

The impacts of digital transformation in risk management

Synergies between “Big Data” and Risk Data Aggregation: great potential or lost opportunity?

Giovanni Paganini



Agenda

 **Introduction**

 **Is it a matter of Big Data or simply 'Data'?**

 **Data Governance: a needed step forward**



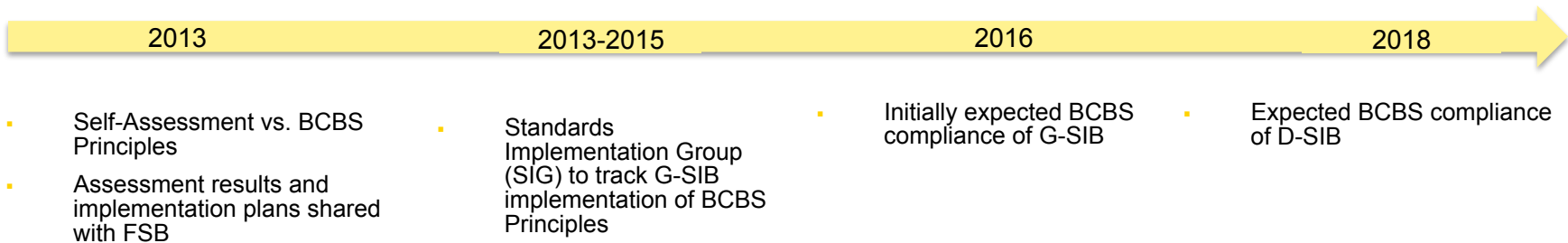
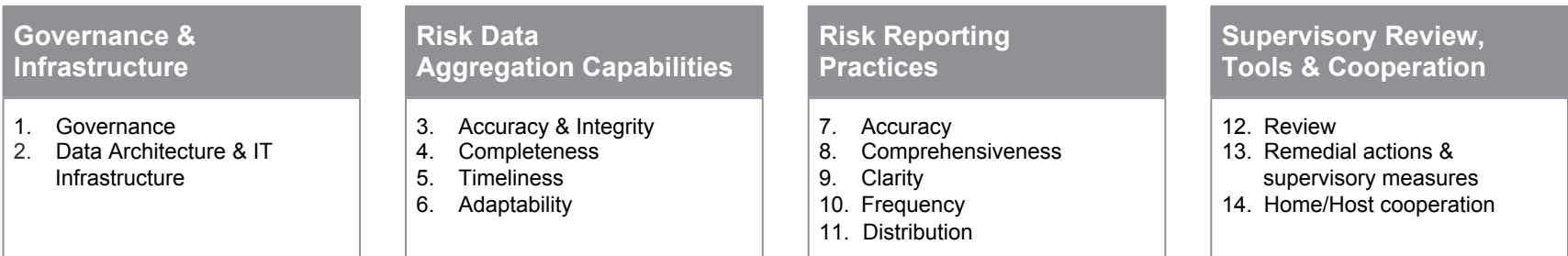
Introduction

Introduction and Background

BCBS 239 Principles for Risk Data Aggregation

- In January 2013 the Basel Committee on Banking Supervision issued the Principles for Effective Aggregation of Risk Data and Risk Reporting.
- Principles aim at rectifying the inadequacies in the IT systems and data architectures of many banks which came to light during the financial market crisis that began 2007.
- The objective is to enable global and domestic systemically important banks to provide timely, complete and accurate risk data at a consolidated level through more advanced analytics, aggregation and reporting capabilities.
- The 14 underlying principles are classified under the following 4 categories:

Principles for risk data aggregation



The principles, summarized

At a first glance, the 14 principles appear straightforward and basic. They can be summarized by the following sentence:

“Banks should generate accurately and reliable risk data. The risk captured should be complete and up-to-date. Risk reports should be validated, comprehensive, clear , useful, delivered in adequate frequency to the relevant (internal) parties “

From the IT perspective, the second principle is crucial and not covered by the above sentence:

“A bank should design, build and maintain data architecture and IT infrastructure which fully supports its risk data aggregation capabilities and risk reporting practices not only in normal times but also during times of stresses or crisis, while still meeting the other Principles.“

But the devil is in the details:

“Roles and responsibilities should be established“ - The role of the business owner includes ensuring data is correctly entered by the relevant front office unit.“ (Tz. 34)

“Risk data should be reconciled with bank’s sources (including accounting data where appropriate)“ (Tz. 36c)

“Wherever a bank relies on manual processes and desktop applications (...) it should have effective mitigants (e.g., end-user computing policies and procedures) .“ (Tz. 36b)

“A bank should strive towards a single authoritative source for risk data per each type of risk.“ (Tz. 36d)

Introduction and Background

Potential areas of change due to the principles

Control Framework

- End-to-end control framework including end-to-end testing, business attestations, etc., to drive executive accountability and the need for high quality, forward-looking reporting.

Data Quality

- Understand the quality of key aggregated data which has the most significant impact.
- Ensure data issues are remediated via the wider governance process and individuals are clear on their data accountabilities

Organisational Structure

- Adjust organisational structure to data driven business -risk, IT & data strategy needs
- Setup & integration of group-wide CDO function



Foundational Data Architecture

- Enhance data architecture to integrate Risk and Finance data, not only to improve reconciliation between risk and accounting data, but also to inform decision making.
- Build infrastructure that scales to support the firm's response to ad-hoc requests in a timely manner.

Governance and Accountability

- Ensure the Board defines its own reporting requirements and have access to enterprise risk reports to support decision making.
- Confirm the CRO's ownership and responsibility of enterprise risk reporting, and that there are appropriate escalation mechanisms.
- Enhance Board and Senior Management focus on data quality resulting in increased accountability of the CDO/CIO.

Risk Reporting and Aggregation

- Enhance risk reporting and aggregation capabilities to support risk appetite, stress testing, concentration management and forward looking reporting across business lines and global legal entities.

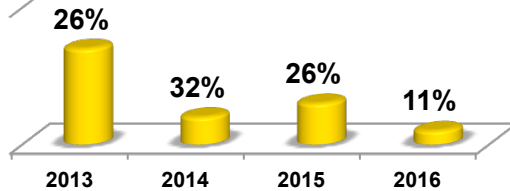
Introduction and Background

BCBS 239 Compliance - EY 'mini-survey' results

Hereafter an EY 'mini-survey' focused on initiatives in place to address BCBS 239 compliance. Benchmark is based on the current situation of 17 banks (11 of them G-SIBs).

Programme organisation and ambition

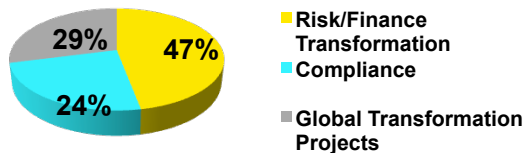
BCBS 239 Programme started by G-SIBs



- 13 (9 G-SIBs) out of 17 banks started a **dedicated programme** to comply with BCBS 239 principles.
- Other banks have integrated BCBS 239 in existing Risk and Finance transformation programmes

*Total number of responses: 13

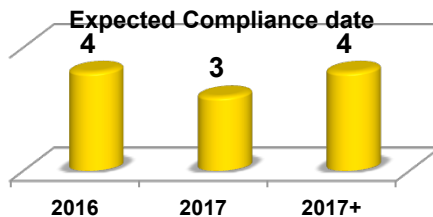
Ambition given to BCBS 239 Programmes



- Initially, compliance was the main objective of BCBS 239 Programmes
- Transformation of Risk and Finance architecture** has become a **significant** purpose of these programmes
- Some of them now encompass a broader transformation ambition

*Total number of responses: 17

Compliance date and management involvement



- A majority of the banks are **expected to be compliant in 2017 and beyond**
- The banks expecting to be compliant in 2016 are US banks, based on CCAR compliance
- 6 banks did not answer on the expected compliance date
- BCBS 239 initiatives progress is reported to the CEO, ExCo and Board
- Senior management is highly involved** in BCBS 239 Programmes
- CRO is often quoted as being the sponsor

*Total number of responses: 11

Agenda

 **Introduction and Background**

 **Is it a matter of Big Data or simply 'Data'?**

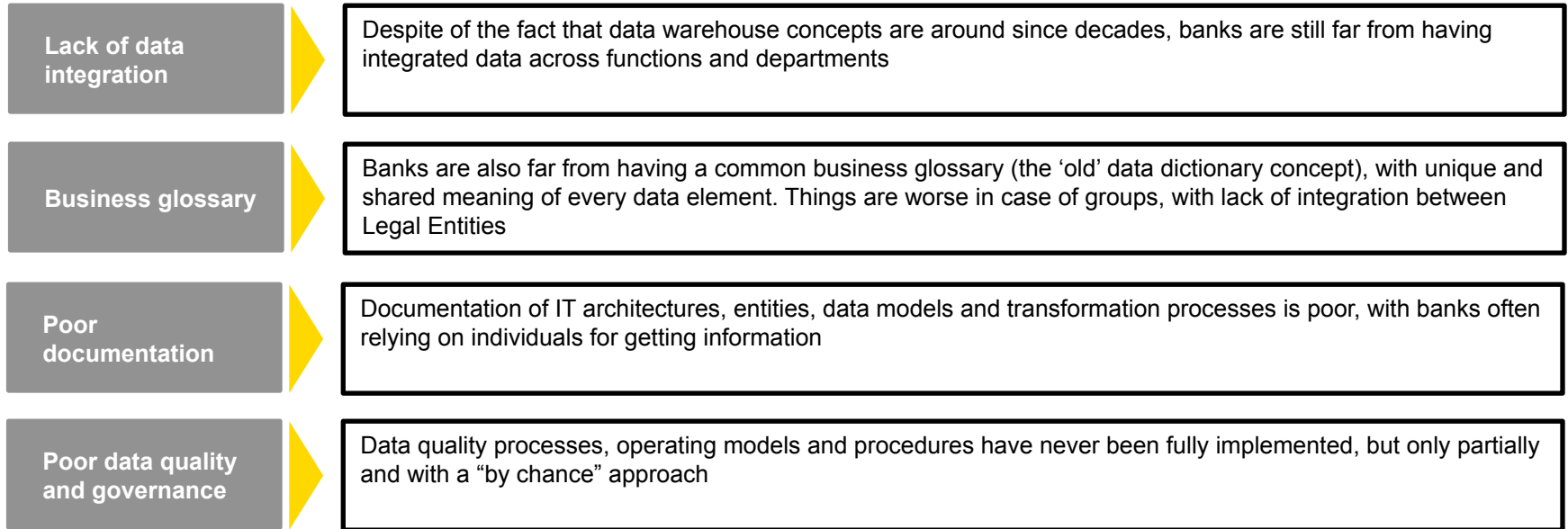
 **Data Governance: a needed step forward**



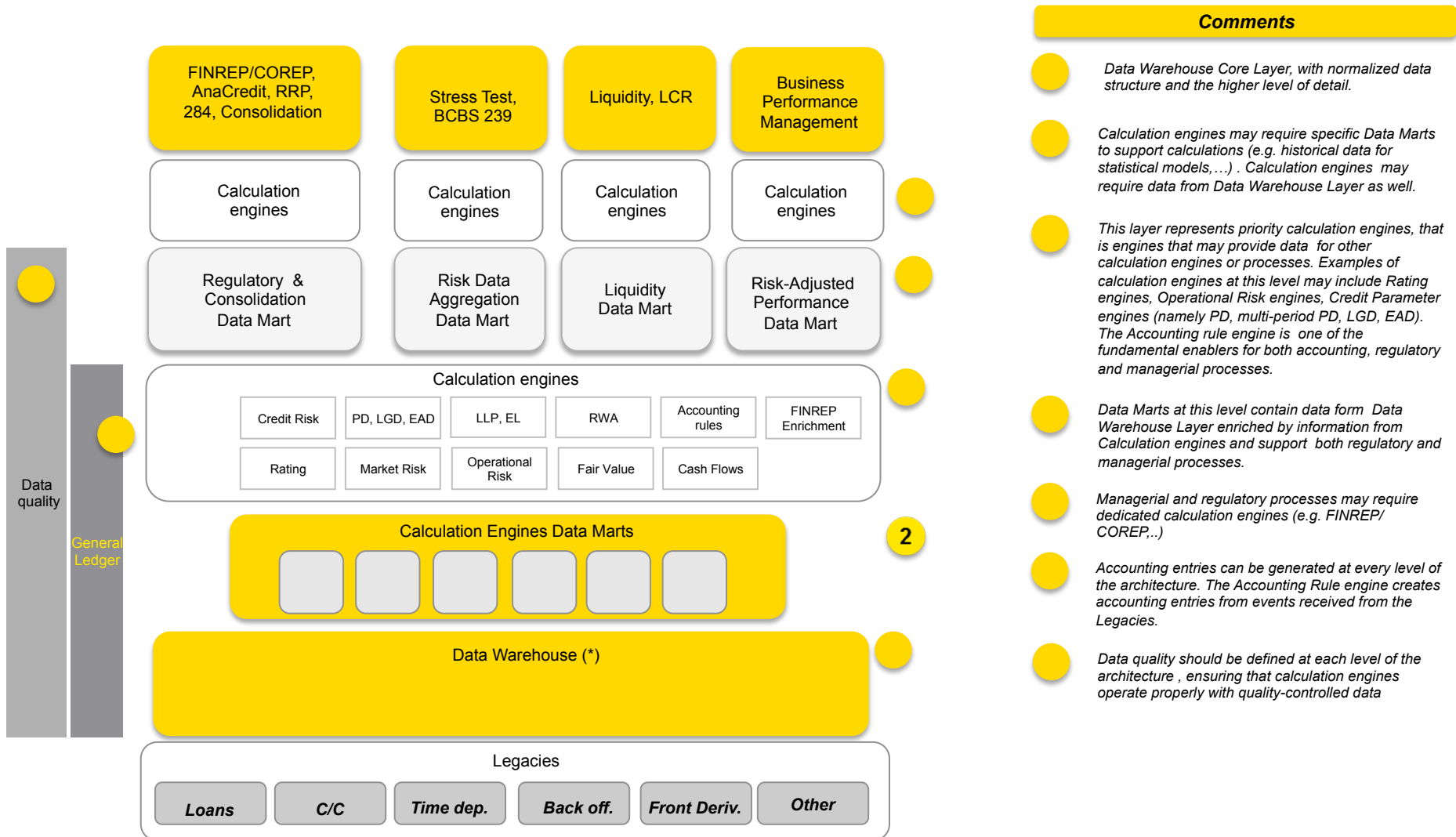
Is it a matter of Big Data or simply 'Data'?

Is it a matter of Big Data or simply 'Data'?

The AQR exercise was the first of a long series of evidences that any “exercise” required by Central Banks or Regulators is a painful process for the banks. The trend continues with Stress Test exercises and Anacredit will be probably a painful exercise as well. The current situation in terms of ‘traditional Data’ is still far from being perfect, with a lot of incoherence, data silos, lack of integration and proliferation or reconciliation procedures in place.

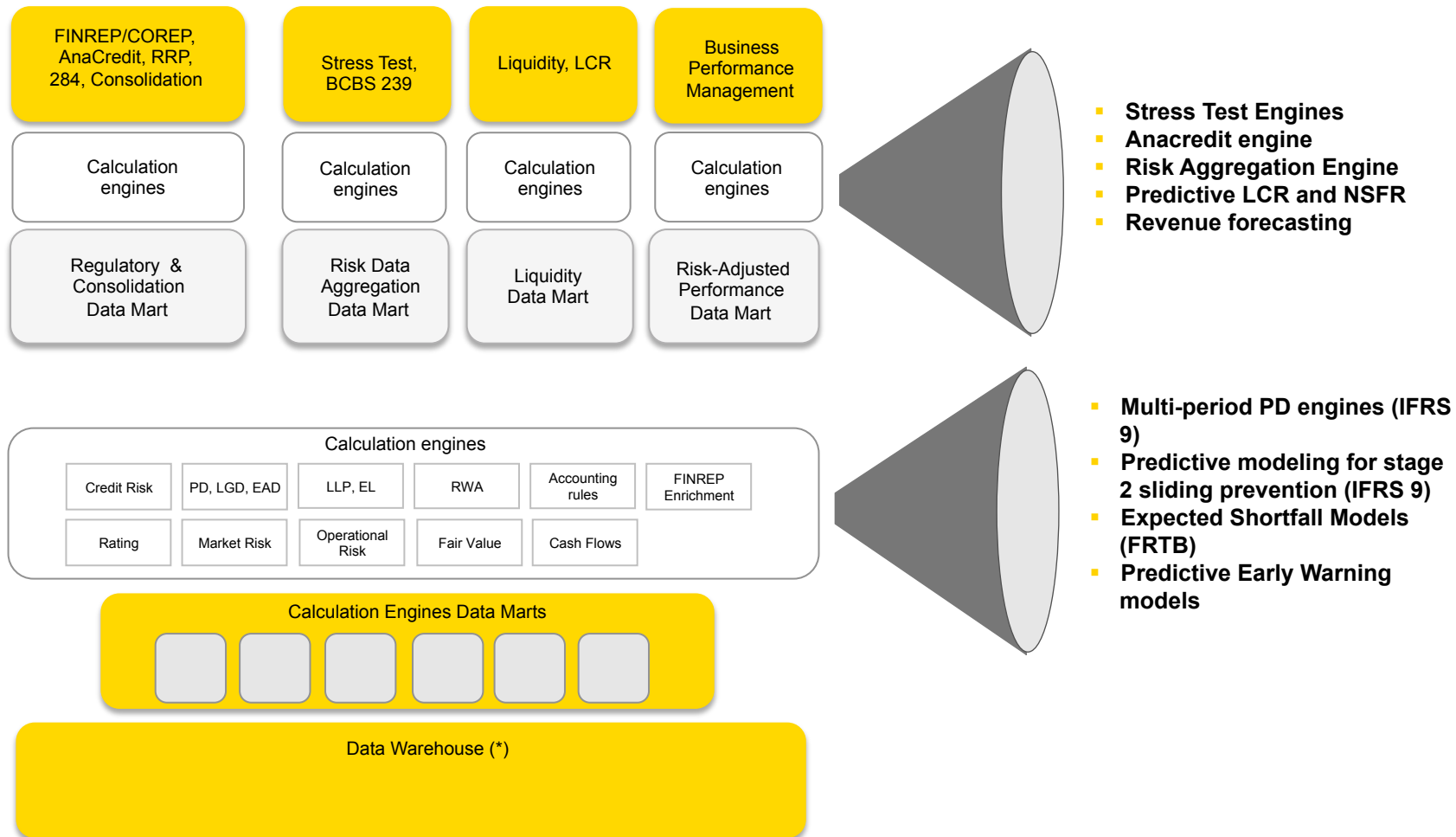


Integrated Finance and Risk architecture



Integrated Finance and Risk architecture

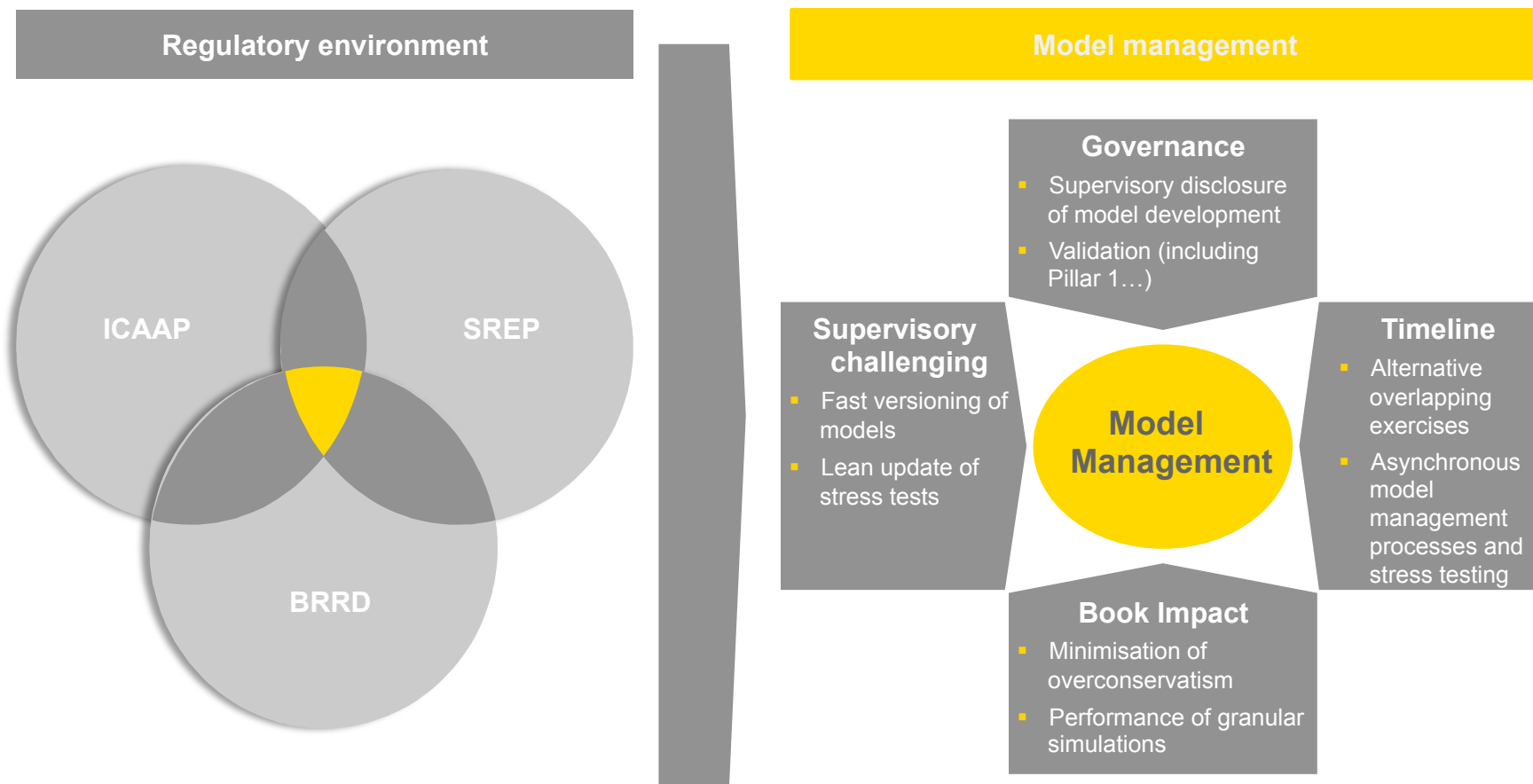
An example of new 'engines'



Model management

The need for an integrated approach and framework

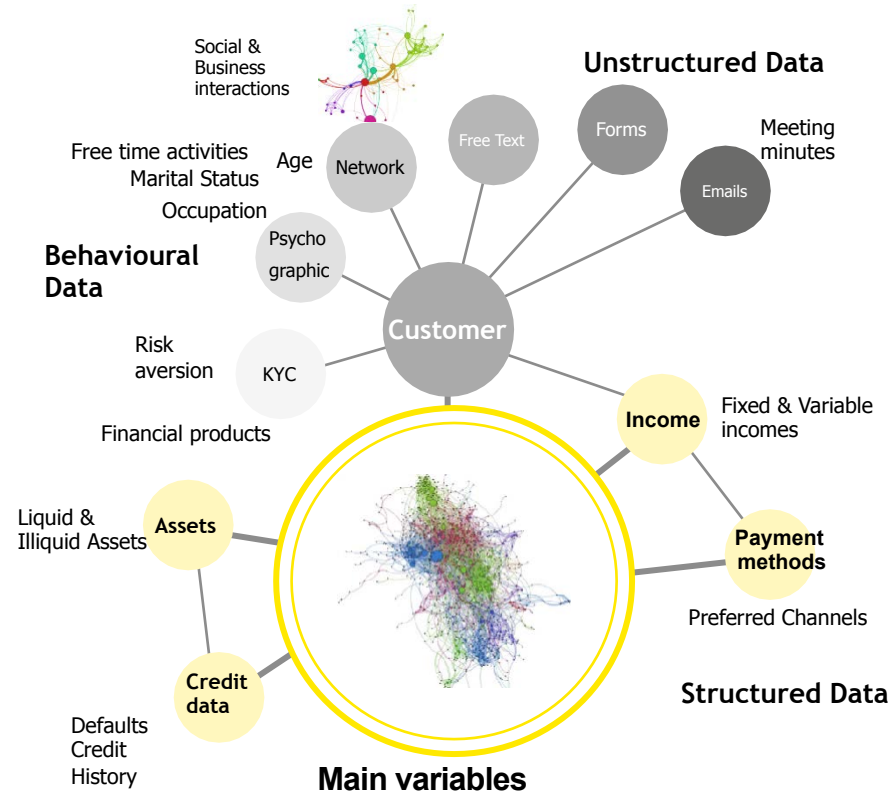
Bank should be asked to run models in order to support regulatory needs (e.g. SREP, ICAAP). An integrated approach and an integrated framework for model management is an inescapable need for banks.



Big data, analytics and risk modeling

Why Big Data? Businesses waste ca. 80% 🍏 of customer data now generated*

Despite the large exposure in the media and management literature on the importance of big data most of the customer data are currently not used in an effective ways by banks.

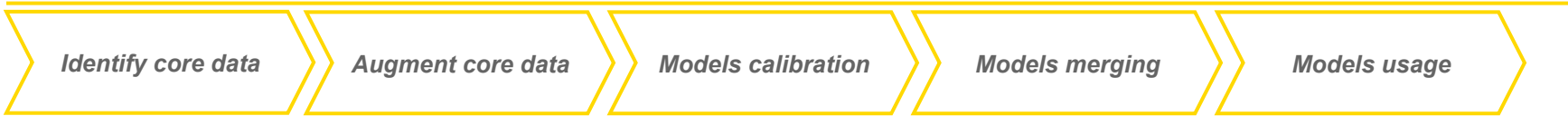


Enriched datasets provide the analyst with the necessary flexibility to assign the optimal credit risk scoring to clients

*Source: B. Schultz "IDC: Tons of Customer Data going to Waste", All Analytics Website 2013

Big data, analytics and risk modeling

Why Big Data?

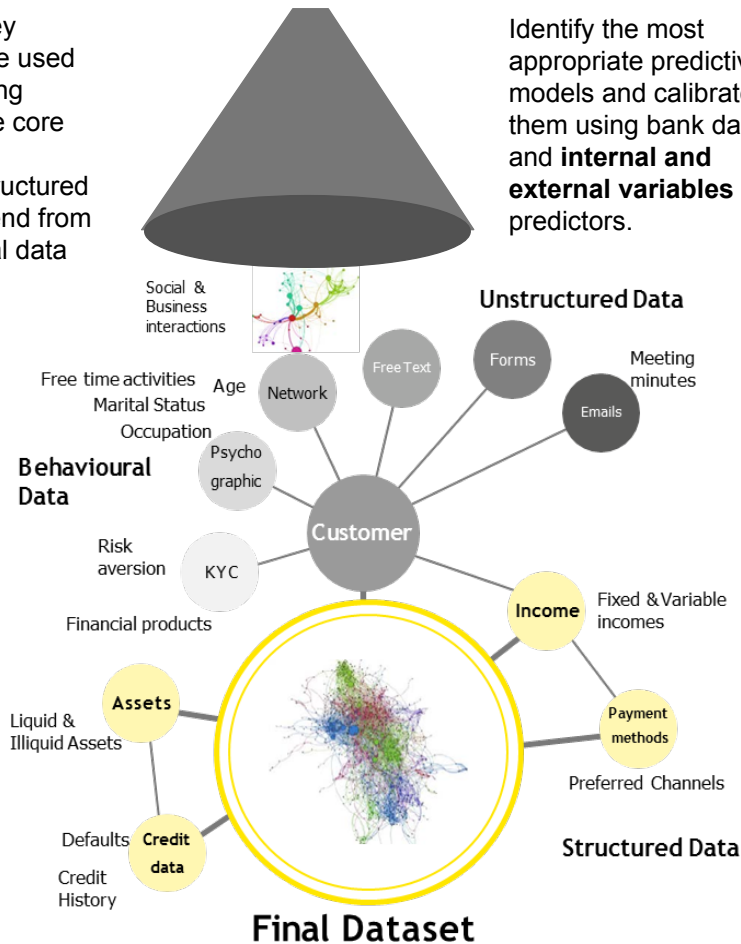


Identify the key variables to be used in credit scoring modeling. The core data contains 'traditional' structured variables taken from bank's internal data structures.

Identify the most appropriate predictive models and calibrate them using bank data and **internal and external variables** as predictors.

Combine the scores of the different models to obtain a more accurate probability of default.

Embed the model in business processes such as underwriting, credit risk evaluation, credit monitoring.



Big data and analytics

Maturity level

The evolution towards an integrated framework of big data and analytics may be organized across the following three main steps.

Risk & Regulatory Compliance

- Key driver is Regulatory Compliance
- Focus is centered on Risk Reporting
- Available resources are limited to fulfilling the requirements
- Regulatory Compliance already leads to partial efficiency improvements

Operational Effectiveness

- Key driver is a bank-wide Risk & Finance Transformation Programme beyond Regulatory Compliance
- Governance Execution through Risk & Finance Functions
- Among further operational efficiencies are the improvement of Reporting and cost reduction

Integrated Business Steering

- Key driver is data led Business Strategy - utilization of “Big Data” as a main factor in improving business competitiveness
- Governance Execution through business areas whose data requirements go beyond sheer Risk & Finance Reporting
- Major improvements of Data and Analytics create opportunities for individual analysis within the Central Data Repository

Integrated Risk & Finance Architecture

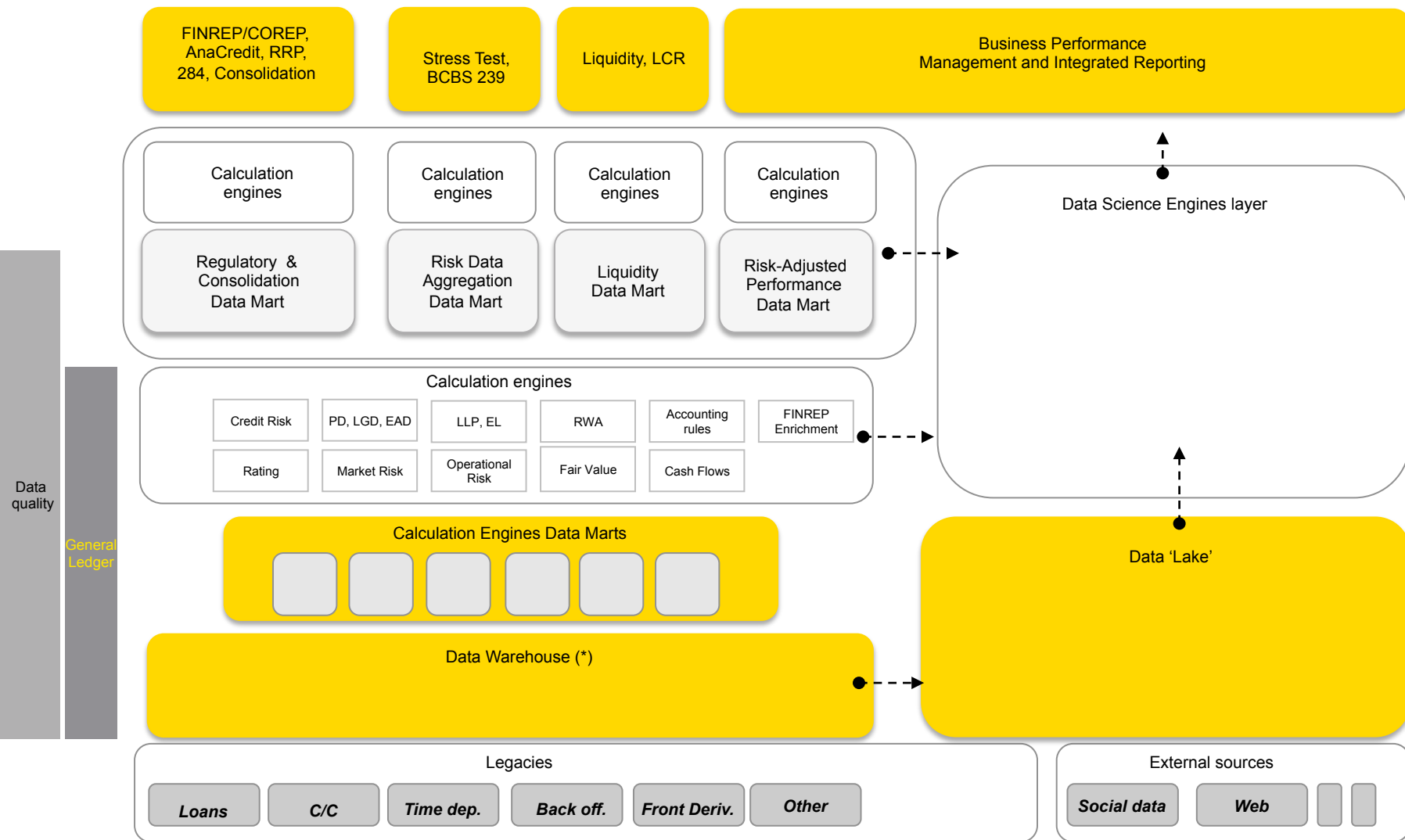
BCBS 239 Compliance

- + Fully integrated Risk & Finance Architecture
- + BCBS 239 Compliance w.r.t. the complete Reporting process (beyond Risk Reporting)
- + Overall operational optimization
- + ...

- + Central Data Repository expansion including all relevant data with respect to business strategy, governance, customers and products
- + Well advanced Data Analytics tools and capabilities
- + Further involvement of business departments in the utilization of the Central Data Repository

“Big Data”

Integrated Finance and Risk architecture



(*) Including master data

 Group layer

Agenda

 **Introduction and Background**

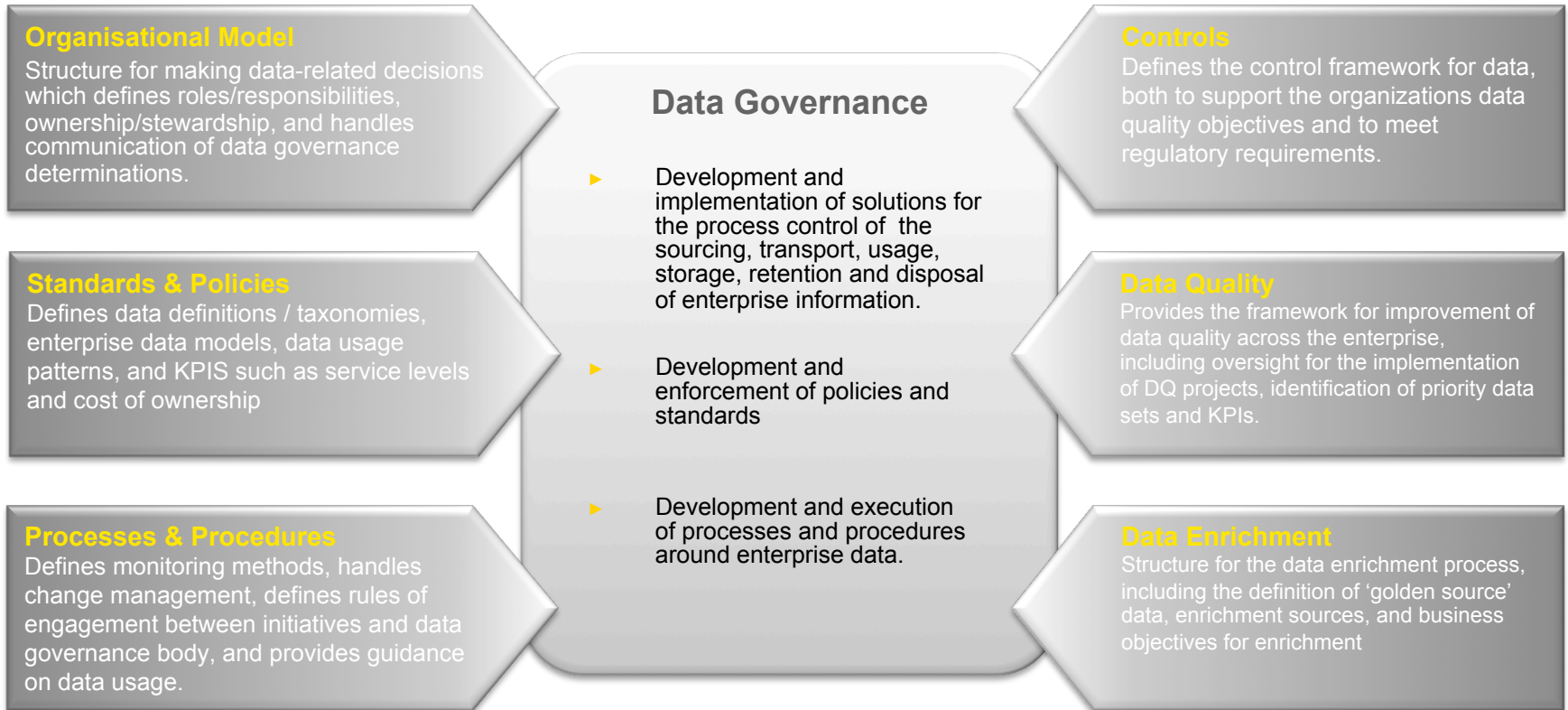
 **Is it a matter of Big Data or simply 'Data'?**

 **Data Governance: a needed step forward**



Data Governance: a needed step forward

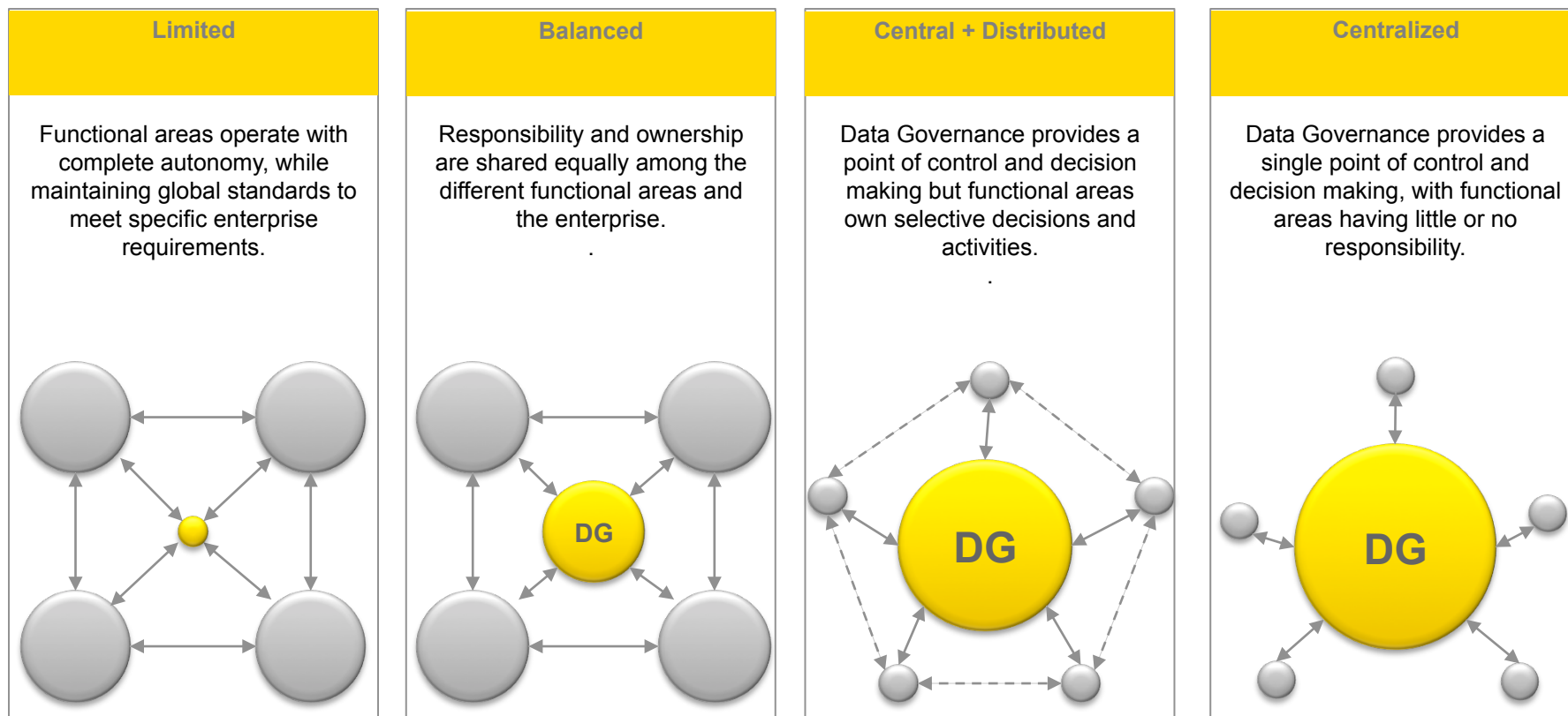
Data Governance Framework



Data Governance

Execution models variety

- ▶ There are various Data Governance organisational models – selection and implementation of the right one depends on the organisational structure and culture.
- ▶ The model can develop over time and incorporate features of different other models depending on the exact objectives of the organisation, data management maturity level and programmes of change.
- ▶ In addition, centralized capabilities are being developed to service federated data quality activities.

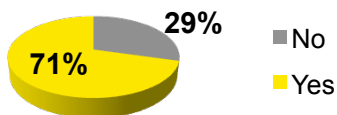


CDO Operating Model

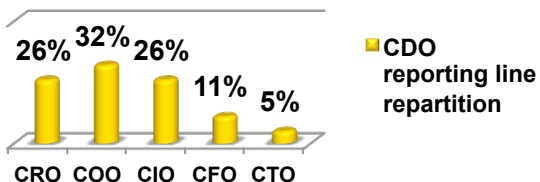
Current EY Survey results

CDO appointment and reporting

CDO appointed



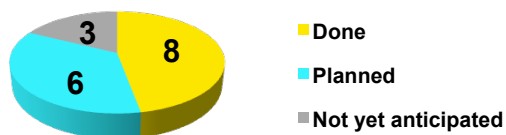
- ▶ Benchmark performed by EY demonstrates **overall mobilization** of the industry: 12 banks out of 17 have appointed a CDO



- ▶ CDO Reporting is **heterogeneous**:
 - ▶ CDOs in majority of **US banks** report to **CIO**
 - ▶ **European banks** show a trend to reporting to **COO/CRO**
 - ▶ Multiple reporting-lines possible

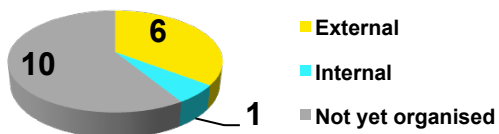
Supervisory visit and independent validation

Status of regulator's visit



- ▶ Local **supervision has strengthened in 2016** and will most likely stay on the same path (UK and US regulators have already performed on-site reviews)
- ▶ Supervisor may also perform local review at entity level
- ▶ Fines and capital add-ons could be expected

Independent validation type

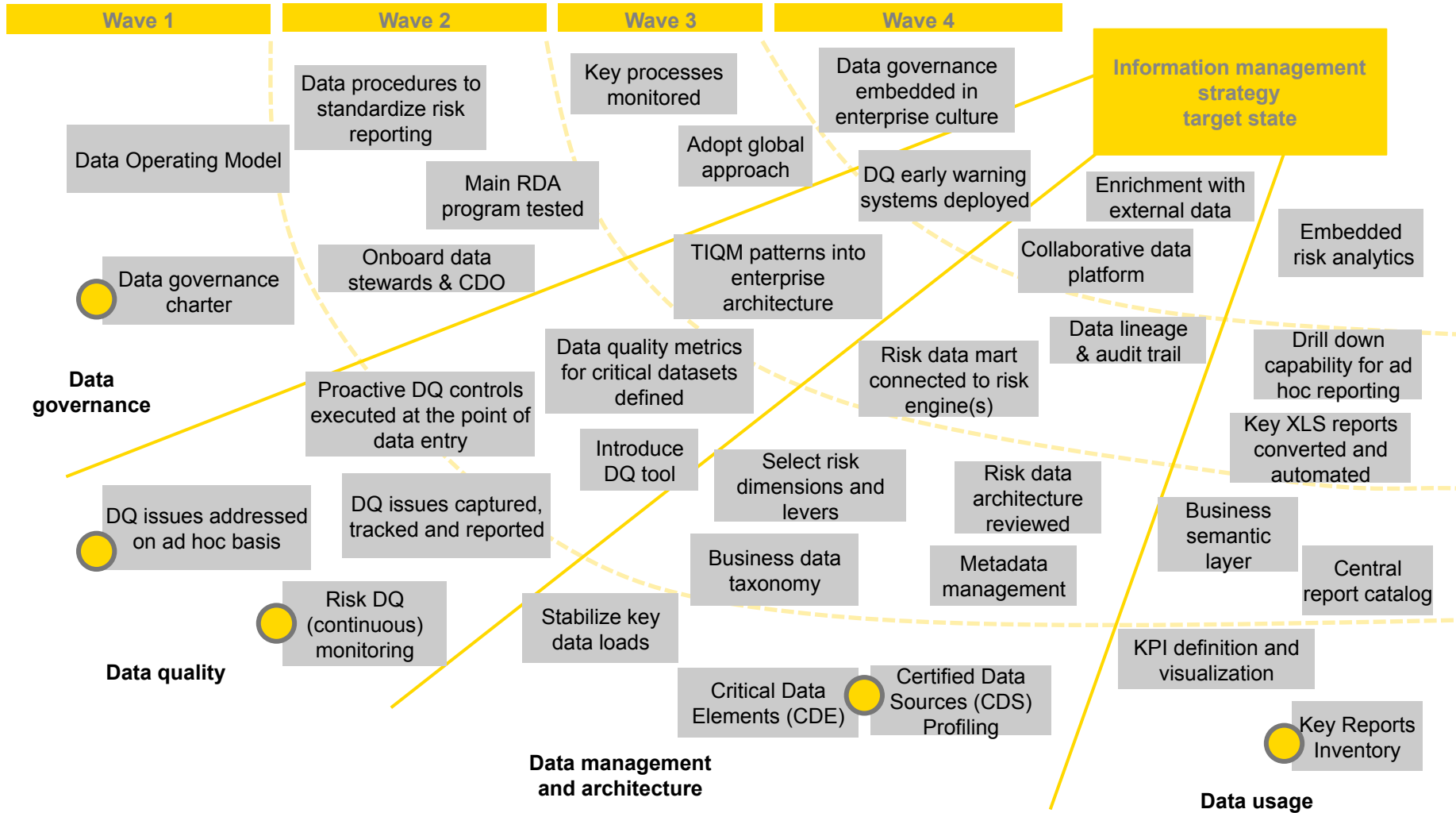


- ▶ Benchmark performed by EY shows that the **organisation of independent review is slow**
- ▶ The majority of banks which already performed one is opting for an **external** independent review

*Total number of responses: 17

Data Governance

Execution structure



Thank you!



EY | Assurance | Tax | Transactions | Advisory

Ernst & Young LLP

© 2015 Ernst & Young LLP. Published in the UK.
All Rights Reserved.

The UK firm Ernst & Young LLP is a limited liability partnership registered in England and Wales with registered number OC300001 and is a member firm of Ernst & Young Global Limited.

Ernst & Young LLP, 1 More London Place, London, SE1 2AF.

ey.com

