



Global Data Management

DAMA conference – The Case for the CDO

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thinkforward

ING 

Agenda

ABOUT ING BANK

DATA MANAGEMENT: KEY TO OUR STRATEGY

OUR REQUIREMENTS FOR THE CHIEF DATA OFFICER

HOW DO WE PAVE THE WAY FOR THE CDO

Key facts ING Bank

- ING Bank is a global financial institution of Dutch origin offering banking services. ING Bank is part of ING Group (see slide 18).
- The purpose of ING Bank is **empowering people to stay a step ahead in life and in business**. The nearly 53,000 employees of ING Bank, offer retail and commercial banking services to customers in over 40 countries.
- Sustainability forms an integral part of ING's corporate strategy, which is evidenced by ING share being included in the Dow Jones Sustainability Index (Europe and World) and the FTSE4Good Index.



Key facts

Customers



more than
33 million
private, corporate and
institutional customers

Employees



52,898

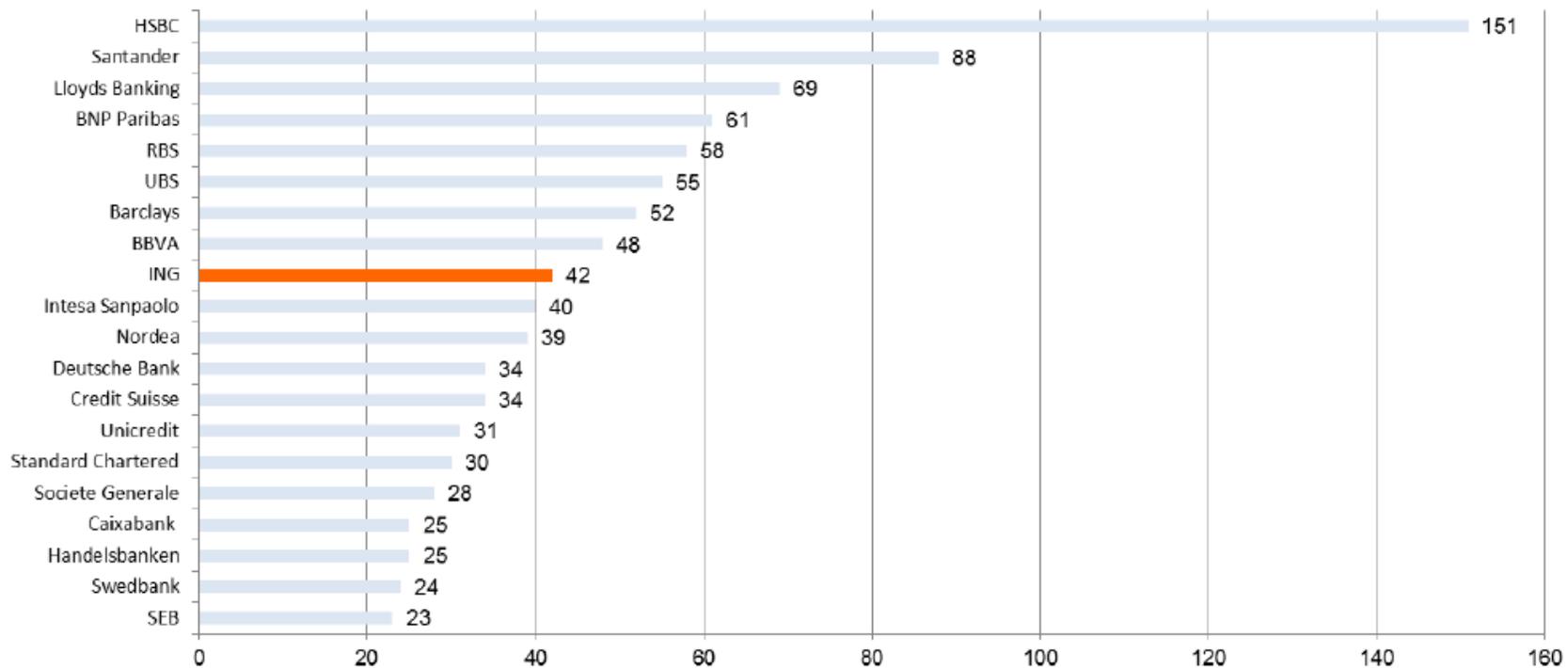
Countries



more than
40
in Europe, North America,
Latin America, Asia and
Australia

ING Bank ranks No. 9 in the Top 20 European Banks

Top 20 European Banks by market capitalisation (in EUR billion).



Source: MSCI, Bloomberg 31 December 2014

How our customers experience progress on our strategy

'Photo Transfer' for payments

ING-DiBa Germany, expanded its mobile banking app by adding an automated invoice payments solution, 'Photo Transfer', which makes money transfers easier and faster. With this new technology, customers can take a picture of an invoice using their mobile phone, and the relevant data to process the payment will be filled out automatically.

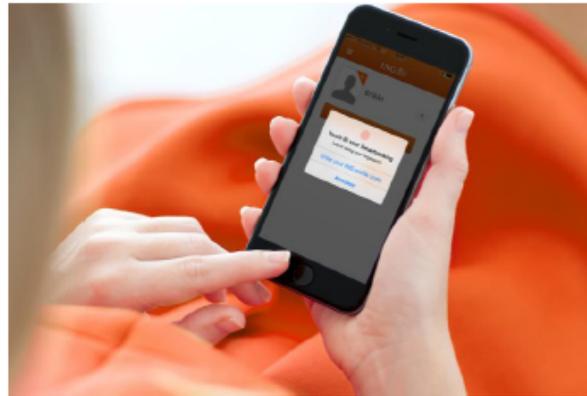
A growing portfolio in renewables

In the fourth quarter, ING acted as joint-lead arranger of the Burgos 150-megawatt wind farm in the Philippines. Once completed, Burgos will generate enough energy for more than one million households and reduce 200,000 tonnes of carbon per year - the equivalent of removing all cars from the streets of London for 10 days.

Read more at ing.world. [Read more in ing.world](http://ing.world)

Finger print banking

Since 1 December 2014, any customer with an iPhone 5S or iPhone 6/6 Plus can access ING Belgium's Smart Banking app using their fingerprints instead of their log-in code. This is tied to the aim to make mobile banking easier, quicker and safer. [Read more in ing.world](http://ing.world)



Awards

- In November 2014, the global financial magazine The Banker named ING Bank Netherlands and ING Bank Belgium 'Bank of the Year 2014' in their respective countries.
- In Poland, ING was named the 'Most Innovative Bank' by International Finance Magazine, a publication targeted at the global finance community.
- RobecoSAM 'Industry Leader' ING Group was awarded the 'Gold Class' distinction in the industry Diversified Financials for its sustainability performance in 2014.

ING Banks' Think Forward strategy

Our Purpose

We believe all sustainable progress is driven by people with the imagination and determination to improve their future and the futures of those around them.

We empower people and organisations to realise their own vision for a better future - however modest or grand.

**EMPOWERING PEOPLE TO STAY A STEP AHEAD,
IN LIFE AND IN BUSINESS.**

Markets in which we operate

| | |
|---|--|
| Market leaders Netherlands, Belgium, Luxembourg | <ul style="list-style-type: none">• Leading retail and commercial bank in the Benelux.• Evolving into 'direct-first' banks. |
| Challengers Germany / Austria, Spain, Italy, France, Australia | <ul style="list-style-type: none">• Organically-built leading direct bank in Germany/Austria, Spain, Italy, France and Australia.• Merging Retail Banking franchises with Commercial Banking franchises into domestic banks. |
| Growth Markets Poland, Romania, Turkey and our stakes in Asia | <ul style="list-style-type: none">• Strong positions in fast-growing countries.• Options for growth in Asia.• Growing into 'direct-first' banks. |
| Commercial Banking Network and Global Franchises | <ul style="list-style-type: none">• International network, 40 countries.• Extensive international client base crossing all regions.• Global franchises: Industry Lending and Financial Markets; Trade Banking and Cash Management. |

A worldwide presence in commercial and retail banking

ING offers retail banking services in 12 countries and has stakes in TMB Bank in Thailand, ING Vysya (India) and Bank of Beijing in China.



- Commercial Banking
- Commercial Banking and Retail Banking
- Alliance Banking (Commercial Banking)
- Commercial Banking Office

ING Commercial Banking is the Dutch bank with the largest international network, consisting of over 40 countries

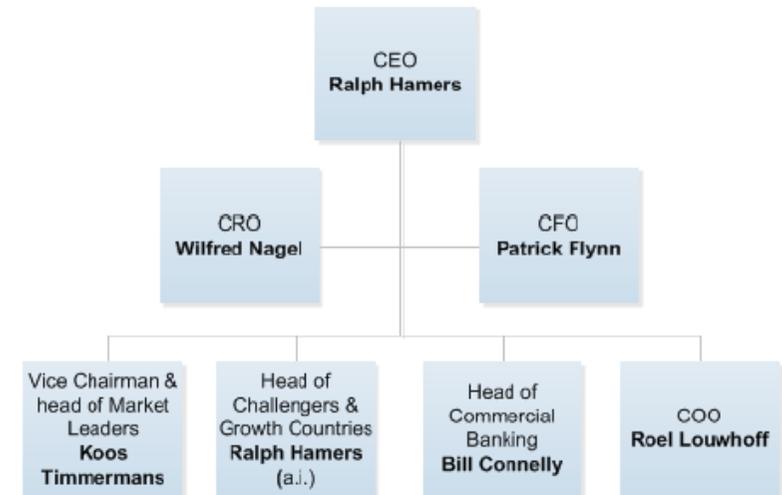


Disclaimer: ING Bank does not have a commercial banking licence in the U.S. and therefore is not permitted to conduct commercial banking business in the U.S. Through its wholly-owned subsidiary ING Financial Holdings Corporation, and its affiliates, it offers a full array of wholesale products such as commercial lending, corporate finance and a full range of FM products and services.

Management Board Banking



Clockwise left to right: Roel Louwhoff, Koos Timmermans, Ralph Hamers, Bill Connelly, Patrick Flynn, Wilfred Nagel



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Getting ING's data management right across the entire bank is essential

World is changing fast



Response ING COO

"In line with the Think Forward strategy, the long long-term vision for the COO domain is to be the Next Generation Digital Bank"

Building blocks

Uniform & easy processes

Reliable & modern banking systems

Global data management

Enabled people with right skills

Collaborative performance culture

Global data management

Uniform data governance across the bank

Trustable data : one single source of truth

Foundation for predictive data analytics

Operational excellence in data exchange

In more detail...

GDM to ensure that ING has trustable data which is complete, accurate, consistent, and appropriate, in order to enable:

1. Next Generation Digital Bank:

- Data is an asset, which is key (together with people, processes and systems) to be the next generation digital bank.

2. Accurate Reporting:

- External Reporting:
 - Statutory Reporting:
 - Correct reporting to investors
 - Regulatory Reporting:
 - Comply with the Basel Committee on Banking Supervision 239 standard
 - Provide swift, adequate and timely external reporting to regulators
 - Non-financial risk
- Internal Reporting:
 - Enable management to take well informed decisions based on trustable data

3. Enhanced Customer Experience:

- ING customers to be recognised in all ING entities and to do banking activities across borders via omni channel with the same customer experience
- Tailor our offerings to customers, based on sophisticated predictive analytics
- Fully safeguard customer privacy by complying with the Global Data Protection Policy

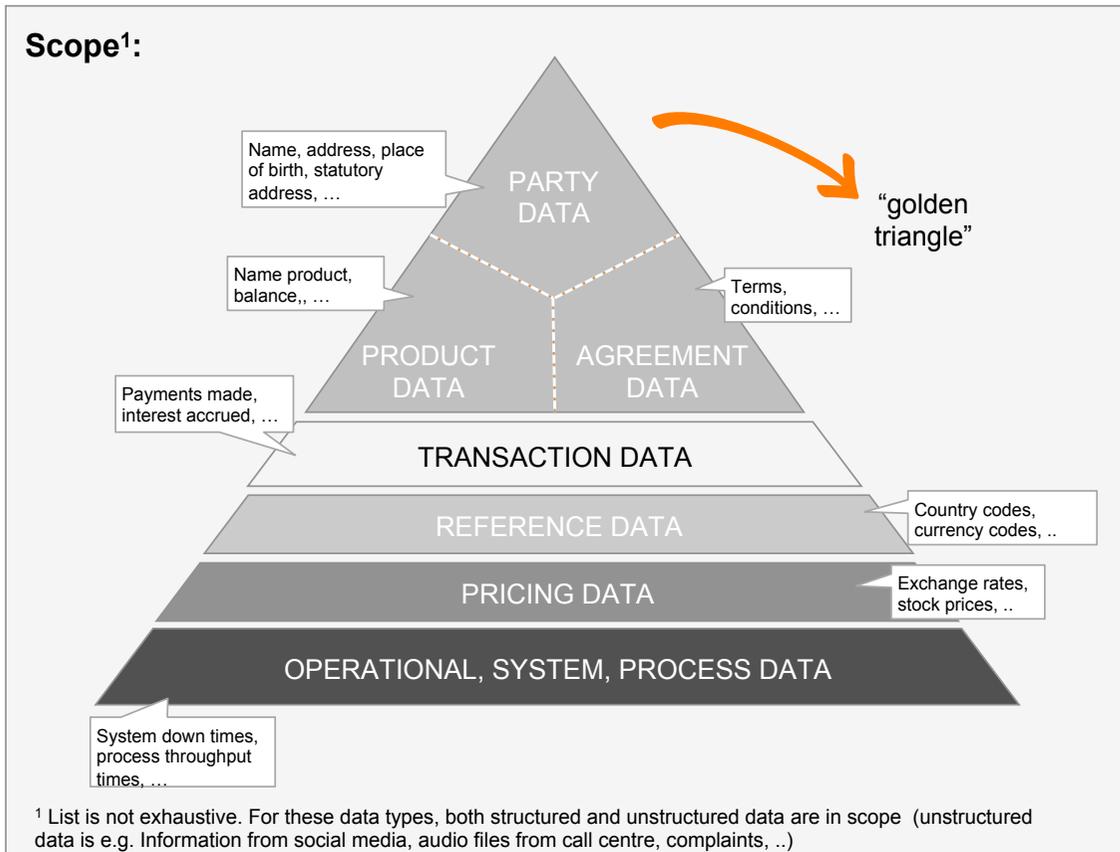
4. Operational Excellence:

- Lower operational costs:
 - Manual work that is needed for data aggregation and to achieve the required data quality
 - Reducing data subscription costs with external data vendors
- Lower IT costs:
 - Reducing data integration needed between various systems
 - Reducing number of interfaces that are needed
 - Removing redundant systems based on data lineage

Why global data management?

- Create global transparency and overall view on investments
- Align local and central data management capabilities and seek efficiency
- Build foundation for next generation digital bank that is not limited by borders or silos
- Enable omni channel vision

... impacting all data we use within the bank



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The Chief Data Officer – key responsibilities

| | |
|-----------------------------------|---|
| Data management definition | Define ING's data management strategy, guidelines, principals, objectives, metrics, organisational structure and underlying technologies |
| Enterprise governance | Assure that data activities and solutions are aligned with ING and ING's vision, direction and architecture, utilising best practices for design, development, testing and implementation |
| Meta Data Management | Assure that business and technical metadata are properly defined, captured, managed and accessible to authorised business and technology users |
| Data Quality | Assure that data quality principle, policies and best practices are built into the development and implementation of enterprise data environments to minimise data quality issues and risks |
| Data Models | Assures that data models are developed and implemented |
| Data Compliance | Ensure compliance to information security and risk management |
| Data Capability | Provide organisational capability for data management focus areas: master data management, data movement and integration management, business intelligence, knowledge and enterprise content management |
| Performance metrics | Assure the development and reporting of data management metrics in terms of progress, plans, status, and issues |

The Chief Data Officer – we first and foremost expect him/her to be capable of bringing the enterprise together

“Serves as the **bridge** that aligns business and IT in the information management space

“Defines, implements and manages the company end-to-end information management programme, including **best practices**, progress controls, resource allocations and priorities

“**Support** decision-makers with relevant, accurate, consistent, and up-to-date data across ING Bank

“**Aligns** the interest of the organisation across all business lines and geographic borders, and serves as key partner together with the CIO bank for senior leaders such as the CFO, CRO, CCO

“**Unites** individual business interest and technology silos to enable the rationalisation of corporate information with the aim of improving enterprise data quality, reduce operational costs, enhance resource utilisation, achieve required lineage and traceability, and drive overall greater efficiency in the management and consumption of information assets across the organisation

“**Maximise value** of increasing data generated and maintained

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GDM programme: objectives and deliverables

Objectives:

- 1 Align with current, local and global, data management initiatives
- 2 Identify requirements of end customers & key stakeholders
- 3 Develop and agree on bankwide data management strategy

| | | | |
|------------|---------------|---------------------|----------------------|
| Governance | Definitions | Architecture | Data Security |
| Quality | Processes | Sustained Awareness | Predictive Analytics |
| Lineage | Org Structure | Data Privacy | |
- 4 Implement GDM strategy
- 5 Push quick wins

Deliverables:

- (A) AS IS overview of material DM initiatives and best practices¹
[Material DM initiatives are asked to periodically inform and consult GDM on progress]
- (A) List of requirements per stakeholder: central and local²
- (B) Translation of requirements into inputs for GDM strategy
- (A) Agreed strategy document
- (B) Agreed business case underlying GDM strategy
- (C) Agreed investment plan for realisation of strategy
- (D) Agreed roadmap towards implementation of strategy
- (A) If applicable: Request for Advice GDM organisation, including Works Council approval
- (B) Ensure realisation of roadmap milestones
- (A) Implemented quick wins

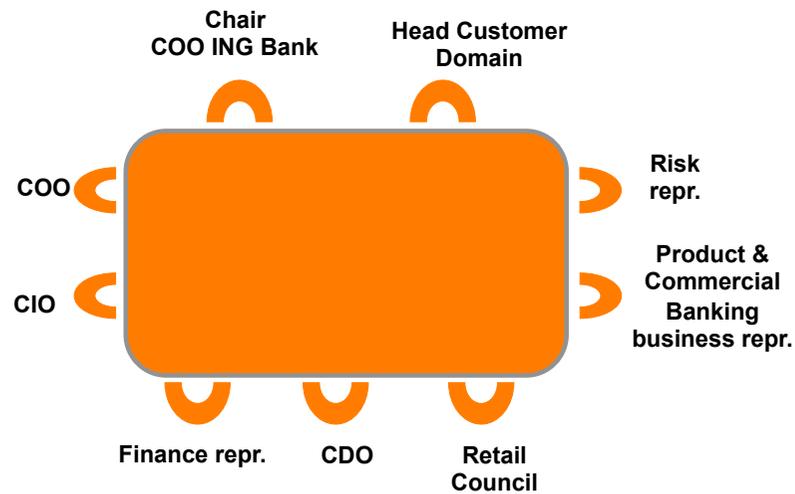
¹ Overview to list: objectives, scope, investments, timelines, owner, ...

² Examples: regulatory reporting requirements, management reporting requirements, innovation requirements, what should be done centrally, what locally, ...

Programme governance

Global Data Council - mandate

- Ultimate decision making body for data management
- Steers programme at strategic level
- Assists programme in resolving issues
- Frequency: every 3 months



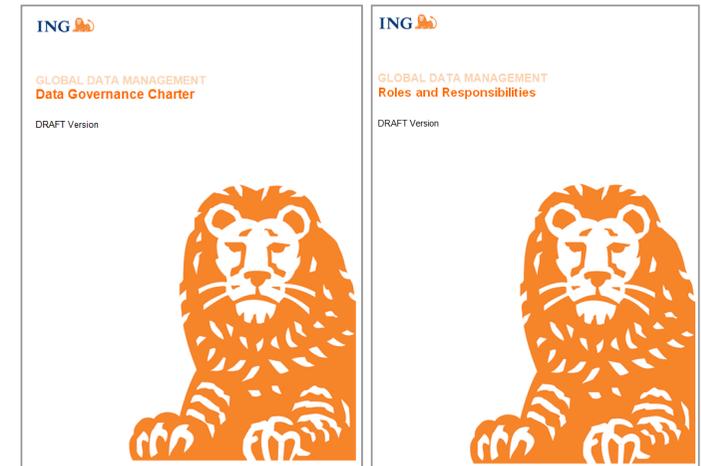
Operational Data Council - mandate

- Tactical decision making body for data management
- Steer programme at tactical level
- Frequency: every two weeks



Draft governance: outlines based upon 5 pillars

- 1 Data Management is a key building block in support of ING's strategy. A global data management (GDM) capability is installed to design, drive and coordinate a bankwide, consistent approach towards data management.
- 2 The Global Data Council and Operational Data Council will form integral part of the data governance (at least) for as long as the CDO line organisation has not been establishing.
- 3 As part of the global data governance organisation, business units and larger support functions are required to implement minimum required data management roles: Chief Data Officer, Data Owners, Data Stewards. All roles preferably to be implemented FTE-neutral.
- 4 Business unit and Support Function CDOs will be functionally steered by the Global CDO (and will act as Single Point of Contact to the GDM programme during the programme phase).
- 5 All definitions for global use will be harmonised by Data Definition Owners, each responsible for standardisation of a specific data category, in close alignment with data consumers. Data Definition Owners will be functionally steered by the Global CDO

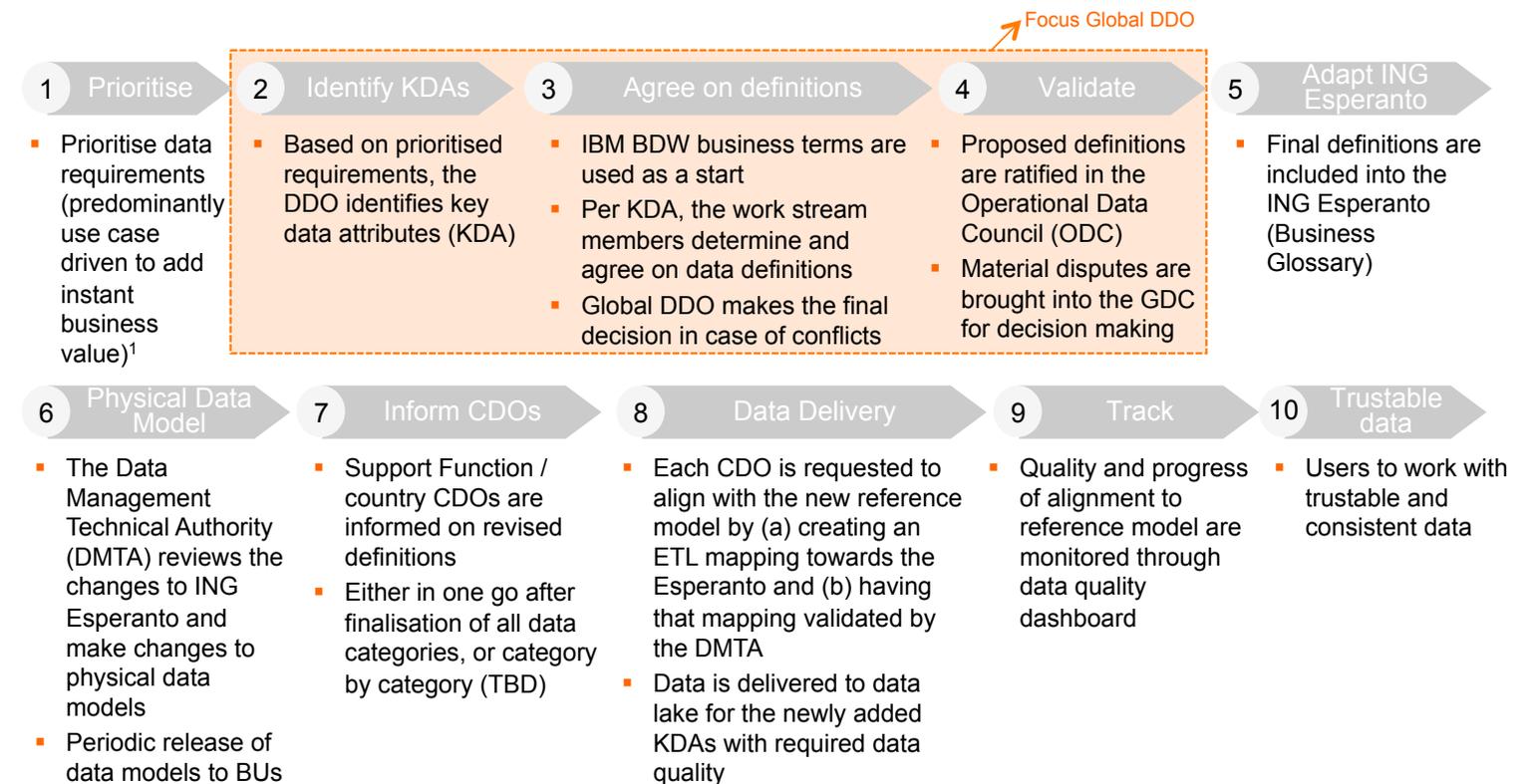


Outlines global definition setting process

Starting points

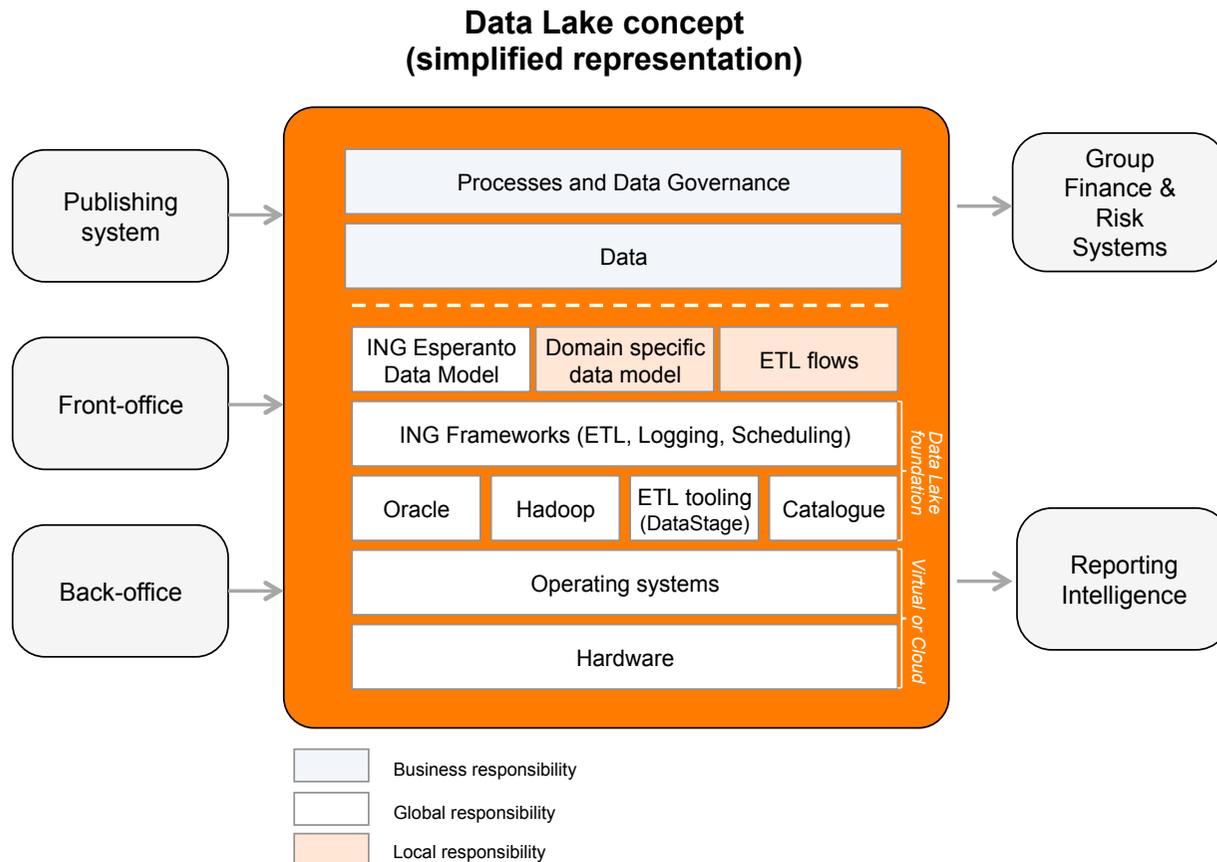
- For each data category of the pyramid Global Data Definition Owners (DDO) are assigned.
- The Global DDO is responsible for driving the process of standardising data definitions that are required for global use for his/her data category by carefully aligning with other data categories for dependencies
- He/she does so by bringing together a work stream of data users and data suppliers and other relevant stakeholders
 - Data users:** Finance, Risk, Predictive Analytics, ...
 - Data suppliers (owners):** representatives from NL, BE, CB, C&G
- IBM's BDW model is used as standard reference model on which the definitions must be based (TSB approved).

Approach



¹ The current use cases will deliver the initial requirements, example: 4Sight has indicated that there will be 250 attributes

Architecture: Data Lake concept is global target architecture



- The Data Lake will be delivered by CIO as a standardised tooling that can be used by the business to support Data Governance and Information Management.
- The Data Lake can be delivered to support multiple domains on one Physical Infrastructure (Multi Tenancy). A single Data Lake Infrastructure will have one IT custodian, responsible for operations, and supports having multiple tenants (domains) that can have their own Data Models and ETL Flows. Access to Data will be separated per tenant (domain).
- On top of the Data Lake Infrastructure, every domain can have its own (logical) Data Lake, complete separated from other domains. Where there is a need to move data between Data Lakes, the ING Esperanto must be used
- Domains that share the same Data Model could create one (logical) Data Lake, with one business owner. Individual domestic countries however will keep their own separate (logical) Data Lakes, with a business owner per country.

QUESTIONS?