

# Data Governance

## 1 Introduction

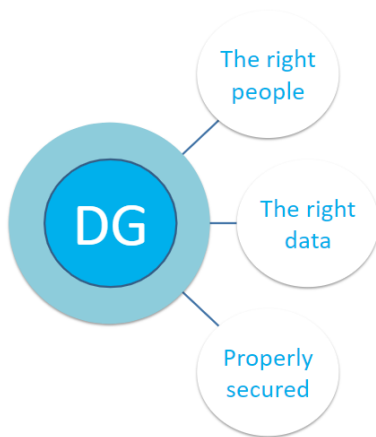
The purpose of Data Governance is to ensure that data is managed properly, according to policies and best practices:

- **Strategy:** Defining, communicating and driving execution of Data Strategy and Data Governance
- **Policy:** Setting and enforcing policies relating to data and Metadata management access, usage, security and quality
- **Standards and quality:** Setting and enforcing Data Quality and Data Architecture standards
- **Oversight:** Providing hands-on observation, audit and correction in key areas of quality, policy and data management (**Stewardship**)
- **Compliance:** Ensuring the organisation can meet the requirements of regulations
- **Issue management:** Identifying, defining, escalating and resolving issues related to data security, data access, data quality, regulatory compliance, data ownership, policy, standards, terminology or data governance procedures.
- **Data management projects:** Sponsoring efforts to improve data management practices.
- **Data asset valuation:** Setting standards and processes to define business value of assets

A Data Governance program develops policies and procedures, cultivates stewardship practices and organisational change management.

Organisational culture must be changed to value data and data management activities. Formal change management is required.

Three important things:



## Data Governance provides oversight and containment

### DMBOK Quote

- Data governance activities provide oversight and containment, through strategy, principles, policy, and stewardship.
- They enable consistency through data classification and data valuation

### Why is this important from a Governance point of view?

- To ensure that Data remains a strategic imperative for the business
- The Data Risks are identified & managed

### How will Data Governance do this?

- Implement a Data Governance function and supporting deliverables

## Data Governance and Stewardship

**Definition:** The exercise of authority, control, and shared decision-making (planning, monitoring, and enforcement) over the management of data assets.

**Goals:**

1. Enable an organization to manage its data as an asset.
2. Define, approve, communicate, and implement principles, policies, procedures, metrics, tools, and responsibilities for data management.
3. Monitor and guide policy compliance, data usage, and management activities.



### 1.1 Business Drivers

Reducing risk:

- **General risk management:** finance, reputation, legal e-discovery, regulatory issues
- **Data security:** Protection of data assets
- **Privacy:** Control of private, confidential and Personal Identifying Information (PII) through policy and compliance monitoring

Improving processes:

- **Regulatory compliance**
- **Data quality improvement**
- **Metadata management:** Business glossary and other Metadata
- **Efficiency in development projects:** SDLC improvements
- **Vendor management:** Contracts dealing with data

Data Governance is separate from IT governance, and is ongoing.

## 1.2 Goals and Principles

### Goals:

1. Enable an organization to manage its data as an asset.
2. Define, approve, communicate, and implement principles, policies, procedures, metrics, tools, and responsibilities for data management.
3. Monitor and guide policy compliance, data usage, and management activities.

To achieve these goals a DG program must be:

- **Sustainable:** Ongoing, and depends on business leadership, sponsorship and ownership
- **Embedded:** DG activities incorporated into development methods, use of analytics, management of Master Data and risk management
- **Measured:** to show positive financial impact

Foundational principles:

- **Leadership and strategy:** Committed leadership, driven by enterprise business strategy
- **Business-driven:** DG is a business program and must govern IT decisions relating to data
- **Shared responsibility:** Across all Data Management Knowledge Areas
- **Multi-layered:** All levels from local to enterprise
- **Framework-based:** establish an operating framework
- **Principle-based:** Principles are the basis of policies. Principles can mitigate resistance.

## 1.3 Essential concepts

Ensuring data is managed without directly executing data management. **Separation of duties between oversight and execution.**

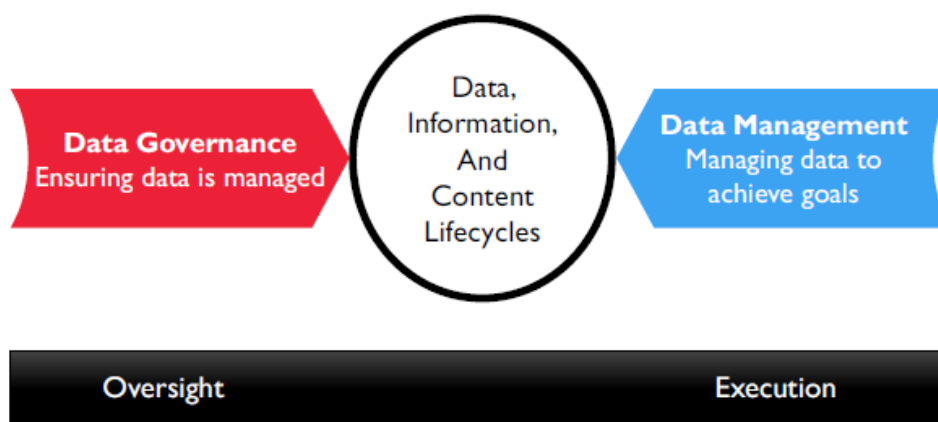


Figure 15 Data Governance and Data Management

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### 1.3.1 Data-centric Organisation

A data-centric organisation values data as an asset and manages data through all phases of its lifecycle, including project development and ongoing operations.

Principles:

- Manage data as a corporate asset
- Incentivise Data management best practices across the organisation
- Enterprise data strategy is aligned to overall business strategy
- Continually improve data management processes.

### 1.3.2 Data Governance Organisation

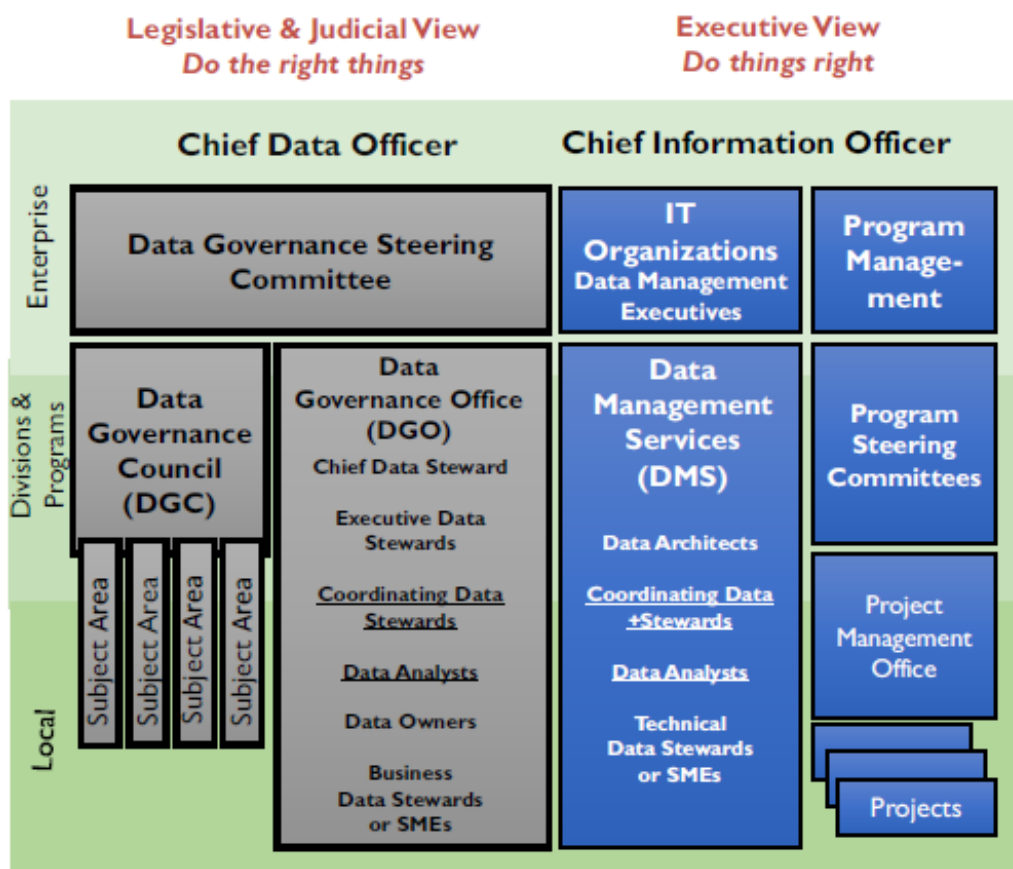


Figure 16 Data Governance Organization Parts

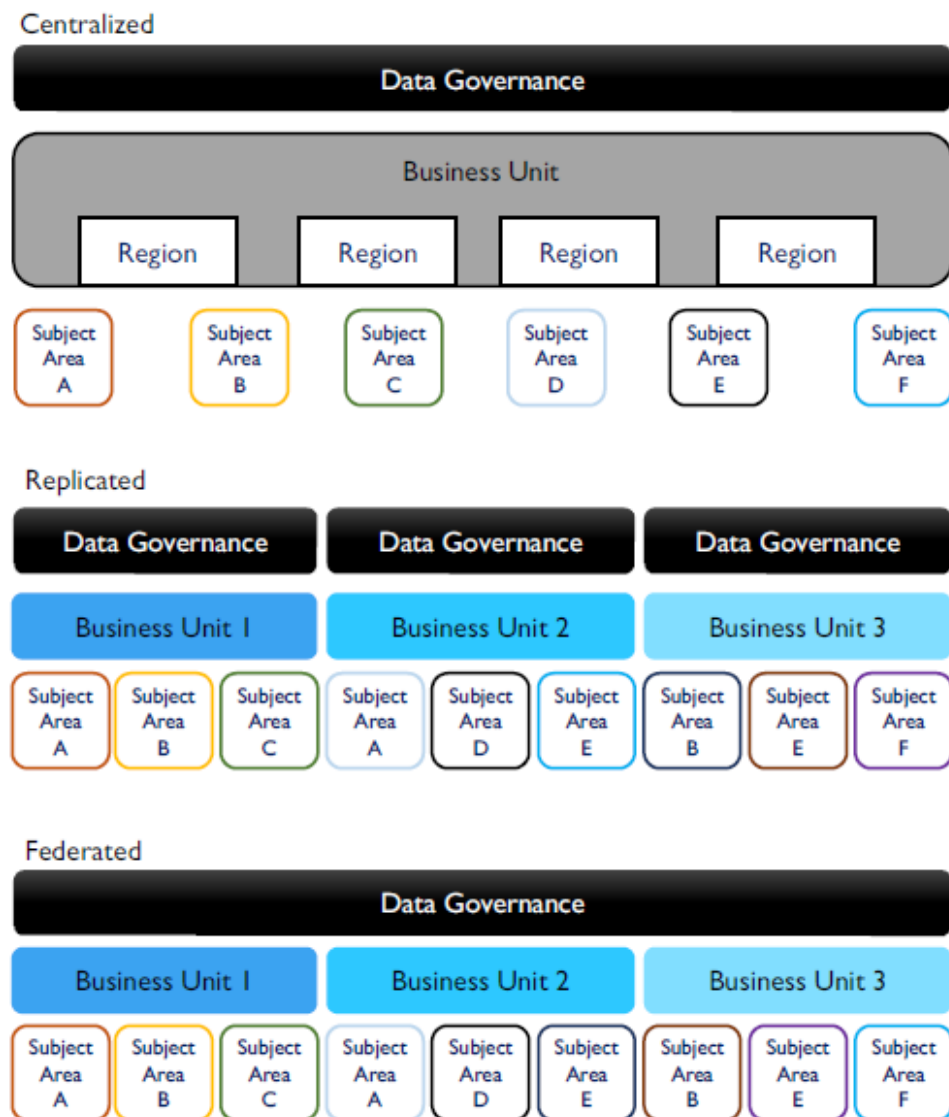
Data Governance Body	Description
<b>Data Governance Steering Committee</b>	<p>The primary and highest authority organization for data governance in an organization, responsible for oversight, support, and funding of data governance activities. Consists of a cross-functional group of senior executives.</p> <p>Typically releases funding for data governance and data governance-sponsored activities as recommended by the DGC and CDO. This committee may in turn have oversight from higher-level funding or initiative-based steering committees.</p>
<b>Data Governance Council (DGC)</b>	Manages data governance initiatives (e.g., development of policies or metrics), issues, and escalations. Consists of executive according to the operating model used. See Figure 17.
<b>Data Governance Office (DGO)</b>	Ongoing focus on enterprise-level data definitions and data management standards across all DAMA-DMBOK Knowledge Areas. Consists of coordinating roles that are labelled as <i>data stewards</i> or <i>custodians</i> , and <i>data owners</i> .
<b>Data Stewardship Teams</b>	Communities of interest focused on one or more specific subject-areas or projects, collaborating or consulting with project teams on data definitions and data management standards related to the focus. Consists of business and technical data stewards and data analysts.
<b>Local Data Governance Committee</b>	Large organizations may have divisional or departmental data governance councils working under the auspices of an Enterprise DGC. Smaller organizations should try to avoid such complexity.



## 1.3.3 Data Governance Operating Model Types

(More detail in Chapter 16)

- **Centralised:** One Central EIM / DG Team with Councils within the Business
- **Decentralised/Replicated:** One DG Team per Business Organization Structure
- **Hybrid:** One Central EIM and By Business Organization Structure
- **Federated:** Unite in a federation – individual autonomy. Centralised strategy, functions in the BUs
- **Self-organising/Network:** Non-Invasive Model based on RACI

Figure 17 Enterprise DG Operating Framework Examples<sup>27</sup>

## 1.3.4 Data Stewardship

A **steward** is a person whose job it is to manage the property of another person. Effective data stewards are accountable and responsible for data processes that ensure effective control and use of data assets.

Activities include:

- Creating and managing core Metadata

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- Documenting rules and standards
- Managing data quality issues
- Executing operational data governance issues

### 1.3.5 Types of Data Steward

A steward manages the property of another person. Data stewards manage the data assets on behalf of others and in the best interests of the organisation. (McGilvray, 2008). Data Stewards are accountable and responsible for data governance and have a portion of their time dedicated to these activities.

Types of Data Stewards:

- **Chief Data Stewards:** Chair DG bodies, act as CDO, be Executive Sponsors
- **Executive Data Stewards:** Senior managers who serve on the Data Governance Council
- **Enterprise Data Stewards:** Oversight of a data domain across business functions
- **Business Data Stewards:** business professionals, subject matter experts
- **A Data Owner:** a business data steward with approval authority for decisions within domain
- **Technical Data Stewards:** IT professionals operating in one of the knowledge areas e.g. DBAs, BI Specialists, Data Integration specialists, Data Quality analysts, metadata administrators
- **Coordinating Data Stewards:** Lead teams of business and technical data stewards in discussions across teams and with Executive Data Stewards.

Data Principles: Data Stewards:

- **Enterprise data must be modelled:**
  - modelled, named and defined according to standards across all business divisions
  - Effort made by management to share data – not maintain redundant data
  - Originating data stewards recognise needs of downstream processes
- **Enterprise data must be maintained close to the source:**
  - Create and maintain as close to the source as possible
  - Data Quality standards applied to approved reliability levels as defined by business units
- **Enterprise data must be safe and secured:**
  - In all electronic formats must be safeguarded on requirements and compliance guidelines
  - Guidelines are determined by business stewards of Enterprise data
  - Backup and recovery measures
- **Enterprise data must be accessible:**
  - Enterprise data and metadata shall be readily available and accessible to all except where restricted
  - Business stewards of enterprise data are responsible for defining the types of individuals, and levels of access privileges
  - Information Security will be responsible for the implementation of proper security controls
- **Metadata will be recorded and utilised:**
  - All projects utilise defined metadata for data naming, data modelling and database design.
  - Data Management is responsible for the metadata program



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### 1.3.6 Data Policies

- Data Policies are directives that codify principles and management intent into fundamental rules governing the creation, acquisition, integrity, security, quality and use of data and information.
- Global
- Describe the “What” of data Governance (Standards and procedures describe “How”)
- Should be few data policies, and should be stated briefly and directly

### 1.3.7 Data Asset Valuation

The process of understanding and calculating the economic value of data to the organisation.

Data sets are not interchangeable (fungible) between organisations. How an organisation gets value from customer data can be a competitive differentiator.

The following phases of the data lifecycle (acquiring, storing, administering and disposing) involve costs. Data only brings value when it is used but incurs risk management costs.

Ways to measure value:

- **Replacement cost:** of data lost in a breach or disaster
- **Market value:** as a business asset at the time of a merger or acquisition
- **Identified opportunities:** the income to be gained
- **Selling data:** as a package, or the insights to be gained
- **Risk cost:** potential penalties, remediation costs and litigation expenses

Table 5 Principles for Data Asset Accounting

Principle	Description
<b>Accountability Principle</b>	An organization must identify individuals who are ultimately accountable for data and content of all types.
<b>Asset Principle</b>	Data and content of all types are assets and have characteristics of other assets. They should be managed, secured, and accounted for as other material or financial assets.
<b>Audit Principle</b>	The accuracy of data and content is subject to periodic audit by an independent body.
<b>Due Diligence Principle</b>	If a risk is known, it must be reported. If a risk is possible, it must be confirmed. Data risks include risks related to poor data management practices.
<b>Going Concern Principle</b>	Data and content are critical to successful, ongoing business operations and management (i.e., they are not viewed as temporary means to achieve results or merely as a business by-product).
<b>Level of Valuation Principle</b>	Value the data as an asset at a level that makes the most sense, or is the easiest to measure.
<b>Liability Principle</b>	There is a financial liability connected to data or content based on regulatory and ethical misuse or mismanagement.
<b>Quality Principle</b>	The meaning, accuracy, and lifecycle of data and content can affect the financial status of the organization.
<b>Risk Principle</b>	There is risk associated with data and content. This risk must be formally recognized, either as a liability or through incurring costs to manage and reduce the inherent risk.
<b>Value Principle</b>	There is value in data and content, based on the ways these are used to meet an organization's objectives, their intrinsic marketability, and/or their contribution to the organization's goodwill (balance sheet) valuation. The value of information reflects its contribution to the organization offset by the cost of maintenance and movement.

## 2 Data Governance Activities

### 2.1 Define Data Governance for the Organisation

- DG must support business strategy and goals
- Enterprise Data Strategy is informed by business strategy and goals
- DG enables shared responsibility for data decisions
- Clear understanding of what and who are governed and who is governing
- DG is most effective when it is an enterprise effort

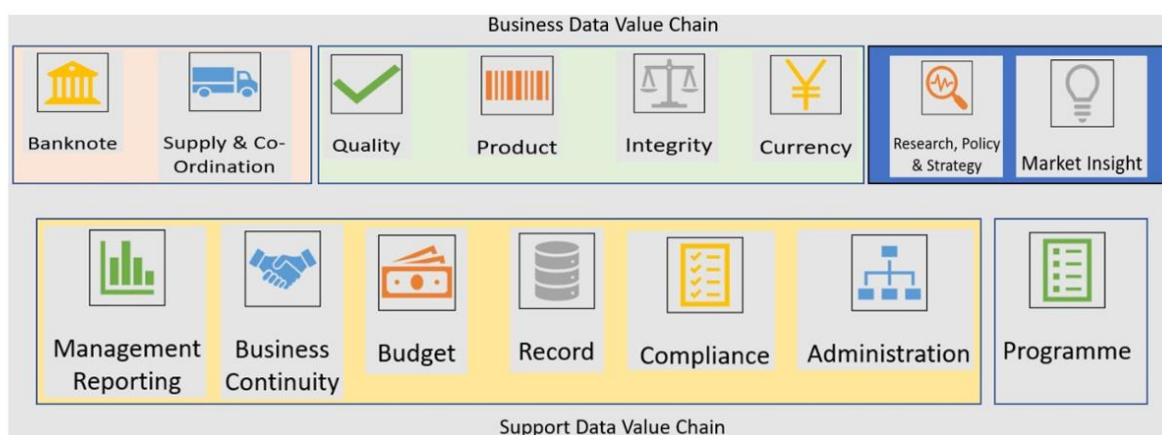
### 2.2 Perform Readiness Assessment

- **Data management maturity:** Understand what the organisation does with data, measure current management capabilities and capacity.
- **Capacity to change:** Measure capacity of organisation to change, and Identify possible resistance points
- **Collaborative readiness:** measures collaboration across functional areas
- **Business alignment:** how well data use aligns with business strategy

### 2.3 Perform Discovery and Business Alignment

- **Discovery Activity**
  - Identify and assess effectiveness of existing policies and guidelines (Risks, behaviours, implementation)
  - Identify opportunities for DG to improve usefulness of data
- **Business Alignment** attaches business benefits to DG program elements
- **Data Quality analysis**
  - Identify issues and risks associated with poor quality data
  - Identify business processes at risk from poor quality data
  - Financial and other benefits from creating a DQ program as part of DG
- Assessment of **data management practices**
- Derive a list of **DG requirements** which will drive **DG strategy** and tactics

## Example of a Data Estate: a Central Bank



### 2.4 Develop Organisational Touch Points

Touch points that support alignment of an enterprise data governance and data management outside the direct authority of the CDO.

- **Procurement and contracts:** Enforce standard contract language
- **Budget and funding:** prevent duplicate acquisitions and ensure optimisation of data assets
- **Regulatory compliance:** CDO understands and works within regulatory requirements. Requires ongoing monitoring
- **SDLC/development framework:** identifies control points where enterprise policies, processes and standards can be developed

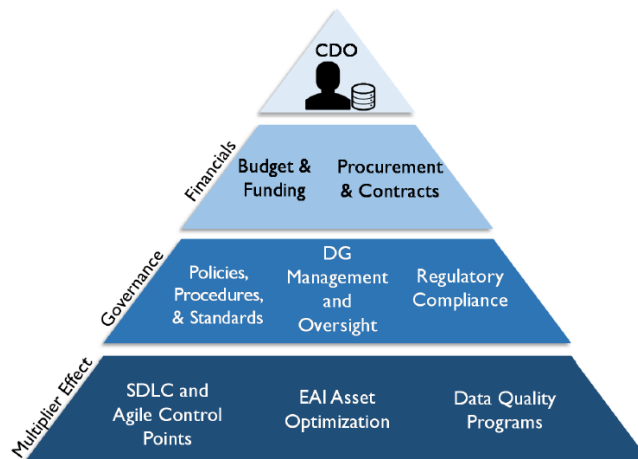


Figure 18 CDO Organizational Touch Points

## 2.5 Develop Data Governance Strategy

Defines the scope and approach to governance efforts. Deliverables:

- **Charter:** Business drivers, vision, mission and principles of data governance
- **Operating framework and accountabilities:** Structure and responsibilities
- **Implementation roadmap:** Timeframes
- **Plan for operational success:** Describe target state

## 2.6 Define the DG Operating Framework

Consider the following areas when constructing the organisations operating model:

- **Value of data to the organisation:** Important if the organisation sells data
- **Business model:** Decentralised, centralised, international
- **Cultural factors:** Acceptance of discipline and adaptability to change
- **Impact of regulation:** Level of regulation of the organisation

Layers of governance: determine where accountability resides for stewardship activities and data ownership.

The DG Operating framework defines:

- The interaction between Governance Organisation and people responsible for data management initiatives
- Engagement of change management initiatives to introduce DG
- Model for issue resolution pathways through governance

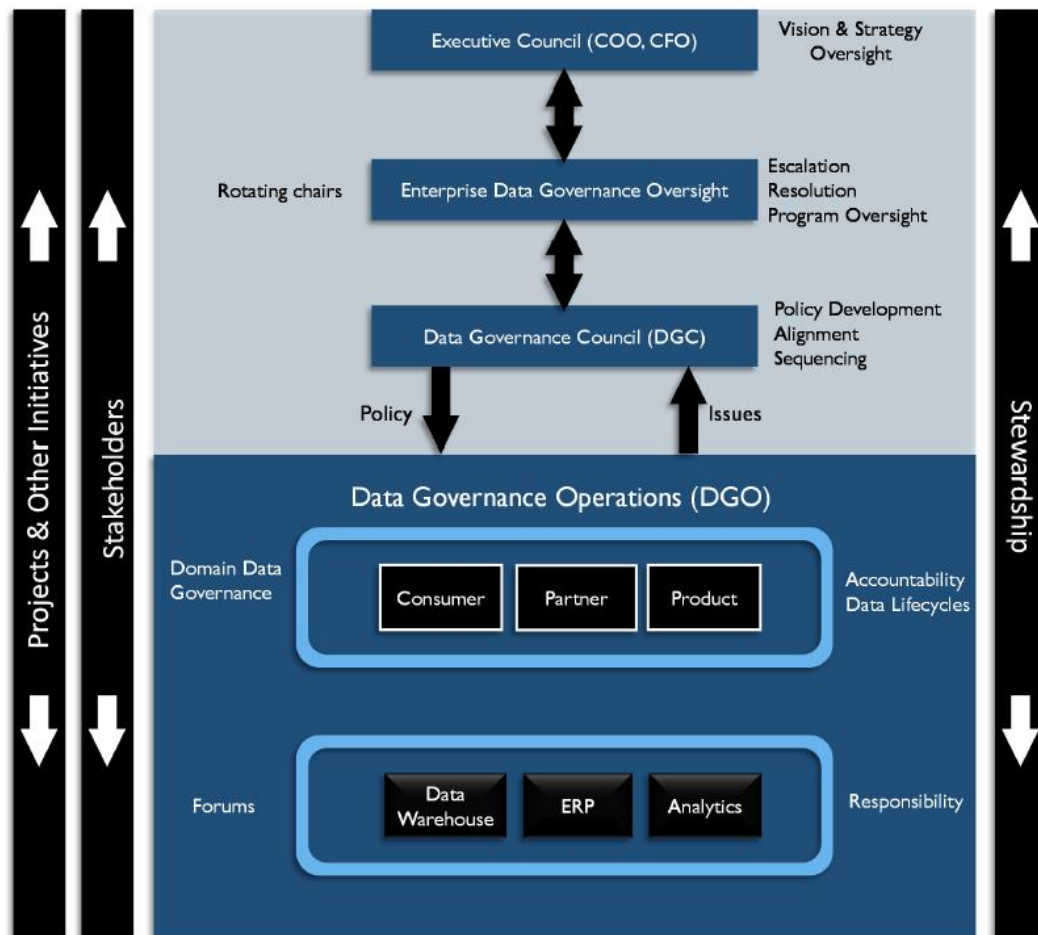


Figure 19 An Example of an Operating Framework

## 2.7 Develop Goals, Principles and Policies

Derived from the DG Strategy to the desired future state. They are drafted by data management professionals and/or business policy staff. Refined by data stewards and management. Data Governance Council conducts final review, revision and adoption.

Data policies must be effectively communicated, monitored, enforced and periodically re-evaluated. Data Governance Council may delegate this authority to the Data Stewardship Steering Committee.

## 2.8 Underwrite Data Management Projects

Promote enterprise wide data management improvements by articulating the ways they improve efficiency and reduce risk. Should be priority for organisations wanting more value from their data.

The DGC helps define the business case and oversees data management improvement project status and progress in coordination with the Project Management Office (PMO).

Data Management projects are part of the IT Project portfolio.

The DGC coordinates projects with enterprise wide scope such as Master Data Management, Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM).

Data management requirements must be captured in the planning and design phases of the SDLC

## 2.9 Engage Change Management

Organisational Change Management (OCM) - to bring about change in the organisation's systems and processes. A mature organisation in change management builds clear vision, leads and monitors from the top, and designs and manages small changes with feedback. Involves collaboration in whole organisation.

- **Planning:**
  - stakeholder analysis
  - gain sponsorship
  - Communications approach to resistance to change
- **Training:** Influencing systems development:
- **Policy implementation:** Communicate policies and the organisation's commitment to DM
- **Communications:**
  - Promoting the value of data Assets
  - Monitoring and acting on feedback about DG activities
  - Implementing data management training
  - Measuring the effects of change management in **5 key areas:**
    - Awareness of the need to change
    - Desire to participate and support the change
    - Knowledge about how to change
    - ability to implement new skills and behaviours
    - Reinforcement to keep change in place
- **Implementing new metrics and KPIs:** Employee incentives

## 2.10 Engage in Issue Management

The process of identifying, quantifying, prioritising and resolving DG issues:

- Authority
- Change management escalations
- Compliance
- Conflicts
- Conformance
- Contracts
- Data security and identity
- Data quality

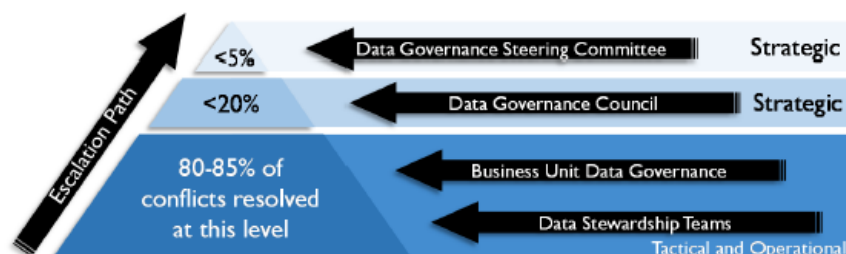


Figure 20 Data Issue Escalation Path

Develop control mechanisms and procedures for:

- Identifying, capturing, logging and updating issues

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- Assignment and tracking of action items
- Documenting stakeholder viewpoints and resolution alternatives
- determining, documenting and communicating issue resolutions
- Facilitating objective, neutral discussions where all viewpoints are heard
- Escalating issues to higher levels of authority

### 2.11 Assess Regulatory Compliance Requirements

Part of the DG Function is to monitor and ensure regulatory compliance. DG guides the implementation of controls to monitor and document compliance with data-related regulations.

Examples of global regulations which impact data management practices.

- Accounting standards
- BCBS 239 (Basel Committee on Banking Supervision) and Basel II – for banks
- CPG 235 (Australian Prudential Regulation Authority APRA) – banks and insurance
- PCI-DSS – The Payment Card Industry Data Security Standards
- Solvency II - European Union Rules for insurance, similar to Basel II
- Privacy Laws

Evaluate the implications of the regulations

- Relevance of regulation to the organisation
- What constitutes compliance, and what policies and procedures are required?
- When is compliance achieved, and how and when is it monitored?
- Can industry standards achieve compliance?
- How is compliance demonstrated?
- Risks and penalties for non-compliance
- How is non-compliance identified and reported?
- How is non-compliance managed and rectified?

### 2.12 Implement DG

There are many complex activities which need to be coordinated using a roadmap with timeframes. Schedules may differ in a federated model with different business units based on differing levels of engagement, maturity and funding

Prioritised DG activities in the early stage:

- Define activities for high-priority goals
- Business glossary, document terminology and standards
- coordinate with Enterprise and data architecture to understand the data and systems
- Assign financial value to data assets to enable better decision making and understanding

### 2.13 Sponsor Data Standards and Procedures

**Standard:** Something set up and established by authority as a rule for measure of quantity, weight, extent, value or quality.

Standards help define DQ by providing a means of comparison.

Standards have the potential to simplify processes, as a decision is made once, and codified in a set of assertions (the standard).



Enforce standards to promote consistent results from the processes using them. Data can be measured against standards. The DGC or Data standards steering Committee should audit DM activities as part of the SDLC approval process or by schedule.

Standards difficulties in organisations: DG Standards should be mandatory

- Politicised
- Organisation not practiced at developing or enforcing DG standards
- Value of implementing standards is not recognised
- No knowledge how to implement standards

Different forms of data standards:

- How a field should be populated
- Rules governing relationships between fields
- Acceptable and unacceptable values
- Format

Process:

- Standards are drafted by data management professionals
- Reviewed, approved and adopted by the DGC or a Data Standards Steering Committee (A delegated workgroup)
- Document with capturing organisational knowledge in mind.

Data standards must be communicated, monitored, reviewed and updated. There must be a means to enforce them.

The DGC or DSSC should audit DM activities for standards compliance on a defined schedule or as part of the SDLC approval processes.

**Data Management Procedures:** The documented methods, techniques and steps followed to accomplish specific activities that produce certain outcomes and supporting artifacts.

Concepts can be standardised within all the Data Management Knowledge Areas.

### 2.14 Develop a Business Glossary

A **Business Glossary** is a list of terms, definitions and other Metadata such as synonyms, metrics, lineage, business rules, the responsible steward for that term etc.

Objectives of business glossary:

- Enable common understanding of core business concepts and terminology
- Reduce the risk that data will be misused due to inconsistent understanding of the business concepts
- Improve alignment between technology assets and the business organisation
- Maximise search capability and enable access to documented institutional knowledge

## Example of a Business Glossary

Business Glossary ID	Subject Area (Data Domain)	Business Term Overview				Business Term Relationships			Ownership and Responsibility			Implementation, Usage and DQ Requirements				Change History		
		Business Term	Business Term Synonyms	Business Term Description	Business Term Usage	Is a	Has a / Grouping	Associated with / Relationships	Data Domain	Data Owner	Data Steward	Strategy	Usage	Completeness	Consistency	Version	Status	Last Update
1	Organisation & Role	Organisation																
2	Organisation & Role	Org Level 2																
3	Organisation & Role	Org Level 3																
4	Organisation & Role	Org Unit Type																
5	Organisation & Role	Organisation																
6	Organisation & Role	Department																
7	Organisation & Role	Department Unit																
8	Organisation & Role	Organisation Structure																
9	Organisation & Role	Decentralised																
10	Organisation & Role	Technological																
11	Organisation & Role	Centralised																
12	Organisation & Role	Hybrid																
13	Organisation & Role	Federated																
14	Organisation & Role	Ownership Paradigm																
15	Organisation & Role	Coarse																
16	Organisation & Role	Enterprise																
17	Organisation & Role	Ownership Paradigm																
18	Organisation & Role	Subject Area																
19	Organisation & Role	Functional																
20	Organisation & Role	Project																
21	Organisation & Role	Party Type																
22	Organisation & Role	Individual																
23	Organisation & Role	Organisation																
24	Organisation & Role	Role																
25	Organisation & Role	Party Relationship Type																
26	Organisation & Role	Employee																
27	Organisation & Role	Customer																
28	Organisation & Role	Partner																
29	Organisation & Role	Involved Party																
30	Organisation & Role	Involved Party Type																
31	Organisation & Role	Involved Party Relationship Type																
32	Organisation & Role	Involved Party Profile (URL)																
33	DAMA	Metadata Level	Level1															
34	DAMA	Incomplete																
35	DAMA	Assess																
36	DAMA	Ad-hoc																
37	DAMA	Repeatable																
38	DAMA	Defined																
39	DAMA	Managed																
40	DAMA	Optimising																
41	DAMA	Evidence Type																
42	DAMA	None																
43	DAMA	Documentation																
44	DAMA	DDIC																
45	DAMA	Metrics																

### 2.15 Coordinate with Architecture Groups

The DGC sponsors and approves data architecture artefacts.

Enterprise Data model is sponsored, reviewed and approved by DGC

Enterprise Data Architecture Steering Committee or Architecture Review Board appointed by DGC to oversee DA Program

- Enterprise Data model developed by Data Architects and Data Stewards in subject area teams
- Changes or extensions to EDM proposed and developed by Data Steward Teams.
- EDM must align with business strategy and data strategy

The Enterprise data model must be reviewed, approved and formally adopted by the DGC. It must align to key business strategies, processes and systems. Doing things right.

### 2.16 Sponsor Data Asset Valuation

DGC organises and standardises the effort to put monetary value to data

- Information gaps represent business liabilities
- Business value of the missing data can be the cost of closing the gaps
- Develop models to estimate value of information that does not exist
- Build value estimates into the data strategy road map
  - Justifies business cases for root cause DQ solutions
  - Business cases for other DG Initiatives

### 2.17 Embed DG

The organisation accepts the governance of data, and the processes and funding are in place to enable the continued performance of the DG framework.

Goal of the DGO:

- Embed behaviours related to managing data as an asset in processes
- Operations plan to implement and operate DG activities
- Activities, timing and techniques to ensure success

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### Sustainability of the DG organisational framework

- Processes and funding in place
- Organisation accepts the governance of data
- DG is measured, monitored and obstacles overcome

### Create a Data Governance Community of Interest

- Deepens the understanding of DG
- Helpful in early years of governance

## 3 Tools and Techniques

DG is fundamentally about organisational behaviour, but tools can help with communication, metrics and business glossary development. Requirements must be clearly defined before purchasing a tool.

### 3.1 Online Presence / Websites

For collaboration, communication and sharing documents

### 3.2 Business Glossary

Core DG tool housing agreed-upon definitions and business terms and relates them to data.

### 3.3 Workflow tools

Connects processes to documents and is useful in policy admin and issue resolution.

### 3.4 Document management tools

### 3.5 Data Governance Scorecards

Collection of metrics to track DG activities. Can be automated.

## 4 Implementation Guidelines

### 4.1 Organisation and culture

The target of organisational change is **sustainability** (a quality of a process that measures how easy it is for the process to continue to add value).

### 4.2 Adjustment and Communication

- Business / DG strategy map
- DG Roadmap
- Ongoing business case for DG
- DG Metrics

## 5 Metrics

DG program must be able to measure progress and success and how DG participants have added value to business objectives.

- **Value:** Contributions to business objectives, reduction of risk, improved efficiency
- **Effectiveness:** Achievement of goals and objectives, Stewards using relevant tools, Effectiveness of communication, education and training
- **Sustainability:** Policies and processes working appropriately, Staff conforming to standards and procedures

## Data Governance Checklist

### Deliverables:

- Data Governance Strategy
- Data Strategy
- Business / Data Governance Strategy Roadmap
- Data Principles, Data Governance Policies, Processes
- Operating Framework
- Roadmap and Implementation Strategy
- Operations Plan
- Business Glossary
- Data Governance Scorecard
- Data Governance Website
- Communications Plan
- Recognized Data Value
- Maturing Data Management Practices

- Strategy
  - Data Governance Strategy
  - Data Strategy
  - Business / Data Governance Strategy Roadmap
  - Roadmap & Implementation Strategy
- Organization
  - Operating Framework
- Culture & Change
  - Communications Plan
- Working Methods
  - Data Principles, Policies & Processes
  - Maturing Data Management Practices
  - Operations
- Results
  - Business Glossary
  - Recognized Data Value
- Measurement
  - Data Governance Scorecard

## Knowledge Area Data Governance

Data Governance	Measurement	Policy Framework	Change Management
<ul style="list-style-type: none"> <li>• Data Sources to be integrated</li> <li>• Data Quality rules to be enforced</li> <li>• Conditions of use rules</li> <li>• Activities to be monitored and the frequency of monitoring</li> <li>• Priority and response levels of stewardship efforts</li> <li>• How information is represented to meet stakeholder needs</li> <li>• Standard approval gates, expectations in RDM and MDM deployment</li> </ul>	<ul style="list-style-type: none"> <li>• Leading Indicators               <ul style="list-style-type: none"> <li>• Knowledge Area Metric</li> </ul> </li> <li>• Lagging Indicators               <ul style="list-style-type: none"> <li>• Business SWOTS</li> <li>• Insights</li> <li>• Decision Making</li> <li>• Revenue</li> </ul> </li> <li>• Data Management SWOTS (Friction)</li> </ul>	<ul style="list-style-type: none"> <li>• Principles</li> <li>• Policies</li> <li>• Procedures</li> <li>• Standards</li> <li>• Guidelines</li> <li>• Roles &amp; Responsibilities</li> <li>• Policy Relationships               <ul style="list-style-type: none"> <li>• Industry</li> <li>• Organization</li> <li>• Internal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Vision</li> <li>• Culture               <ul style="list-style-type: none"> <li>• Decision Making</li> <li>• Attitudes</li> <li>• Behaviour</li> </ul> </li> <li>• Communication</li> <li>• Collaboration Structures               <ul style="list-style-type: none"> <li>• Agile</li> </ul> </li> </ul>