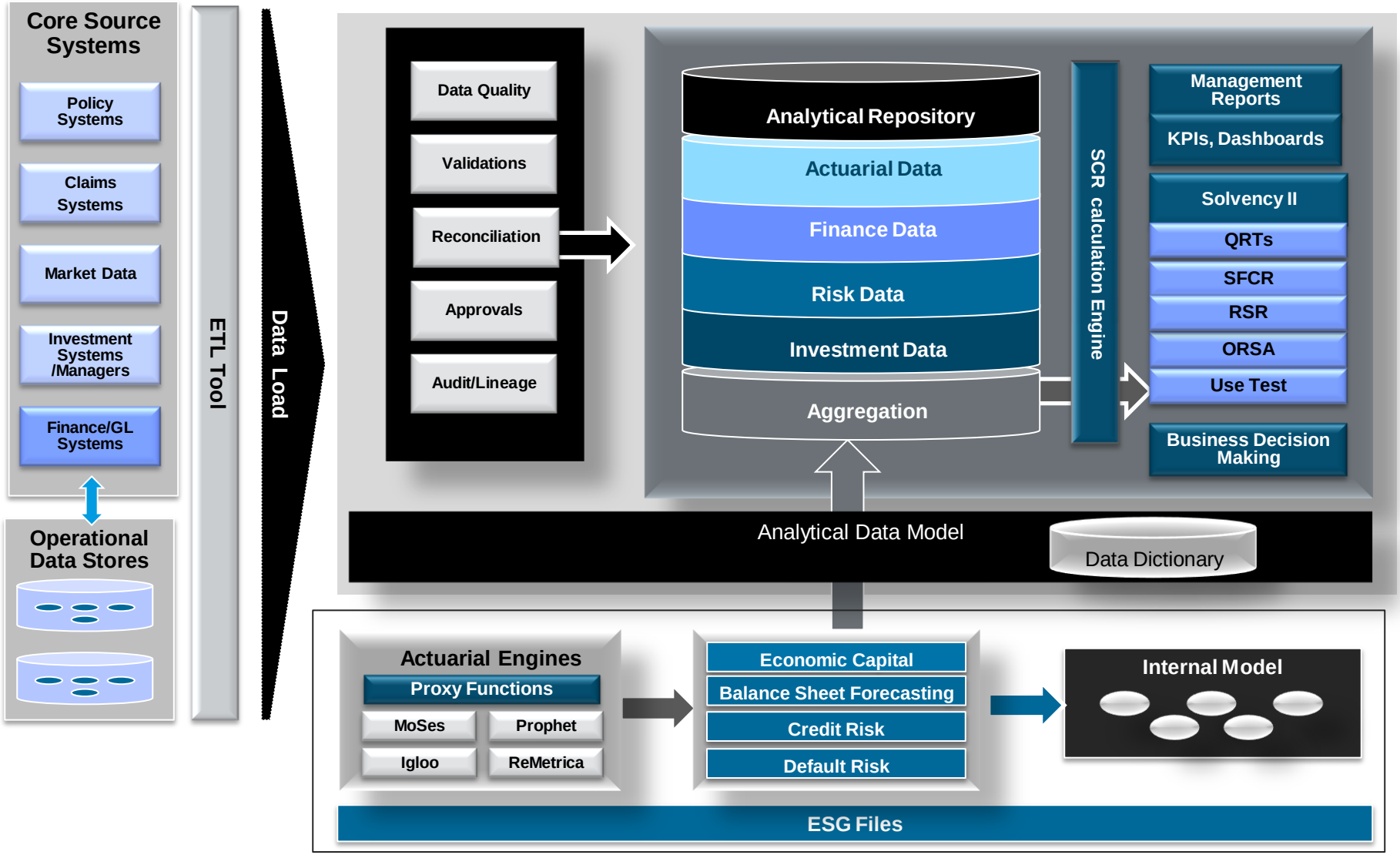
Analytical Data Needs

- Analytical data model with high degree of granularity
- Automated ETL processes
- Improved data quality
- Centralized analytical repository for SII, Risk, Finance, Actuarial & Investment data
- Audit, security and lineage capabilities
- Data "lock-down" and approvals
- Replacement of spreadsheets
- Enterprise deployment

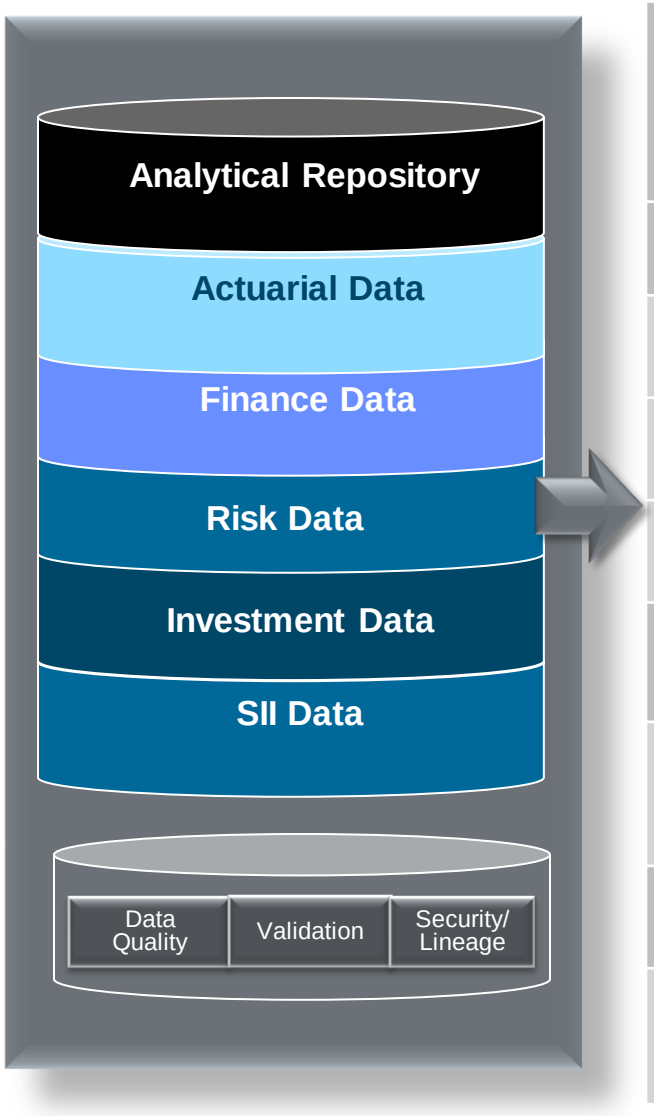
Business Reporting Needs

- Faster reporting close cycles
- Automated reporting processes
- Consolidation and calculation routines for QRTs - SCR/MCR/Risk Margin etc.
- XBRL generation
- Consistency and integration of external reporting (e.g. SII, IIFRS, MCEV etc)
- Economic Capital & Risk Based Return Measures (RBRM)
- Graphical and analytical reports for the regulators and the business
- Faster, controlled production of accounting reports – e.g. inputs to IFRS, GAAP statements

Typical Risk/Capital Architecture

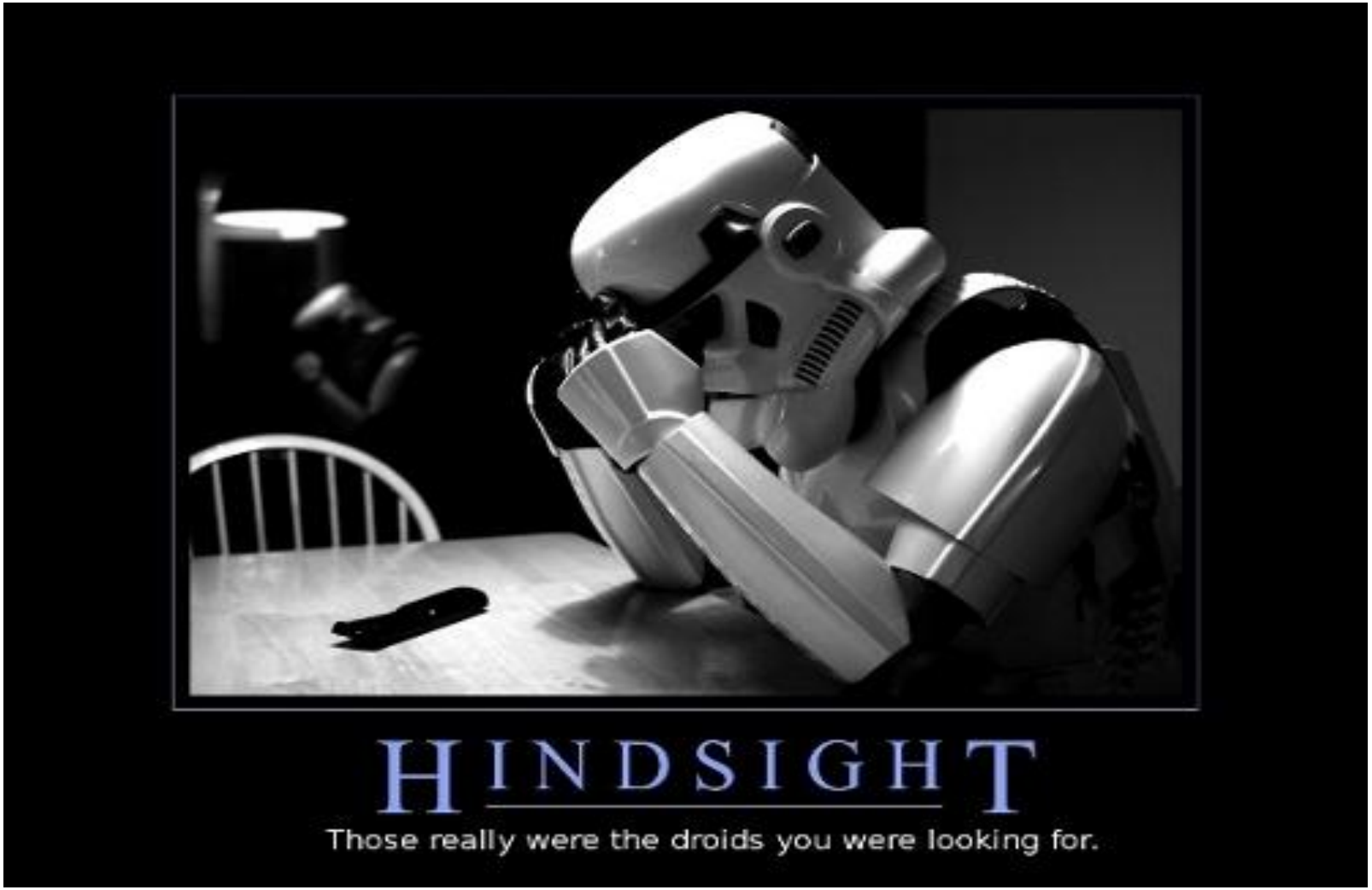


Analytical Repository



Key	Features
1.	Logical & physical data models for all types of insurance ***analytical data*** **–** SII, Actuarial, Asset, Financial and Risk data that can be easily customized for the uniques aspects of an insurer
2.	Data staging and Results areas for managing and approving data
3	Modular design for easy integration into existing risk, actuarial & finance systems & infrastructures
4.	Data Mart structure within the repository supports phased implementation
5.	Analytical data dictionary (for minimum SII & IFRS) to meet EIOPA requirements
6.	Integrated data load and data quality/validation tools to automate the data process flow and reduce manual intervention
7.	Data process and reporting workflows with approvals and lock-down capabilities . In-built with data lineage, look through and audit capabilities
8.	Integrated calculation engine for the generation of cash flows and stress tests or take feeds from existing actuarial engines
9.	Scalable to enterprise level and deployment across multiple entity structures

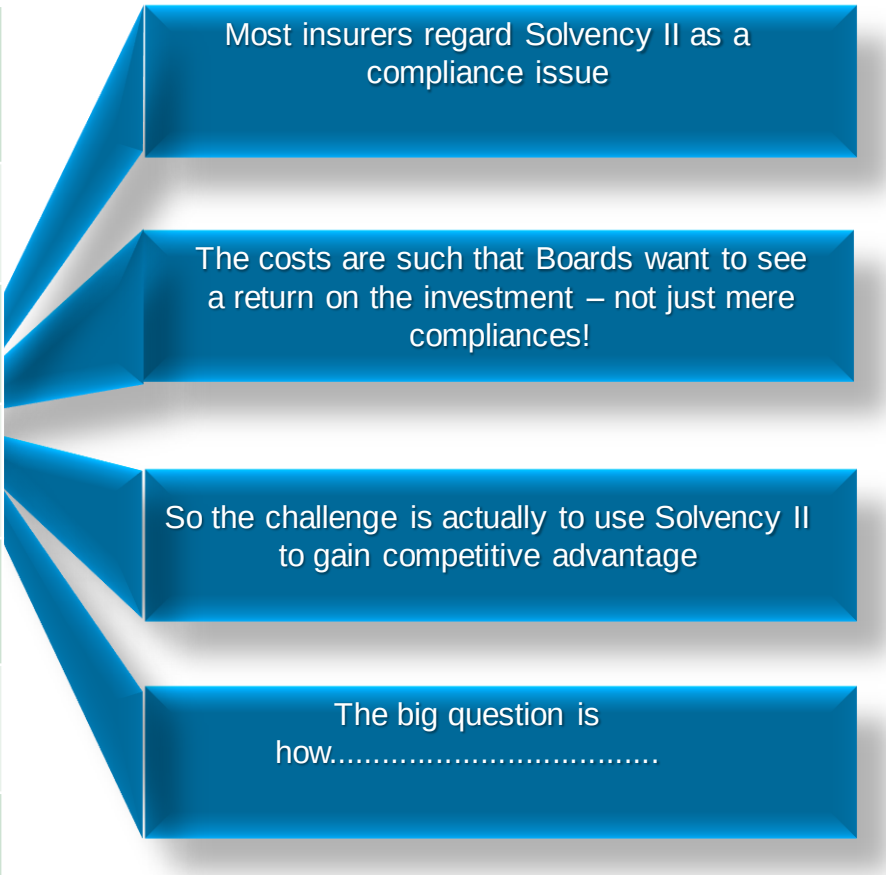
Solvency II – Possible Business Benefits



Solvency II Business Benefits

Driving tangible business benefits from a Solvency II program is a major issue

Business Benefits	
1.	Better understanding of ***"risk "*** within the business and Risk based return measures – RAROC, RORAC etc
2.	Optimization of reinsurance & alternative risk transfer mechanisms
3.	Cheaper access to capital and more profitable capital allocation
4.	Competitive advantage through profitable product & pricing strategies
5.	Investment & Hedging strategies
6.	Mergers, acquisitions and expansion strategies
7.	Maintaining adequate ratings status

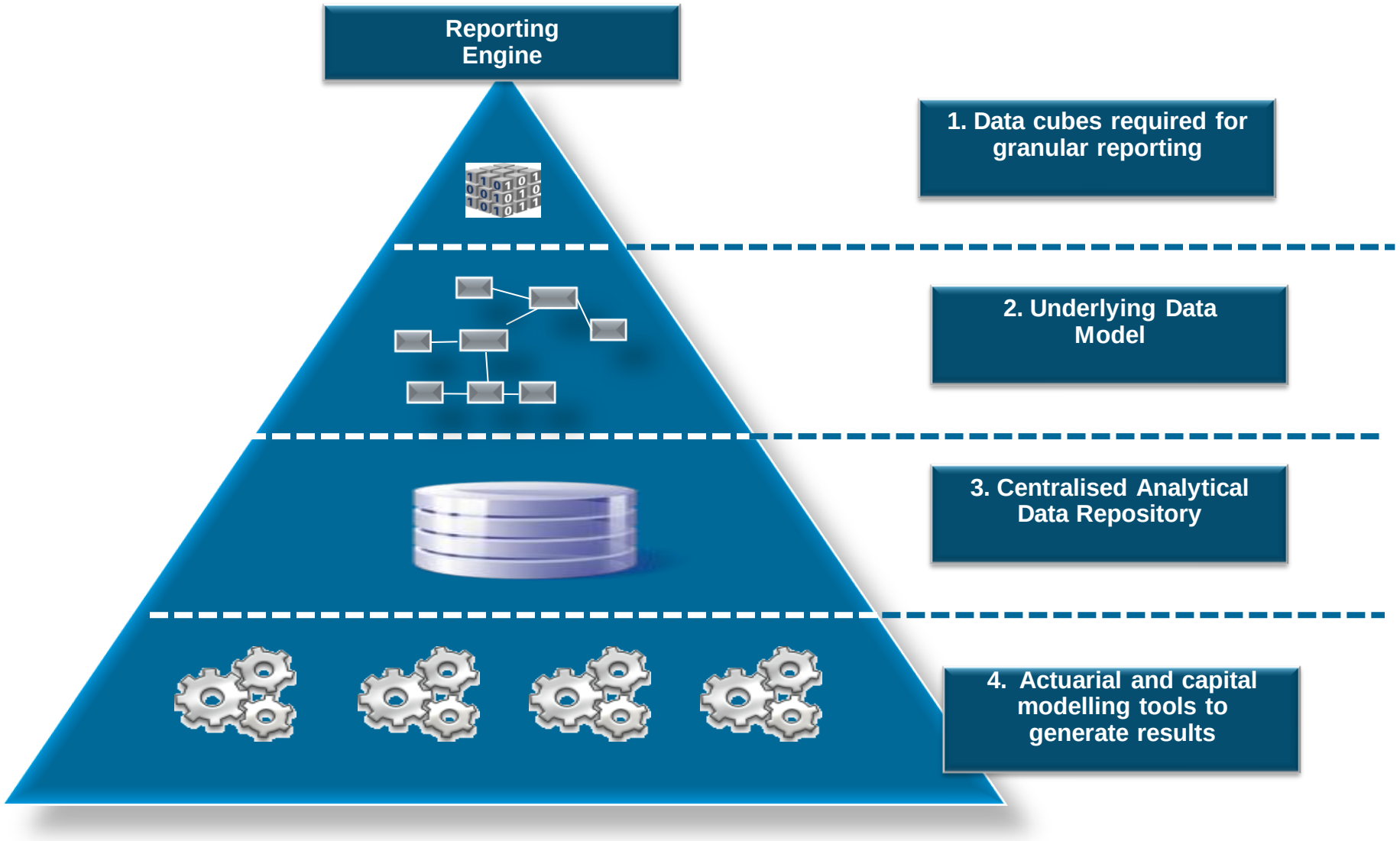


Solvency II Business Benefits are driven by...

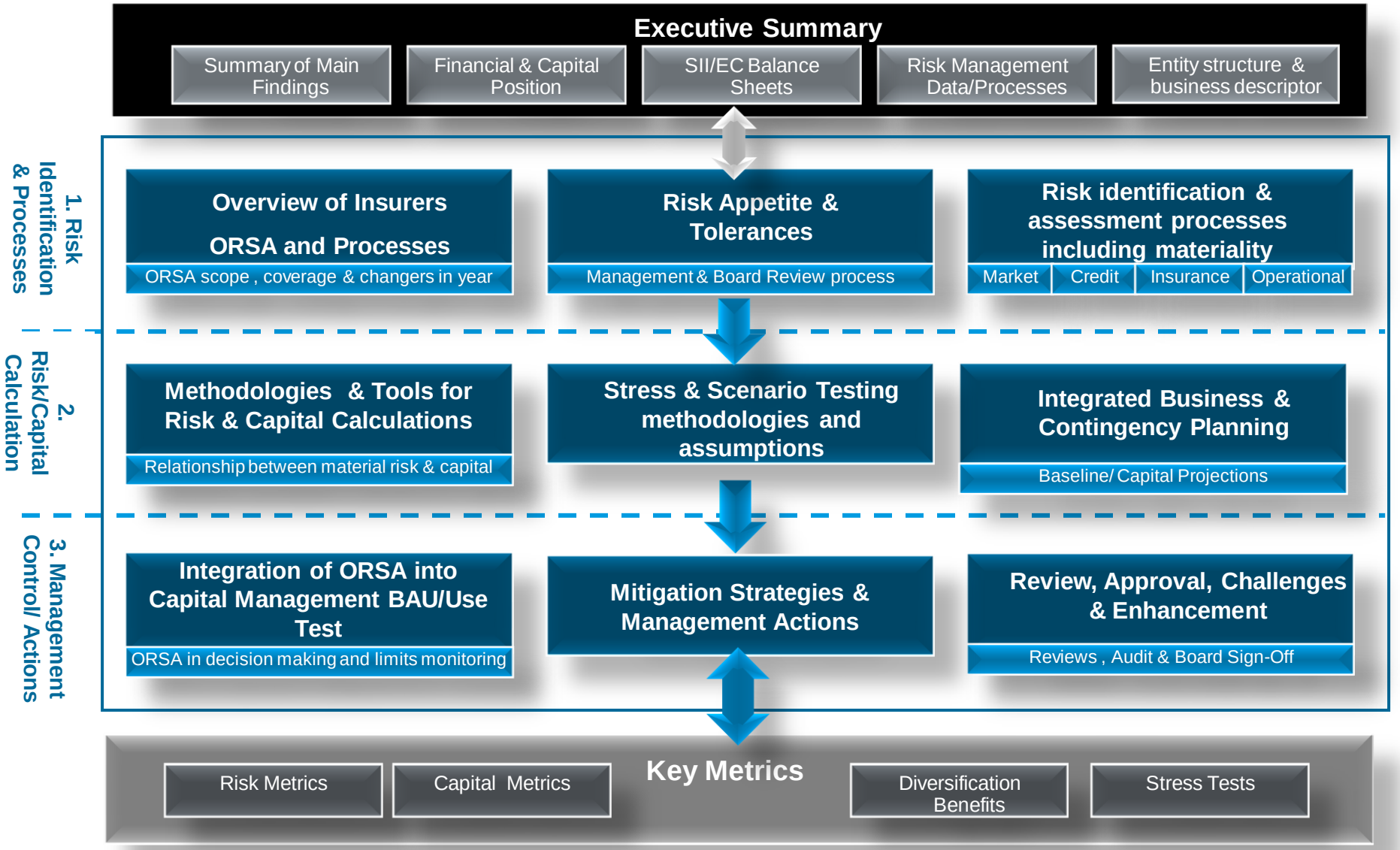
Better Data	
1.	Determine what data is needed for business and regulatory reporting and the level of granularity required
2.	Focus on Actuarial, Finance Asset & Risk data - ***Analytical Data***
3.	Improve the quality of data with data quality and profiling tools
4.	Implement a data quality framework - required by ORSA
5.	Store data in a well designed data repository that handles the level of granularity needed
6.	Develop OLAP cubes that provide the multidimensional views to support reports and dashboards
7.	Design management dashboards with appropriate drill-through capabilities

Better Actuarial Modelling	
1.	New, more complex and larger actuarial models
2.	Improved processes and controls around actuarial modelling and increased computing power HPC grids etc....
3.	Utilize Proxy Functions for quicker more frequent modeling runs
4.	New economic capital models and modelling capability to perform: ▪ Economic Capital ▪ What-If Analysis ▪ Hedging Strategies ▪ Acquisitions/Mergers ▪ Investment portfolio optimisation
5.	Macro-economic scenarios for Balance Sheet projection (ORSA)

Data & Capital Modelling Process



Link with ORSA



Questions