Data and Information

Work session
for Practitioners

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Information is managed as an asset.

Opportunities

- Exploiting emerging technologies
- Unlocking the value of information
- Leveraging agency transformations
- Partnering with the private sector

Focus areas

Digital services

Agencies and third parties agree how to deliver federated services	Service delivery channels are rationalised	Common service components are re-used by agencies	Federated services are piloted using 'life events'

Information

Information skills drive new insights and better decisions	Open data and sharing by default supported by privacy & security settings	Public trust and confidence permits sharing and re-use of information	Frameworks and infrastructure facilitate flows of information and re-use

Technology

Common capabilities and shared services are adopted where possible	Agencies have easy access to innovations from the ICT industry	IT units partner with their business units to drive innovation	Policies, standards, business models shared across the system

Investment

I&T investments are targeted at fewer initiatives with more impact	Maximise value from technology investments	Cost and benefits from investment in digital services are realised	Agency transformation initiatives deliver system benefits

Leadership

Public sector leaders re-balance agency & system priorities	Public sector leaders lead change to overcome system barriers	Build workforce capability that encourages innovation	Agencies look to industry and third-parties for sources of innovation

Outcomes

- Customers experience seamless, integrated and trusted public services
- Information-driven insights are reshaping services and policies, and adding public and private value
- Adoption of information and technology innovations is accelerated and value is being created
- Investment in innovative digital services is being prioritised and benefits are being realised
- Complex problems are being solved and innovative solutions are being adopted

New Zealand Government

Eight Dimensions of an Organisation

Information as an Asset

Is Information an Asset?

- An asset has a service potential or economic benefit

- An asset is controlled by the organisation

- An asset is the result of past transactions

Information is Shareable

RoSI* = Risk of Sharing Information

CoSI* = Cost of Sharing Information

VoI* = Value of Information

VoI* Combined

VoI* per User

CoSI*

RoSI*

Value of most other assets

1   2   3   …   Number of Users
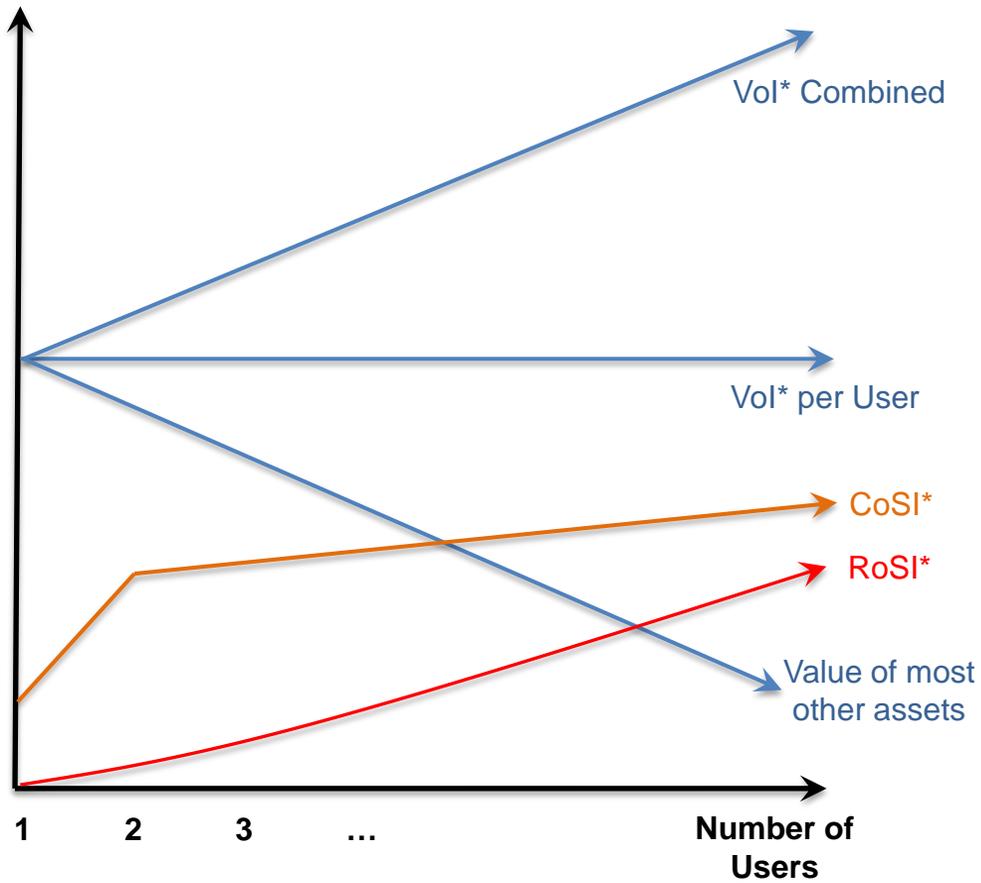
RoCI* = Risk of Copying Information

CoCI* = Cost of Copying Information

RoCI*

VoI* Combined

CoCI*

VoI* per User

1   2   3   …   Number of Users
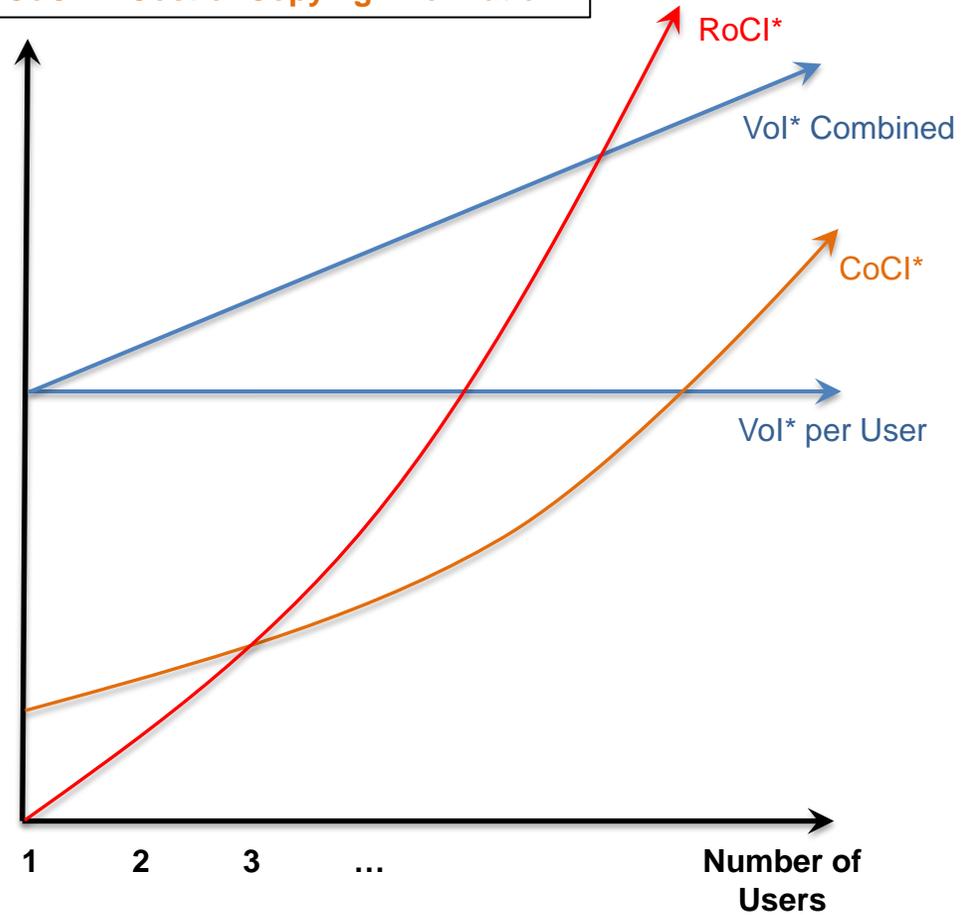
Value of Information
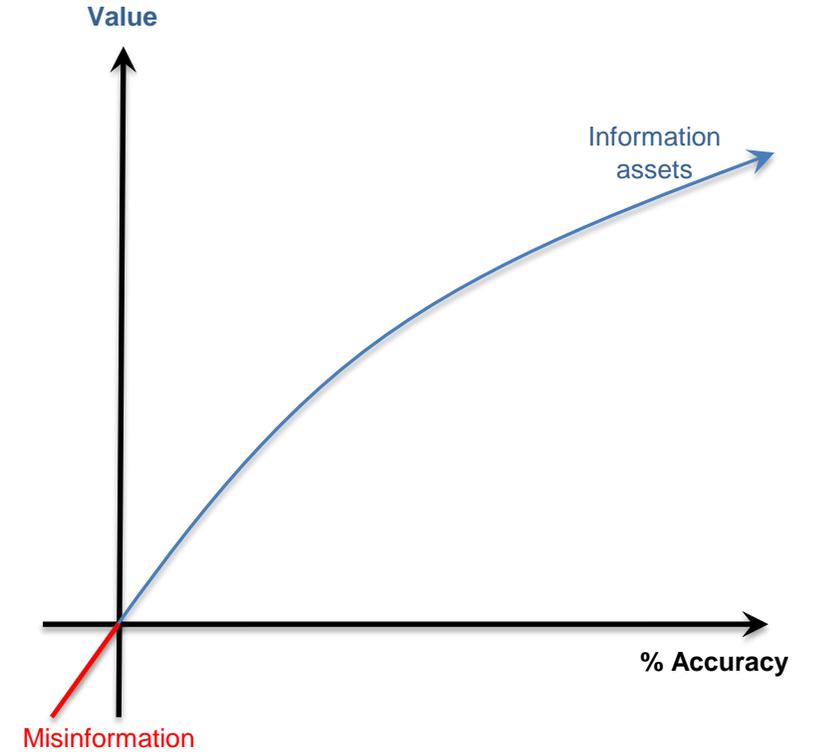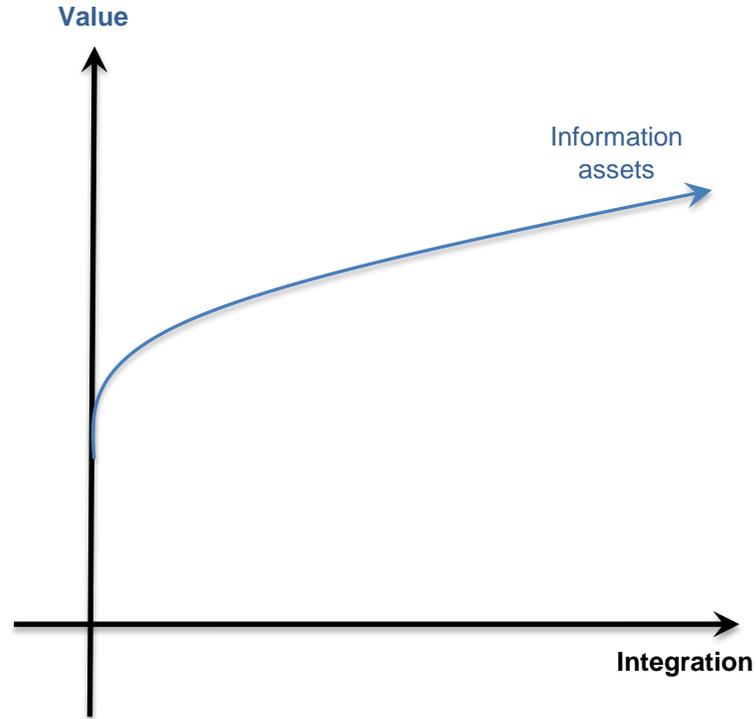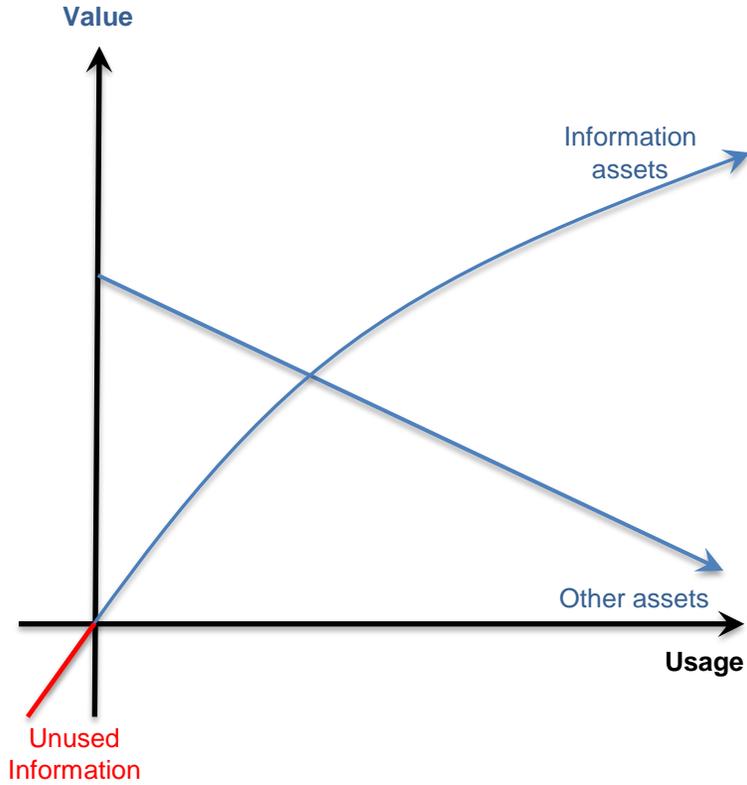
More is NOT necessarily Better
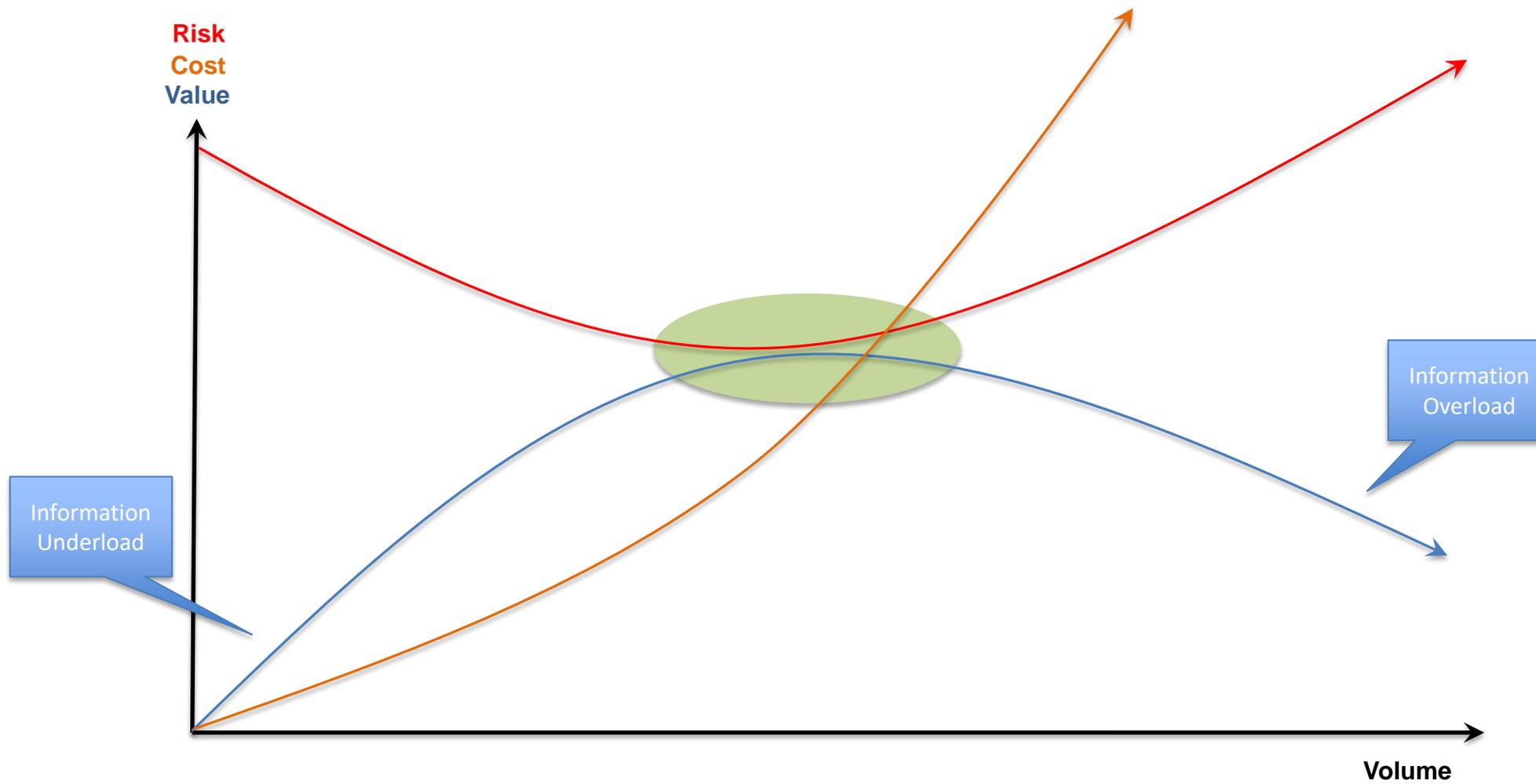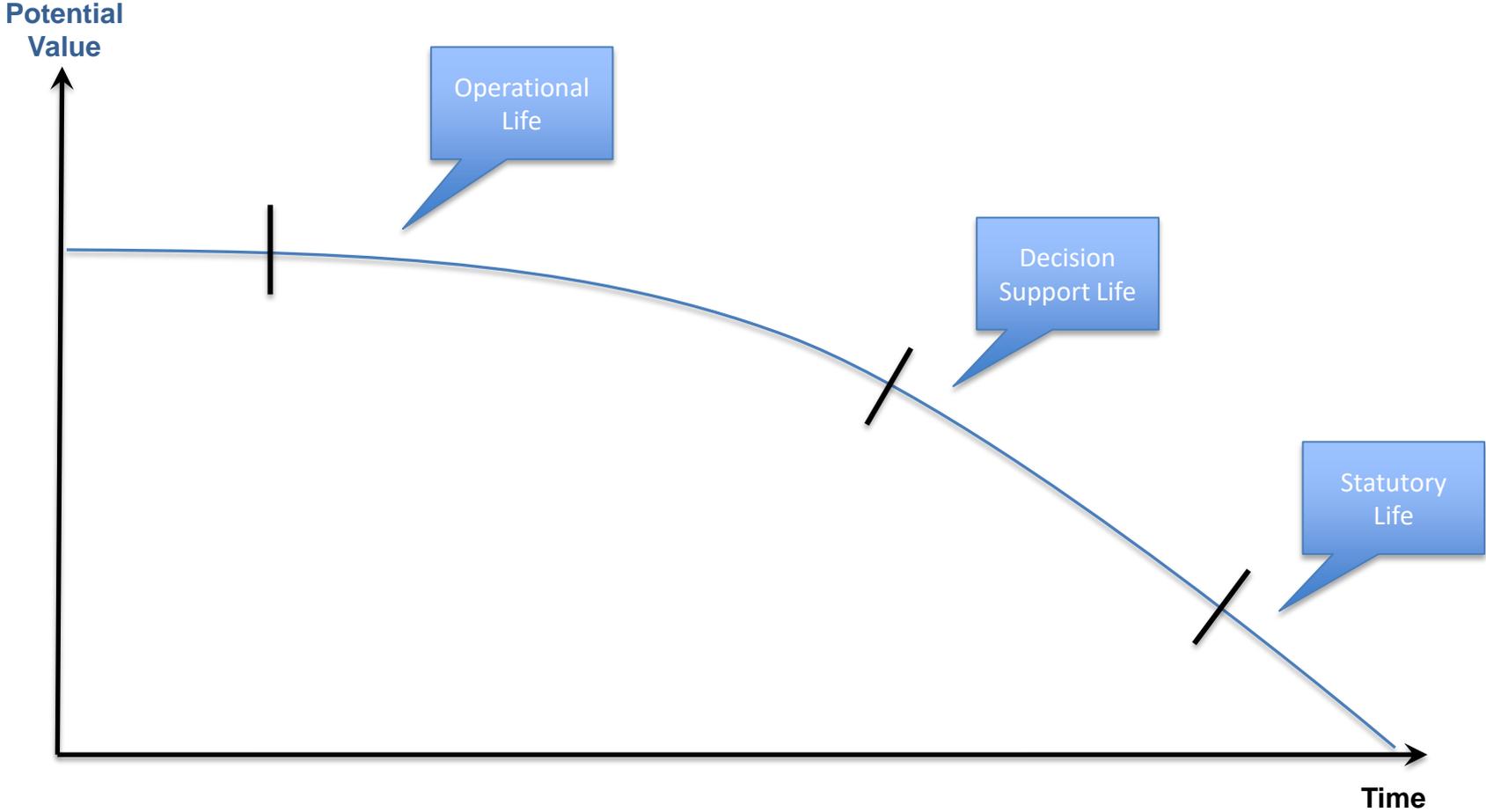
Principles
for
Quality

Principles for Quality

- **Accuracy**
  - *How closely does your data represent what really happened?*
  - *Accuracy is best tackled at source.*

- **Consistency**
  - *The form in which data is passed from one system to another must be as consistent as possible within and across agencies and their business partners to achieve the highest interoperability.*

- **Relevance**
  - *How well the information is designed to achieve specific outcomes.*

- **Completeness:**
  - *An indication of whether or not data meets the current and future business demand*
  - *Data is are available in the data resource.*
  - *Incomplete information will weaken the agency's ability to use and apply it as widely and wisely as needed.*

- **Timeliness**
  - *The time expectation for the accessibility of data and information.*

- **Provenance**
  - *The sources of information involved in producing or delivering an artefact.*

- **Value**
  - *The amount a decision maker would be willing to pay for information prior to making a decision.*

Guiding Principles

- **Usefulness**
  - *The use of data is defined by its intended purpose*

- **Trust**
  - *Trust is essential because no manager will act upon data they don't trust.*

Data Governance

Data Governance - Goals

- Increasing consistency and confidence in decision making

- Improving data and information security

- Maximizing the benefit generation of information

- Designating accountability for data quality

- Minimizing or eliminating re-work

- Optimize staff effectiveness

- Establish process performance baselines to enable improvement efforts

- Managing business risks

- Optimising investments

- Enabling evidence-based policy development

- Consistency in reporting

Data Governance - Why we care?

A Policy DCE expresses frustration that the organisation has "no corporate memory" after finding that a piece of research work recently commissioned has been done before on at least three occasions over time and in different parts of the organisation.

A business case for a major project is relitigated multiple times and takes 2-3 years, largely because there is insufficient baseline operational data to develop a credible approach to benefit realisation. When the project finally proceeds, a large part of it is eventually abandoned because it becomes clear that the benefit estimation was indeed flawed.

A technical flaw causes a serious privacy breach, and the root cause is found to be that there is no clear and effective business accountability within the organisation for assuring the protection of the data in question.

Two business units provide Ministers with significantly different values for the same KPI,
➡ because the definition of one of the inputs is not consistent within the organisation, and
➡ because different assumptions are made in "correcting" other inputs that are based on incomplete or low-quality operational data.
Attempts to "fix" these problems are fragmented and siloed within the business units, and the same discrepancy re-occurs within 2 years.

A major debt recovery campaign is instituted based on a mistaken estimate of debtor population and outstanding debt. In reality, the true value is only 50% of the estimate and the campaign is poorly targeted and not justifiable on this basis.

Note: the above scenarios do not refer to specific incidents, but are based loosely on anecdotes collected over years from a number of organisations

Data Governance – Trust & Confidence

HQD = High Quality Data = % Trust and confidence in the quality and correctness of the data

Raw data

50%

75%

85%

99%
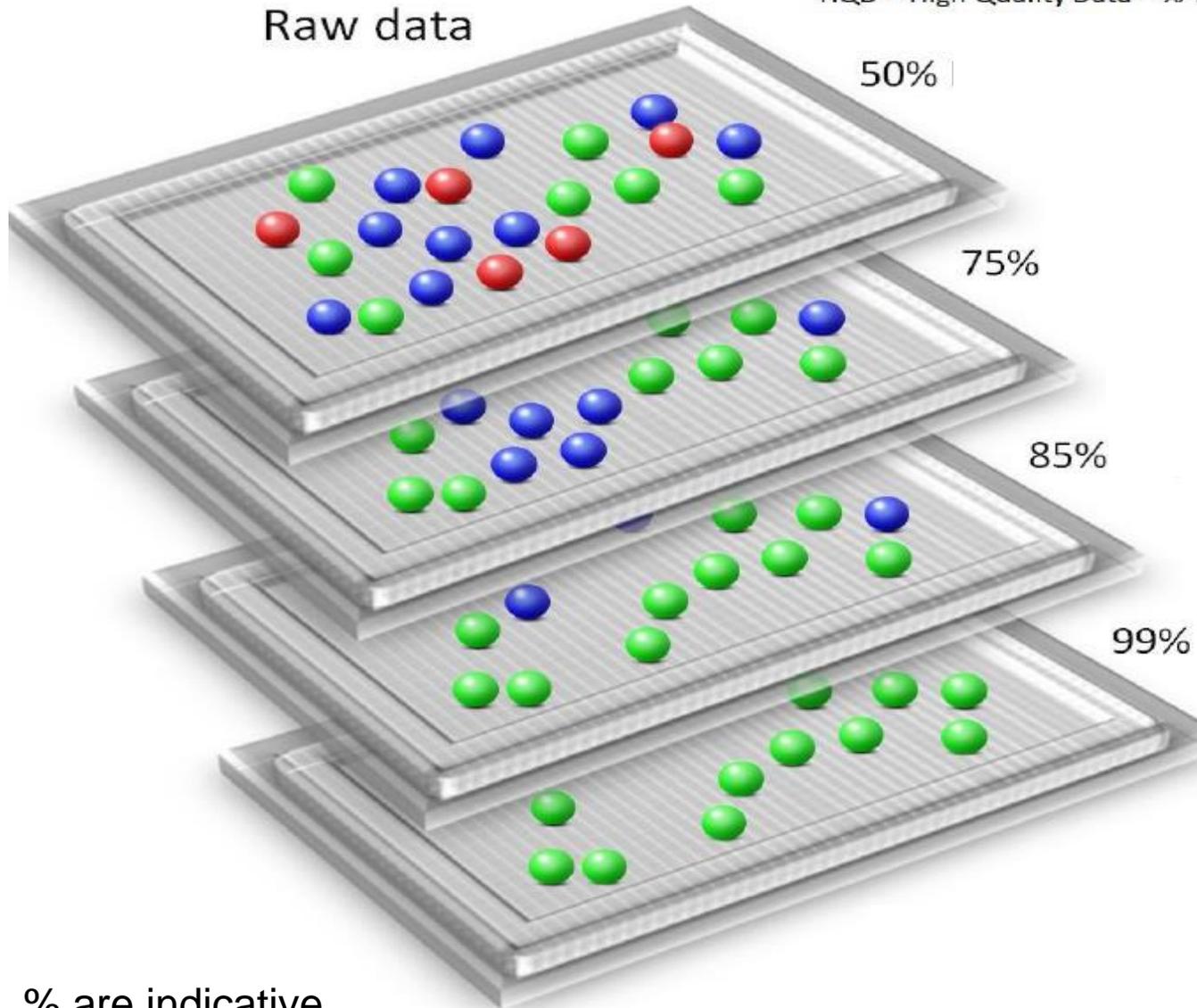
Stage 1: Common data definition & Master Data Management

Stage 2: Data and Information Quality Management Framework

Stage 3: Data Reporting Framework, including statistics, and analytics

Stage 4: Information usable for decision making

% are indicative

Data Governance - Structure

Data Governance Structure

- Data Definition Forum
- Data Quality Forum
- Information & Knowledge Mgmt Forum
- Education & Communication Forum

Authorises & Mandates

AoG Information Steering Group

Agency Internal Governance Structure

- Provides sign-off authority → **Agency** Enterprise Design Authority
- Proposes investment priorities → **Agency** Investment Board
- Ensures data governance in projects → **Agency** EPMO

Roles and Responsibilities

Government Chief Information Officer

Governance

Executive Sponsor*

Privacy   Security

Data/Information

Executive Sponsor*
Role as defined by the
Chief Archivist

Custodian-ship   Steward-ship

Standards

Executive Leadership Team

Administrator

Business   Analyst   Data/Information Manager   Operations

End User   Designer   Developer
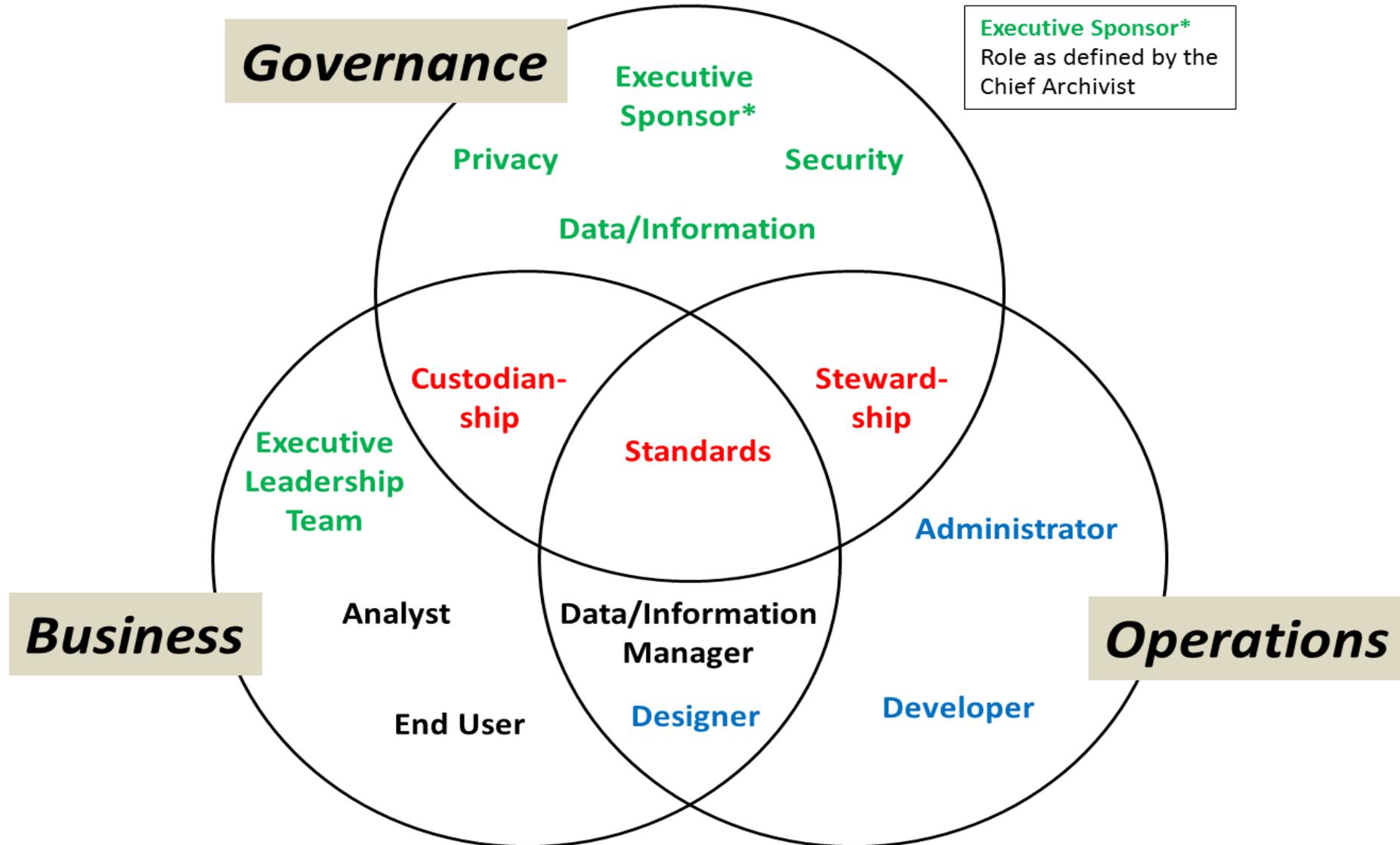
Critical Roles - Custodianship

- Establishes organisation-wide standards, definitions, and rules for business information within their mandate, to enable the organisation to gain maximum value from the information.

- Is the delegated "owner" of the data from Government (The Crown).

Responsibilities:

- Accountable for implementing operational policy, business value, scope, definitions, rules, standards, structure, content, use and disposal for data under their responsibility.

- Responsible for the collection, storage, protection, promotion and delivery of their data, ensuring it meets the business needs of the organisation.

- Fulfilling the legislated responsibility or program mandate of ensuring data quality, completeness, and integrity through the management of its creation and maintenance. ⬚ Identify the required skills in order to meet data needs.

- Ensuring the value of data is maximised through sharing.

- Serving on the Data and Information Governance Steering Group or equivalent where the scope of their information resources is substantial within their organisation.

Contact when:

- A major business need for data is identified.

- Issues arise concerning data policy, business value, scope, security.

Critical Roles - Stewardship

- Is an inclusive role that accepts one or more negotiated stewardship activities on behalf of the Custodian. Stewards have the operational or technical ability to collect, deliver, or maintain of datasets.

- A Custodian cannot transfer accountability to the Steward although the Steward may be responsible for specific activities.

Responsibilities:

- Supports the Custodian with expertise, or resources, to carry out one or more of their responsibilities.
- As a peer of the Custodian, the Steward is bound by signed agreement which details the responsibilities with respect to both parties.
- Specific identified responsibility(s) are transferred from the Custodian to the Steward (accountability remains with the Custodian).
- Where an agreement is in place with the authoritative source (see Definitions), delivers (or provides access to) authoritative data, ensuring data management practices are in place to maintain integrity, authorised access, and conditions of use.
- Providing performance objectives.

Contact when:

- Per the stewardship agreement, when operational needs arise

Critical Roles - Standards

- Has detailed knowledge of data structure, content, and appropriate use of the information for their areas, develops and sets data management standards approved by the Custodian.

- Responsible for the day-to-day management of the data and business issues, according to the defined data standards and data management plan.

Responsibilities:

– Acting as the primary contact for business data within the program area, on behalf of the Custodian.

– Authoring data management plan(s) (see Definitions), defining and managing the standards for acquisition, maintenance, and disposition of data to ensure data quality, resolving issues, and advising other roles. ⬚ Ensuring designed data structures meet business needs.

– Ensuring the delivery of defined services at an operational level.

– Ensuring the protection of data is commensurate with its value and information security classification.

Contact when:

– Data access is required, within the scope of the program area.

– Operational, business, or data definition issues arise or cannot be resolved, or data errors are perceived.

– Further detailed information about their program area's data is required.

– Further data services are required to meet new business needs.

– Data management planning is required, or additional data may be encompassed within their business scope.

Core Business Roles – Data & Information Manager

- Has access to and makes sense of information contained, albeit hidden, in the organisation. It's a critical role for business decision-making.

- Is in charge of analysts that use a variety of statistical methodologies to solve business issues.

Responsibilities:

- Understand high level requirements of the business and provide solutions related to business strategies.
- Translate business and technical jargon to understandable language for different audience.
- Ensure support for the business intelligence program at the highest levels of the organisation.
- Prepare complex reports and gather intelligence to make informed conclusions on business practices.
- Establish and ensure adherence to a set of guiding principles and tools for business intelligence.
- Make data entities accessible.
- Assist End User and Data Analyst in their requirements.
- Promote comprehensive data use within the organisation.
- Establishing partnerships with key IT partners in support of business intelligence initiatives.

Contact when:

- Insight is needed for changed or new strategies to meet business outcomes.

Core Business Roles - Analyst

- Provide business or IT system decision support through analysis, and problem solving data related topics including data design, integration, data relationships, data quality, data transformation, data replication and data modelling.

Responsibilities:

- – Perform statistical analysis and data mining of business data to identify patterns and correlations among the various data points.
- – Documenting the structure, relationships and types of business data through logical modelling, or validating logical models from other sources.
- – Mapping and tracing data dependencies from system to system to identify cross-program impact issues or answer business- and system-related questions.
- – Providing business intelligence support by performing business data analysis and reporting to enable better business decision-making.
- – Documenting the types and structure of the business data (logical modelling),

Contact when:

- – Analysis and problem solving of business or system data-related issues is required.

Core Business Roles – End User

- Anyone who creates, uses, and manipulates data and information to carry out their work.

Responsibilities:
- – Obligated to abide by the Custodian's governing policies and standards.
- – Understands the context in which the data or information can be used.

Contact when:
- – Business-related queries are required.

Core Technical Roles - Designer

- Expert with an organisational point of view, provide leadership on information and technology theory and practice, architecture and modelling expertise, and custodianship of the corporate design models.

- Provides and promotes a framework for consistency of data across the entire organisation.

Responsibilities:

- Organisation-wide leadership on the concept that data/information are key assets and must be managed as any other assets.
- Promoting information process principles, practices, guidelines and standards, while adhering to standards and guidelines.
- Providing a framework for defining and interpreting the organisation's corporate data and its structure (architecture, including metadata) to support the organisation's goals and objectives.
- Promoting and maintaining corporate architecture.
- Creating or validating models, and storing and maintaining the models and definitions (e.g. a metadata repository).
- Providing expertise to the organisation in improving quality across all business areas.
- Defining compelling business arguments for senior management to elicit change on future or existing data and technology issues.
- Cooperating with the Database Administrator in database design.
- Liaise across-government through the Government Modelling Capability Forum (GMCF), the Government
- Enterprise Architects New Zealand (GEA-NZ), and the Know-MAT group to develop and promote sound and consistent data practices.

Contact when:

- Analysis of the organisation's inter-relationships is required.
- Access to repositories is required.
- Standards for defining, storing, and delivering data are required.
- Responsibilities for data need to be determined.
- Models require validating and quality assurance, prior to incorporating as corporate models and transposing them into physical models.
- Deviations from defined logical structures are required.

Core Technical Roles - Administrator

- Has an organisation-wide focus responsible for the analysis, design, and creation of new databases, the physical design and implementation of new and changes on existing data and information structures and applications, and for administration and backup.

- Plans, co-ordinates, and implements security measures and manages the performance and efficiency of storage.

Responsibilities:

- Accountable for access control and derive the best possible business benefit from the use of technology.
- Building databases to support developing, maintaining, and implementing of physical data structures.
- Defining organisation-wide standards for physical data management.
- Conducting impact analysis and coordinating changes to avoid adverse impacts on applications or data.
- Ensuring that efficient data structure design and disaster recovery/backup procedures are effectively tested and implemented.
- Ensuring the transition from test environment to production environment.
- Reviewing physical data structures in consultation with the Data / Information Architect and Database Developers.
- Ensuring security administration through monitoring and administering DBMS security constraints, such as removing users, administering quotas, auditing, and checking for security problems.
- Analysing data stored in the database and making recommendations relating to performance and efficiency of that data storage. This includes the effective use of indexes, enabling "Parallel Query" execution, or other DBMS specific features.

Contact when:

- Physical models are ready for implementation.
- A need for a new business function(s) or new application(s) is identified.
- Expertise is required to resolve issues related to: data management anomalies occurring in the operation, physical data security, disaster recovery or back-up, system migration or platform standards, performance degradation.

Core Technical Roles - Developer

- Gathers data before development. Designs, develops, tests new and existing databases.

Responsibilities:

– Designs and develops database structures according to project needs.

– Create functional requirements around database structures.

– Provide assistance to others in topics related to data management.

Contact when:

– Database structures are needed for projects.

Supporting Roles - GCDO

- Ensures government-wide policy for data creation, maintenance, and use is compliant with legislation, policy and standards.

- Operationalises strategic directions for the management of IM/IT within government. The policy direction provided applies to all organisations and sector groups.

Responsibilities:

- Determines the structure for IM/IT management and decision making, in concert with senior executives from key New Zealand Government organisations.
- Is accountable for the creation of government-wide data management policy, frameworks, standards and infrastructures in partnership with Statistics New Zealand.
- Strengthens the IM/IT governance processes through strategic planning and discussion with all organisations on priorities and possibilities to leverage best practices and industry standards.

Contact when:

- Organisations are established or changed and this involves the definition of data management mandates or roles.
- New/changed information management policy or standards are proposed that affect multiple organisations, or entire sectors.
- IM/IT issues arise that require corporate consideration.
- Compliance issues arise between organisations.

Supporting Roles - ELT

- Responsible for developing the policy framework within specific line(s) of business within an organisation.

- Collectively define the strategic scope of the organisation and overall business services.

Responsibilities:

- Identifying and communicating Custodianship responsibilities within their organisation.
- Ensuring organisation Custodians liaise between their organisations and others.
- Establishing and resourcing the areas of data responsibility.
- Approving organisation policies.
- Ensuring compliance with legislation, policies and standards.
- Formally recognising and communicating the importance of information to the business.

Contact when:

- Lines of business are established or changed that require definition of data and information management roles.
- New/changed policy or legislation is proposed.
- Compliance issues arise.
- Need resourcing for data responsibilities.

Supporting Roles – Executive Sponsor

- Has strategic and managerial responsibilities for overseeing information and records management.
- Champions the importance of information and records management among the Govt. leadership.

Responsibilities:

- Ensure that the strategy and policy adopted by the organisation supports information and records management.
- Be involved in strategic and operational planning to align information and records management with the corporate objectives and business activities of the organisation.
- Liaise with business units to ensure that information and records management is integrated into work processes, systems, and services.
- Oversee the budget and ensure the resources needed to support information and records management are known and sought in funding decisions.
- Ensure that the appropriate skills are available to implement information and records management strategies.
- Monitor and review information and records management to ensure that it is implemented, transparent, and meets business needs.

Contact when:

- Lines of business are established or changed that require information and records management roles.
- New/changed policy or legislation is proposed.
- Compliance issues arise.
- Need resourcing for information and records management responsibilities.

Supporting Roles - Privacy

- Responsible for enterprise wide approach to privacy and is responsible for providing leadership, assurance and advice on privacy issues.

- This role is normally executed by a Chief Privacy Officer. Legally ensures that customer's data is safe.

Responsibilities:

- Setting the vision for privacy across the organisation.

- Ensuring privacy compliance with the strategic direction of government.

- Engaging with the Office of the Privacy Commissioner, and citizens.

- Ensuring strategic and operational plans for privacy are developed.

- Establishing and promoting the organisation's privacy policies, in alignment with GCDO policies and standards.

- Advising the GCDO on privacy issues and opportunities regarding data and information.

Contact when:

- Privacy compliance issues arise.

- Strategic direction of the organisation changes.

- Information management policy amendments or new policy is required.

Supporting Roles - Security

- Responsible for enterprise wide approach to security and is responsible for providing leadership, assurance and advice on security issues.

- This role is normally executed by a Chief Security Officer. Legally ensures that the data stays secure.

Responsibilities:

- Setting the vision for security across the organisation.
- Ensuring security compliance with the strategic direction of government.
- Engaging with the Office of the Privacy Commissioner, and citizens.
- Ensuring strategic and operational plans for security are developed.
- Establishing and promoting the organisation's security policies, in alignment with GCDO policies and standards.
- Advising the GCDO on security issues and opportunities regarding data and information.

Contact when:

- Security compliance issues arise.
- Strategic direction of the organisation changes.
- Information management policy amendments or new policy is required.

Supporting Roles – Data & Information

- Responsible for enterprise wide governance and utilisation of information as an asset, through data processing, analysis, mining, trading and other means. They report mainly to the CEO depending on the area of expertise. They are a member of the executive management team and manager of enterprise-wide data and information.

- This role is normally executed by a Chief Data Officer, Chief Information Officer, or a Chief Digital Officer. Ensures the organisation uses information management and information technology (IM/IT) efficiently, in alignment with GCIO policy, standards and directions.

Responsibilities:

- Ensuring compliance with the strategic direction of government.
- Ensuring strategic and operational plans for IM/IT are developed.
- Establishing and promoting the organisation's information management policies, in alignment with GCDO policies and standards.
- Providing IM/IT leadership and facilitating data management within the organisation.
- Advising the GCDO on information management and information technology issues and opportunities.

Contact when:

- Compliance issues arise.
- Strategic direction of the organisation changes.
- Information management policy amendments or new policy is required.

Data Governance – Principles and Artefacts
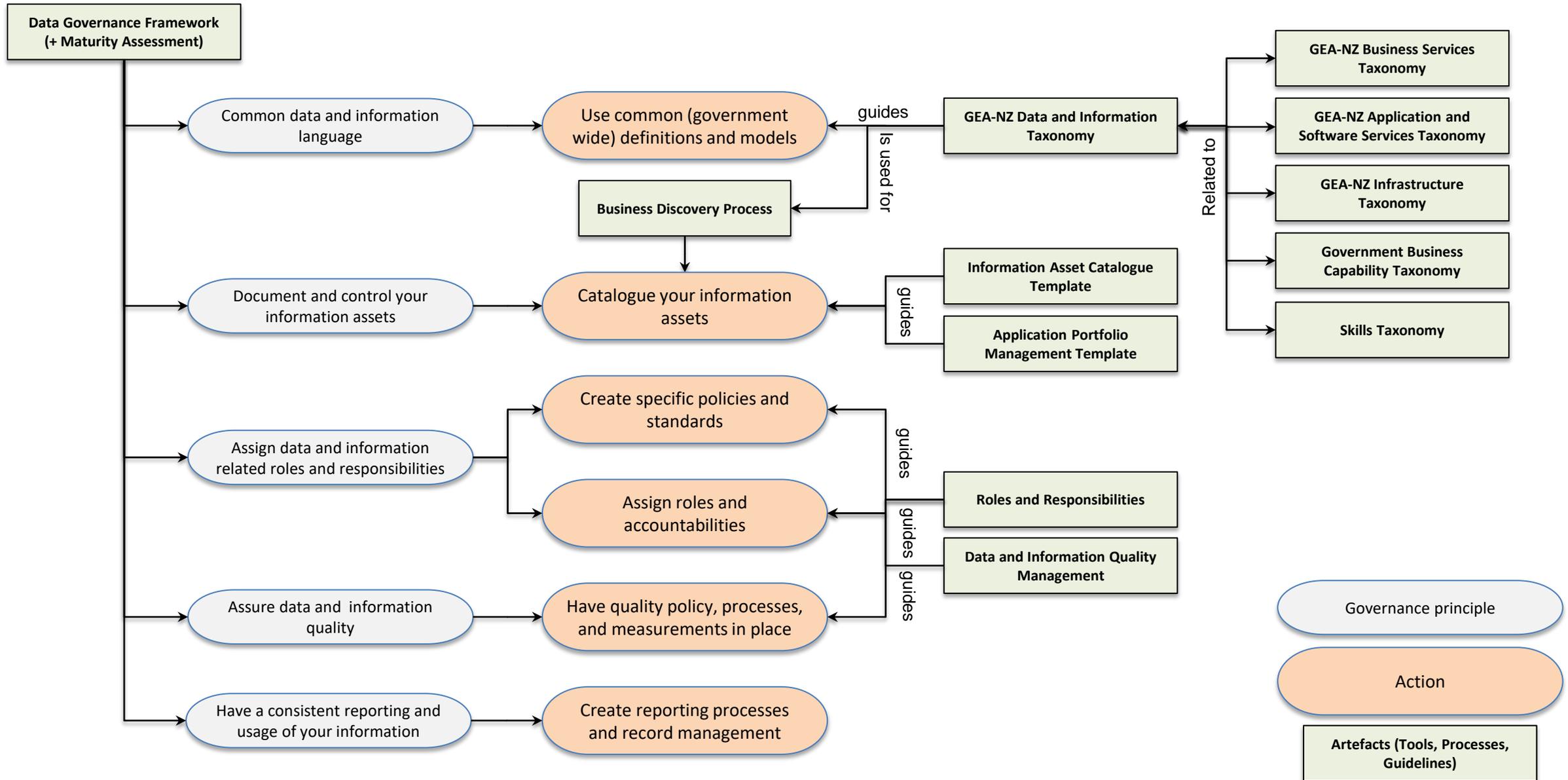
Maturity Model – Periodic Evaluation
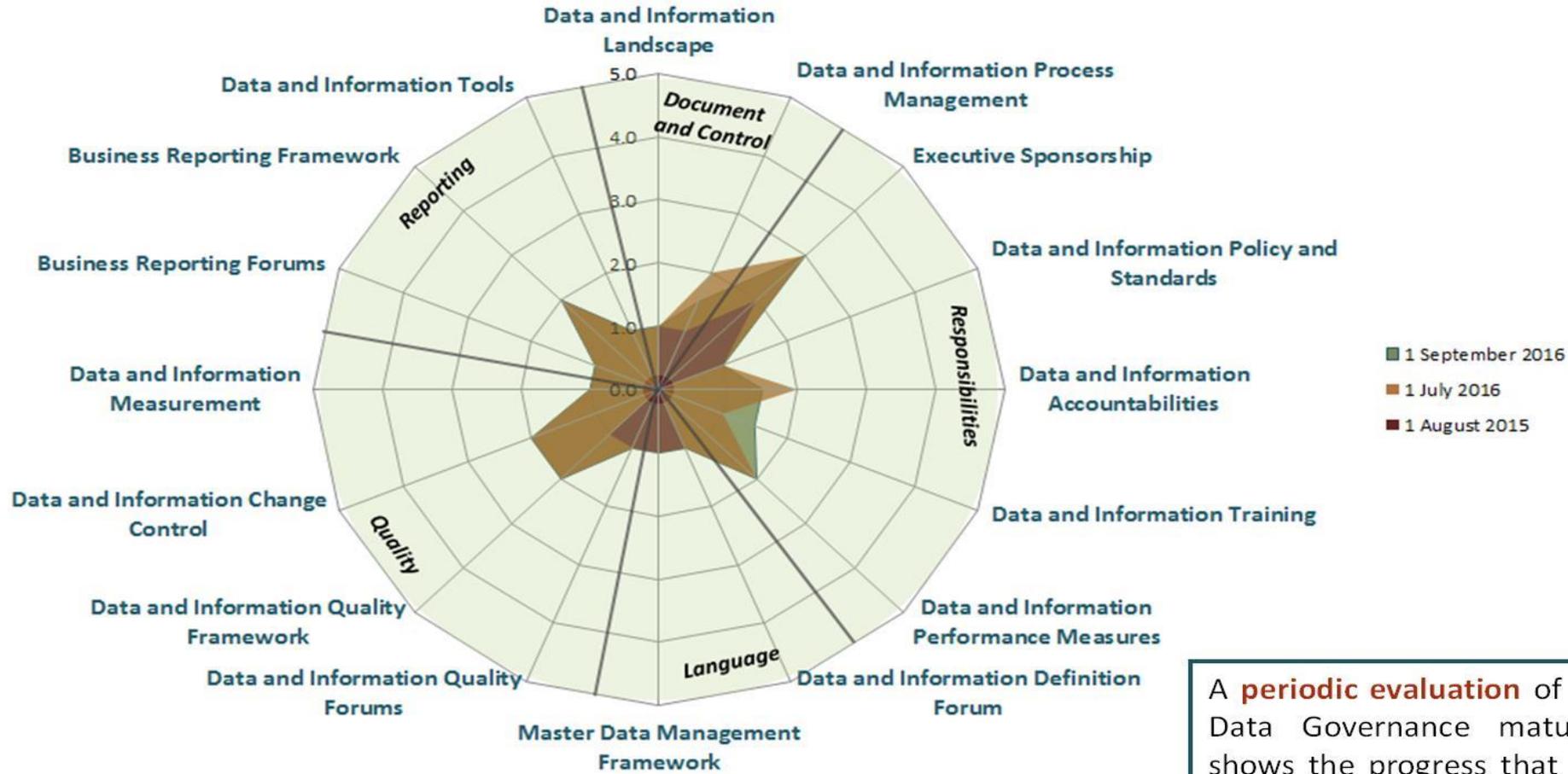
A **periodic evaluation** of the Data Governance maturity shows the progress that has been made and the focus points for the coming period.

We Share a Data and Information Language

Data and Information Definition Forum	Master Data Management Framework

Has the agency established a forum that approves data and information definitions, structures and metadata?

Note: Metadata = 'data about data". It provides information about data entity's content. For example, an image may include metadata that describes how large the picture is.

Levels

L1 No agency forum exists to oversee data and information definitions, structures and metadata.

L2 An agency forum exists which is empowered to develop processes to create common data and information definitions, structures and metadata.

L3 Common data and information definitions, structures and metadata exists and an agency specific Data and Information Definition Forum is empowered to agree data and information definitions, structures and metadata.

L4 Common data and information definitions, structures and metadata exists and an agency Data and Information Definition Forum is accountable for the control and assurance of data and information definitions, structures and metadata.

L5 Common data and information definitions, structures and metadata exists and is controlled by the agency Data and Information Definition Forum. The agency Data and Information Definition Forum challenges, scrutinises and monitors all changes to data and Information definitions, structures and metadata.

Typical Behaviours

Common areas of data are understood by stakeholders and activities/workshops have taken place to derive the definitions of the common data and information assets.

Majority of data and information assets defined and agreed via the Data and Information Steering Group. Data and information dependency understood and documented.

Data and Information Steering Group has sign-off responsibility for all business cases, data and information requirements and solution designs. IT design governance dependent on Data and Information Steering Group sign-off for data and information.

Data and Information Steering Group is actively engaged as partner for all AoG-level data and information requirements and understanding.

Typical Steps

- Data and Information Steering Group identifies the need for an agency wide Data and Information Definition Forum and identifies appropriate members to the Data and Information Definition Forum.
- Guiding principles are provided to the Data and Information Definition Forum to shape this work.

- Data and Information Definition Forum defines, agrees and documents the data and information definitions, structures and metadata for the majority of the data and information assets.
- The Data and Information Definition Forum communicates the data and information definitions, structure and metadata to stakeholders.

- Implementation of a recurring, scalable data and information definition, structure and metadata validation methodology.
- Data and Information Steering Group conducts periodic audits to assure the quality and compliance of the data and information definition, strictures and metadata.
- Data and Information Steering Group approves and oversees the use and implementation of data and information definitions , structures and metadata within projects.

- Implementation of a proactive data and information definitions, structure and metadata validation methodology for the business lifecycle.

We Share a Data and Information Language

Data and Information Definition Forum	Master Data Management Framework

Has the agency established a framework to simplify the master data and information landscape into a small number of high quality data and information assets?

Note: Master data represents the business objects, for example 'customer', 'product', 'employee', 'vendor'; which are agreed on and shared.

Levels	Typical Behaviours	Typical Steps
1 There is no agency view of core master data and information and no agreement on data and information definitions or aggregation rules and there is a poor understanding of data and information lineage.	Data and Information Steering Group has sponsored work (via Data and Information Definition Forum) to identify the data and information assets in the conceptual subject areas and agree their definitions between all business unit areas.	• Identify and agree the core master data and information assets, their definitions and aggregation rules. • Develop the first draft of the core master data and information assets lifecycle and their origins.
2 There is an agency approach to identifying differences in core master data and information definitions and developing aggregations rules with an understanding of data and information lineage.	Definition of data and information assets mostly complete and approved. Definitions exposed to wider audience via Education & Communication Forum.	• Identify, agree and document the core master data and information assets, their definitions and aggregation rules and finalize the core master data and information assets lifecycle. This forms the basis for the Master Data Management Framework. • Ensure that the master data that is identified as core is linked to business priorities. • Socialize the Master Data Framework to all business units.
3 There is an agency Master Data Management Framework in place to agree and share core master data and information definitions and to embed aggregation rules.	The Conceptual and Logical Data Model for the agency is substantively defined and agreed and all designs are based on these models.	• Design data architecture and data model according to the Master Data Framework. • Data and Information Steering Group signs off the conceptual and logical models and then governs against them to ensure compliance and their intended use. • Harmonize the master data landscape.
4 The agency Master Data Management Framework is proactively used to remove data and information redundancy in the data architecture, the data models and metadata so they contain only high quality data and information assets.	Conceptual and Logical models are defined and used as baselines for all data and information work. Physical models also defined for major platforms and applications.	• Implement of a methodology to continually monitor and refine Master Data Management processes. • Improve and optimize master data and information flows and synchronisation
5 The agency Master Data Management Framework is proactively used to remove data and information redundancy and is used to continually monitor and refine processes, which are used to control the data architecture, the data models and metadata environments.		

Department of Internal Affairs

We Document and Control our Data and Information Processes

Data and Information Landscape	Data and Information Process Management

Does the agency has a centralised approach for describing there data and information which are stored in core record systems and in excel sheets, documents, statistics...?

Levels

L1 — There are incomplete or inconsistent data and information dictionaries and there is data and information redundancy across systems. There is no process in place to ensure that data models are designed and developed in a consistent way.

L2 — Data architecture models, data and information dictionaries and data and information structures are documented, base lined and subject to change control.

L3 — A comprehensive agency data architecture has been approved and processes are embedded to reconcile the data architecture with changes to the data and information landscape.

L4 — The agency has documentation of the complete data and information landscape which is under change control.

L5 — The agency continually monitors, refines and simplifies their high level data and information landscape.

Typical Behaviours

- IT Systems landscape documented but the end user tools which handle data and information are not documented or understood.

- IT Systems and critical end user tools are understood and documented into an data and information landscape. Data and information flows across the landscape is understood.

- There is a single metadata repository implemented and core to all business unit data and information definition and design processes. The repository is exposed agency-wide to all stakeholders via wiki interface.

- Full end-to-end lifecycle for data and information known and documented - this covers all IT systems and major end user tools. The end user tools are markedly smaller than was originally and is critically appraised for whether they should still be in use.

Typical Steps

- Agree and document approach for an initial stock take.
- Create a central repository for the validated data and information definitions, create an inventory of data sand information assets and repositories and data models.
- Map flows between repositories and sources .

- Undertake gap analysis between the validated data and information definitions, data and information structure and meta data and the data architecture.
- Identify processes and implement a method for changes to the data and information landscape using the data architecture.

- Extend the stock take to complete the data and information landscape including the landscape of the end user tools.
- Extend repository to incorporate all data and information assets meta data.
- Implement governance over the central repository for change control.

- Implement a method to continually modify, refine and simplify the data and information landscape.
- Reduce the net number of data and information movements and rationalize duplicate repositories.

We Document and Control our Data, Information and Processes

Data and Information Landscape	Data and Information Process Management

Is there a shared understanding across the agency that data and information processes are tightly coupled?

Note: One cannot happen without the other.

Levels	Typical Behaviours	Typical Steps
L1 There are only a few key data and information assets and processes defined, and no agency rules exist regarding data and information process management.	There is recognition that data and information processes are intrinsically entwined, but only major business processes are documented end-to-end. The End User Computing landscape is covered in hap-hazard fashion.	• Using the data and information landscape document, at least at maturity level 2, together with the agency business process landscape, the Data and Information Steering group defines an approach for data and information process management • Data and Information Steering Group identifies which processes and data and information assets are key to the agency and sets priorities based on the relative value.
L2 An agency approach has been defined and developed to map key data and information flows end to end for key business processes.	Functional process and data and information flows are modelled, understood and under change control. Solution architecture starts to re-use common flows.	• Data and Information Steering Group maps the key data and information assets with the key business processes to document key data and information flows. • Key data and information flows documentation is incorporated in to the solution architecture. • Projects are required to explicitly consider data and information flows and migration in there scope and solution architecture.
L3 The agency manages data and information processes and maps data and information flows to business process activities.	Agile and What-if scenarios are applied to potential re-development of data and information flows and processes. Efficiencies aggressively sought and satisfied. Waterfall methodology almost non-existent. Time to market for new or improved capabilities is much shorter. Release management on a weekly basis via sprint cycles.	• Key data and information flows documentation is under full change control with oversight form the Data and Information Steering Group. • Embed the key data and information flow documentation in the business process lifecycle and the PMO governance processes. • Projects have to follow agreed data and information solution patterns.
L4 Agency data and information process management practices require key data and information controls to monitor data and information flows through business processes. Data architecture informs these practices.	Full target landscape for data and information processes documented and understood. Investment is mainly in implementing Straight-Through-Processing and decommissioning legacy IT and End User Computing platforms.	• Data and Information Steering Group periodically reviews the key data and information flows implementations within the business process lifecycles to ensure data and information process change control compliance is met. • Proactively assess and improve the data and information process management practices across business units. • The annual business planning process includes
L5 The agency continually monitors, refines and simplifies their data and process management activities.		

Department of Internal Affairs

We Embed Our Data and Information Responsibilities

Executive Sponsorship	Data and Information Policy and Standards	Data and Information Accountabilities	Data and Information Training	Data and Information Performance Measures

Is the concept of Data and Information Governance recognised by executives as a requirement for the agency? Do they understand the need for high quality data and information to be used to run and manage the agency?

Levels

L1 No executive management sponsorship.

L2 The importance of data and information is recognised by executives and there is an agency Data and Information Steering Group in place at executive level. The Data and Information Steering Group oversees the data and information quality, usage and governance.

L3 The Data and Information Steering Group owns data and information policy but the "Information is managed as an asset" maxim not fully understood.

L4 The Data and Information Steering Group owns the data and information policy. Data and information is viewed as an asset and actively sponsored by executive management.

L5 There is shared decision making and control over all data assets through the Data and Information Steering Group.

Typical Behaviours

Tier 2 level roles are formally identified as sponsors of data and information governance.

All Tier 2 level roles have shared responsibility for data and information governance.

Tier 2 level roles have responsibilities and accountabilities within role descriptions. These responsibilities trickle down to roles in each business unit.

Agency has a Chief Data and Information Officer who has accountability for all data and information. Other tier 2 roles have responsibilities aligned to all data and information assets.

Typical Steps

- Establish a business case for better data and information management.
- Promote the need for data and information governance to tier 1 & 2 executives.
- Identify and appoint tier 2 level roles as sponsors of data and information governance into a Data and Information Steering Group.

- Identify and agree the data and information policy.
- Agree with sponsors the ownership of the data and information policy.
- Communicate the data and information policy to all business units.

- Identify, agree and document the responsibilities and accountabilities for data and information assets.
- Embed these responsibilities and accountabilities into role descriptions in each business unit.

- Embed responsibilities and accountabilities for ALL data and information assets into role descriptions.
- Employ a Chief Data and Information Officer who is responsible for agency-wide governance and utilisation of information as an asset, via data processing, analysis, data mining, information trading and other means.

Department of Internal Affairs

# We Embed Our Data and Information Responsibilities

Executive Sponsorship	Data and Information Policy and Standards	Data and Information Accountabilities	Data and Information Training	Data and Information Performance Measures

Is there an Data and Information Governance policy active within the agency?

Note: The policy should be concerned about the importance of the correct use of data within the agency, not just about Information Security.

Levels

L1 No agency wide data and information policy and standards, and few (if any) data and information rules or processes exist.

L2 Data and information policy and standards exists but are not embedded. A gap analysis has been undertaken to assess policy compliance.

L3 The policy and standards are embedded and leveraged by all business units. Management oversight and periodic testing are in place to embed policy and assure compliance.

L4 Data and information policy and standards are integrated into design and operation of business processes, as well as well as attended to project gates.

L5 Data and information policy and standards are integrated into business processes. Data and information process documentation are a valuable source for continual improvement and development of practices and controls.

Typical Behaviours

Data and information policy and standards are defined and approved, though not socialised or fully understood at the business unit level.

Gap analysis is completed and operational risks are raised for areas of non-compliance.

All data and information processes mapped, agreed and approved. Requirements and solution design timescales reduced by > 50%

Data and information policy knowledge and compliance a core skill for all roles within the agency.

Typical Steps

- Confirm the value drivers for better data and information management.
- Define guiding principles for data and information management.
- Create the data and information policy and standards document.
- Perform gap analysis between 'as is' and data and information policy compliance.
- These documents need to be signed off by Data and Information Steering Group.
- The signed off data and information policy and standards are communicated to all business units.

- Each business unit needs to embed the data and information policy and standards in to their business unit processes.
- Data and Information Steering Group conducts periodic audits to assure compliance.

- Data and information policy and standards rules need to be in place for all new designs.
- New designs can only be signed off by the Data and Information Steering Group if compliance is reached with the data and information policy and standards.
- Project control points including data and information readiness check lists.

- Every role and process description has the data policy and standard behaviors embedded.
- Date and Information Steering Group reviews the data and information policy and standards periodically to improve practices and controls for the agency.

Department of Internal Affairs

We Embed Our Data and Information Responsibilities

Executive Sponsorship	Data and Information Policy & Standards	Data and Information Accountabilities	Data and Information Training	Data and Information Performance Measures

Are managers and staff aware of the accountabilities they have when gathering, processing and using data and information beyond any applicable statutory obligations?

Levels

L1 Data and information accountabilities not defined and any governance is reliant on key individuals.

L2 Data and information accountabilities are defined but are not embedded in day to day practice. Analysis has been undertaken to highlight policy compliance gaps.

L3 Data and information accountabilities are defined and embedded in day to day practice. Compliance gaps have been resolved.

L4 Data and information accountabilities are defined and embedded in day to day practice. They are monitored and reviewed in line with strategic data and information requirements.

L5 Data and information accountabilities are defined and embedded in day to day practice, and continually monitored and reviewed. They underpin that data and information is a valuable asset throughout the agency.

Typical Behaviours

Proposed data and information accountabilities understood at Data and Information Steering Group level but not socialised or understood elsewhere in agency

Concept of responsibility and accountability defined and socialised

Specific responsibilities and accountabilities documented and measured from tier 2 level and dependent Subject Matter Experts in each business unit.

Data and information responsibilities and accountabilities are clear for all roles within the agency.

Typical Steps

- The Data and Information Steering Group needs to define what the data and information accountability means for the agency, for business units and roles.
- Document the data and information accountabilities for agency, for business units and roles.
- Perform gap analysis between 'as-is' and data and information policy compliance.
- The Data and Information Steering Group signs off the data and information accountabilities.

- The data and information accountabilities are communicated to all business units.
- Each business unit needs to fully integrate the signed off data and information accountabilities into their day to day practice and behaviours.

- The Data and Information Steering Group conducts periodic audits to assure compliance.
- Data and information accountabilities need to be in place for all new data and information assets and data changes.

- The Data and Information Steering Group reviews the data and information accountabilities periodically to improve practices and controls for the agency.

Department of Internal Affairs

# We Embed Our Data and Information Responsibilities

Executive Sponsorship	Data and Information Policy and Standards	Data and Information Accountabilities	Data and Information Training	Data and Information Performance Measures

Has any data and information training been organized and performed?

Levels	Typical Behaviours	Typical Steps
L1 No requirements for data and information training have been identified or recognised.	The need for data and information training recognised but no formal training developed or undertaken.	• Develop training needs assessment. • Create a value proposition to highlight the need for data and information training. • Promote that value proposition to tier 1 & 2 executives. • Create a high level data and information training roadmap. • Conduct a policy compliance analysis. • Use the result from the compliance analysis to identify data and information training requirements.
L2 Policy compliance analysis is used to identify data and information training requirements. A data and information training roadmap exists.		
L3 Business unit-level data and information training is used to embed data and information policy.	Compliance training at a basic level for all staff defined and delivered.	• The Education and Communications Forum identifies needs for all staff. • Develop compliance training material. • Roll out the data and information trainings
L4 Business unit-level data and information training is used to embed data and information policy and enhanced to support data and information measurement.	Specific role-based training for data and information awareness, responsibilities and accountabilities developed and delivered.	• The Education and Communications Forum enhances the data and information training to include data and information measurements • Roll out the advanced data and information trainings
L5 Business unit-level data and information training is used to embed data and information policy and enhanced to support data and information measurement and to prevent defects and drive efficiencies.	All employees fully aware of specific responsibilities and accountabilities for data and information for their role and for those in up-stream and down-stream business processes/units.	• The Education and Communications Forum enhances the data and information training to include data and information defect prevention. • Develop training for data and information diagnostic and process improvement areas. • Roll out the expert data and information training.

Department of Internal Affairs

We Embed Our Data and Information Responsibilities

Executive Sponsorship	Data and Information Policy and Standards	Data and Information Accountabilities	Data and Information Training	Data and Information Performance Measures

Are there any performance measures applied at the individual role or business-unit level for staff who are tasked with gathering, processing and using data and information?

Levels

L1 No data and information measures exist to assess individual data performance.

L2 Basic data and information measures are defined to assess data and information performance of key individuals.

L3 Data and information measures are defined and embedded with data and information accountabilities for all staff.

L4 Data and information measures are defined, embedded with data and information accountabilities and actively used to assess staff performance.

L5 Data and information measures are defined, embedded with data and information accountabilities and used for continual improvement and development of data practices and controls.

Typical Behaviours

The need for data and information measures is recognised but no formal work having has taken place.

Specific training, at business unit and individual level has been defined and delivered.

Data and information measures and dependencies defined and understood at agency and business unit level – these are continually reviewed.

Agency, business unit and individual performance metrics established and actively measured. Employee contracts specifically include data and information performance measures.

Typical Steps

- Based on the data and information management business case, KPI's and metrics are defined for tracking.
- The Data and Information Steering Group defines what data and information performance measures mean for the agency.
- Basic data and information performance measures are defined, tested and assessed against data and information policy and standards.
- Basic data and information performance measures are documented and signed off and assigned to key individuals by the Data and Information Steering Group.

- Data and information performance measures are defined, documented, and signed off by Data and Information Steering Group.
- Data and information performance measures communicated to all business units.
- Business units embed the data and information performance measures in to their business processes.
- Individuals are assessed against compliance and pragmatism.

- Data and information performance measures are integrated with data and information accountabilities for role descriptions.
- Data and information performance measures become actively used to assess staff performance and to drive improvements in data and information quality.

- Data and Information Steering Group reviews the data and information performance measures periodically to improved practices and controls for the agency.

We Assure Our Data and Information Quality

Data and Information Quality Forums	Data and Information Quality Framework	Data and Information Change Control	Data and Information Measurement

Does the agency have a forum established , sponsored by executives, which is accountable for the data and information quality?

Levels

L1 No agency forum exists to oversee data and information quality.

L2 There is an agency forum, supported by all business units, empowered to develop a Data and Information Quality Framework for business units.

L3 An agency specific Data and Information Quality Forum exists which is empowered to embed agency Data and Information Quality Framework to support development of strategic data and information capabilities.

L4 An agency Data and Information Quality Forum exists and is accountable for the control and assurance of high quality data and information.

L5 The agency Data and Information Quality Forum controls and assures the high quality data and information challenges, scrutinises and monitors all data and information quality and remediation activities.

Typical Behaviours

Data and Information Quality Forum exists under banner of Data and Information Steering Group but doesn't recognise full scope of data and data quality measures. Tends to be system-driven rather than data and information-driven.

Data and Information Quality Forum definition and responsibilities understood and documented. Data and Information Quality measured in Golden Source platforms. Statutory guidance given about where high quality data and information is to be used/sourced from.

Data and Information Quality Framework for all data and information assets are documented and continually assessed. Front-line systems provide full validation OR active Data and Information Quality measurement performed on data from non-compliant platforms.

Data and Information Quality remediation a diminishing task as controls and measurement happen at the beginning of the business lifecycles.

Typical Steps

- Develop a value proposition for high quality data and information.
- Data and Information Steering Group identifies appropriate members for the Data and Information Quality Forum, comprising of tier 2 executives.
- Data and Information Quality Framework developed, documented and endorsed by Data and Information Steering Group.
- Data and Information Quality Framework is communicated to all business units.

- Define the system of record (golden source) to a given data and information asset.
- Develop master data and information management strategy.
- The Data and Information Quality Framework is embedded in to business units day to day operations.
- Communication of definitions and responsibilities is undertaken to stakeholders.
- Agreement by Data and Information Quality Forum on what needs to be assessed, when and how.

- Implementation of a recurring, scalable data and information quality assessment and validation methodology.
- Data and Information Steering Group conducts periodic audits to assure Data and Information Quality Forum compliance.
- Implement Master Data Management technology.

- Implementation of a proactive data and information quality assessment and validation methodology across the whole business lifecycle.

We Assure Our Data and Information Quality

Data and Information Quality Forums	**Data and Information Quality Framework**	Data and Information Change Control	Data and Information Measurement

Is there a Data and Information Quality Framework, which includes data and information definitions, reference data and information, metadata; and formalizes high quality data and information assurance?

Levels	Typical Behaviours	Typical Steps

L1 — There is no agency approach for high quality data and information assurance.

Data and Information Quality measures for some data and information assets understood and enacted. Full life-cycle of data and information usage not fully understood or documented.

- Identify and agree core data and information assets.
- Develop an inventory of core data and information assets and systems.
- Develop first draft of the core data and information asset lifecycle.
- Identify candidate quality measurements.

L2 — An agency Data and Information Quality Framework has been developed and adopted by all business units.

All data and information assets have definition and quality metrics understood and used. Dependency between business units understood and socialised.

- Identify and agree on all data and information assets.
- Identify and document high level quality measurements
- Finalize data and information lifecycle.
- Establish priorities based on the underlying business case.
- Document and socialize data and information quality framework to all business units.

L3 — An agency Data and Information Quality Framework exists and is embedded in the processes of all business units.

Quality metrics embedded within data and information validation and movement. ETL processes (where appropriate) provide Data and Information Quality measurement.

- Embed the data and information quality metrics in the agency
- Deploy quality metrics in appropriate data and information transfer.
- Measure baseline improvements and track benefits.

L4 — An agency Data and Information Quality Framework exists and is embedded in all business units' processes. Agency oversight and testing has been extended to incorporate testing data and information quality (via audits / assurance / reviews).

Continual Data and Information Quality improvement takes place across entire IT and (diminishing) End User Computing landscape.

- Implement a method to continually improve the data and information quality measurement using the Data and Information Quality Framework.
- Continuously improve by scanning for optimization opportunities.

L5 — The agency Data and Information Quality Framework is used to do high quality data and information measurements, drive root cause analysis and to remediate data and information quality issues by designing defect prevention controls.

Department of Internal Affairs

We Assure Our Data and Information Quality

Data and Information Quality Forums	Data and Information Quality Framework	Data and Information Change Control	Data and Information Measurement

Is data and information considered within the change management lifecycle?

Note: Change control for data and information is as important as change control for business processes and IT platforms.

Levels

L1 Business units implement data changes without agency control or oversight.

L2 The agency change management lifecycle is enhanced to include data architecture, data and information language, validation, transfer and delivery of high quality data and information standards and management.

L3 The agency has an integrated change control across business units which includes data architecture, data and information language, validation, transfer and delivery of high quality data and information standards and management..

L4 The key business units are consulted on and empowered to challenge and sign off all data and information changes.

L5 All changes relating to data and information governance, quality, management, key reporting are scoped, defined and impact assessed by the agency Data and Information Steering Group. Business units monitor and challenge all data changes/issues as they arise.

Typical Behaviours

Data Architecture principles understood and implemented. Data and Information Steering Group has sign-off on all data and information work.

All data and information work is controlled via Data and Information Steering Group approval mechanism. Templates for business & IT project work embedded in business case lifecycle.

Data and information awareness across all business units and IT is well understood. Portfolio view is predominantly about data and information process. Less 'point' solutions proposed or required.

Change control process is predominantly about the changes needed for new data and information assets (via wider government and legislation). Internally, change control drives system enhancement and requirements / solutions.

Typical Steps

- Data and Information Steering Group's data architecture documentation is incorporated in to the agency change management lifecycle.
- Data and Information Steering Group commissions a comprehensive data architecture training programme agency wide through the Education and Communication Forum.
- Data and information change processes are developed/improved to ensure all data and information related changes come though the Data and Information Steering Group.
- Data and Information Steering Group has signoff authority for all data and information changes.

- Data and Information Steering Group developed templates and documentation embedded into project templates in the business case lifecycle.
- Documented and communicated to all business units.
- All business units embed the data and information change control process in their day to day practice.

- Build formal impact assessment tools and collateral to support the analysis of proposed changes,
- The Data and Information Steering Group delegates change and signoff authority to key business unit s for their core data and information changes with Data and Information Steering Group oversight.
- The Data and Information Steering Group evaluates the impacts of the data and information change control within each business unit.

- The Data and Information Steering Group periodically reviews the data and information change control practices within the business units to ensure data and information change control compliance is met.
- Proactively assess and improve the data and information change control practices across business units.
- Develop roadmaps with priorities to plan out substantive data changes for strategic improvements

Department of Internal Affairs

We Assure Our Data and Information Quality

Data and Information Quality Forums	Data and Information Quality Framework	Data and Information Change Control	**Data and Information Measurement**

Is there a guide for data and information measurement, i.e. to perform data and information quality analysis and/or data and information profiling across major IT platforms and end user computing assets?

Levels

L1 There is no consistent approach to data and information measurement.

L2 Processes have been developed to assess data and information quality, validation and remediation.

L3 Processes are embedded to assess data and information quality, validation and remediation.

L4 Processes are embedded to assess data and information quality, validation and remediation. The development of real time data and information measures is integrated into process improvements (for example Lean Six Sigma).

L5 Data and information measures and related KPIs are integrated into processes and are used to drive strategic data and information investments decision and to provide predictable and measurable ROI benefits.

Typical Behaviours

Processes and documentation for some major data and information assets are known and enacted though not consistent over the systems landscape

Data and information definition and quality metrics (including correct use of reference data) now documented in Data and Information Asset Catalogue and used as requirements for system remediation

Data and Information Quality measurement (both automatic and manual) are in place for major areas of IT and End User Computing landscape.

Data and Information Quality measurement in place across all major IT and End User Computing platforms, as well as for incoming and outgoing data and information ensuring Straight-through processing is the norm.

Typical Steps

- Data and Information Quality Forum, through the Data and Information Quality Framework, identifies data and information measures.
- Data and Information Quality Forum develops and documents processes to align with the data and information measures, including data and information remediation practices.
- Major data and information assets are identified and documented.
- Priorities are established based on business value.

- Embed processes so that data and information quality issues are identified and can be acted on proactively.
- Data and Information Quality Forum to document Data and Information Definitions and Quality Metrics.
- Outline which data and information assets should reside in what major systems.
- Begin identifying major End User Computing.

- Operationalize the performance measures in the major systems and extend this to End User Computing.
- Integrate data and information quality measurement into business processes and begin process improvement.
- Reuse data and information process baselines and track benefits.

- Use the optimized processes to simplify the system landscape and being adopting architectures like straight-through processing.
- Integrate data and information measures with KPI's and use these measures as a foundation for IT investments.
- Extend data measures across all systems and End User Computing solutions .

Department of Internal Affairs

We Use Our Data and Information Wisely

Business Reporting Forums	Business Reporting Framework	Data and Information Tools

Does your agency have a centralised coordinated reporting process?

Levels

Typical Behaviours

Typical Steps

L1 — Agency reporting processes are not known, unclear or ad hoc.

Data and Information Steering Group includes an element of "critical" reporting. Unclear as to dependency between IT and End User Computing landscapes.

- Data and Information Steering Group defines and documents the roles and responsibilities for key reporting process and communicates them key business units.
- Key reporting processes are captured, documented and communicated.

L2 — The agency has defined roles and accountabilities for key reporting processes.

Data and information underpinning critical reports well understood and documented. Proper analytical capability being built. Start to see end user computing landscape diminishing.

- Data and Information Steering Group establishes the Business Reporting Forum with the mandate to develop strategic capability to improve key reporting processes and aligns with data policy.
- Reports are harmonized and overlaps are rationalized.

L3 — The agency has established a Business Reporting Forum to identify and develop strategic capabilities for key reporting processes.

All round awareness of the data and information world is apparent across the agency. Very few requests for management information or analytics cannot be satisfied within a day. Enterprise Data Warehouse substantively implemented.

- Strategic capabilities further enhanced for key reporting processes.
- Enterprise Data Warehouse is implemented.
- Data and information subject areas are controlled across the different business units.

L4 — The agency Business Reporting Forum is empowered to develop and embed strategic capabilities for key reporting processes.

True Enterprise-level Data Warehouse implemented and continually improved in line with Data/Process changes.

- The Business Reporting Forum reviews the key data reporting processes ensure compliance is met.
- Business Reporting Forum proactively assess and improves the key reporting processes across business units.
- Audits and data and information quality health checks provide objective feedback and reporting quality

L5 — The agency Business Reporting Forum is empowered to develop and embed strategic capabilities for key reporting processes. It challenges, scrutinises and oversees all changes for key reporting processes.

Department of Internal Affairs

We Use Our Data and Information Wisely

Business Reporting Forums	Business Reporting Framework	Data and Information Tools

Does your agency understand and promote the implementation of a framework that allows comprehensive and timely reporting from a central repository?

Levels	Typical Behaviours	Typical Steps

L1 — Agency reporting processes are unclear or poorly documented and are often manual and labour intensive.

Dependencies for data and information for critical reports is known and documented though a combination of IT and End User Computing is still prevalent.

- Business Reporting Forum identifies the key data and information processes required for reporting.
- Requirements are documented and communicated to all business units.

L2 — There is an agency approach to document and control the data and information processes for reporting.

Design for data warehouse mostly complete. Less justification for end user computing . Ad-hoc creation of reports via end user computer is robustly challenged by Data and Information Steering Group.

- Key data and information process documentation is complete forming the basis for the Business Reporting Framework.
- Business Reporting Framework is socialized to key business units.
- Key dimensions and KPI's are conformed across the business.

L3 — There is an agency Business Reporting Framework in place to agree and control the data and processes for reporting.

All business units & executives have common understanding of data and information requirements. Enterprise Data Warehouse design complete and widely understood.

- Business Reporting Framework is proactively used to ensure compliance is met for key data and information business processes required for reporting.
- Data "scrubbing" and cleansing rules are documented and formalised.
- Data and information quality and consistency checks are formalised and embedded in the ETL framework that underpins the reports.

L4 — The agency Business Reporting Framework is proactively used to monitor and control the data and information flows and processes for reporting .

All business units and tier 2 have access to information they require intra-day and inter-day. The agency able to satisfy external enquiries from wider government perspective and regulator efficiently and with confidence that the supplied information is correct.

- Business Reporting Framework is under full change control by the Business Reporting Forum and is used for continual improvement for both internal and external reporting.
- Changes to KPI's, data and information definitions and rules are formally controlled with proper reasoning.

L5 — The agency uses the Business Reporting Framework to control, monitor and continually refine and simplify the data and information flows and processes for reporting.

We Use Our Data and Information Wisely

Business Reporting Forums	Business Reporting Framework	Data and information Tools

Does the agency understand and exploit the capabilities of data and information tools?

Note: Data and information tools can include: data and information profiling, modelling, management, reporting and analytics.

Levels

L1 Any data and information tools are employed haphazardly and without governance or alignment to data and information accountabilities.

L2 Agency data and information policy covers accountability for data and information tools.

L3 Agency data and information policy mandates the consistent use of defined data and information tools for specific purposes.

L4 The agency data and information governance accountabilities are embedded into key data and information tools. Advanced tools are used to support data and information quality, architecture, mapping or reporting.

L5 Advanced data and information tools are used throughout the agency to enable proactive monitoring and management of data and information issues and to support a defect prevention culture.

Typical Behaviours

Clarity on toolsets required for data and information management, operational and analytical use is clear. Architecture framework established.

Toolsets identified and used. Use of similar toolsets challenged robustly. End user computing landscape decreases. Systems identified as "Masters" for data and information sets.

Data and Information Steering Group periodically assesses tooling and purpose across key business units .
Data and Information Steering Group proactively supports the removal of duplicate and/or redundant tools across key business units. A roadmap with priorities and future tool capability is developed.

Data and information toolsets are integrated and used co-operatively. Single implementation of data and information capabilities is the norm, i.e. no multiple Extraction – Transformation- Load or profiling tools.

Typical Steps

- Define the necessary data and information tools based on requirements.
- Extend the agency data and information policy to include data and information tools, their purpose and their associated accountabilities.
- Align data and information policy with the enterprise architecture polices, with a particular focus on tool requirements and their specific integration points.

- Data and Information Steering Group mandates the use of tools along with their purposes.
- Data and Information Steering Group assigns particular systems as "masters" for particular data and information sets.
- Communicate the tools, their purposes and masters for data and information sets to key business units.

- Embed data and information governance accountabilities and management activities in to respective data tools.
- Data and Information Steering Group oversees the compliance of the data and information governance accountabilities for tools and their purpose.
- Agency introduces advanced tooling based on the data and information policy and clear purpose for the tool to help support data architecture, data and information policy, mapping and reporting.
- Data and information related KPI's are captured, tracked and monitored through the tools.

- Data and Information Steering Group periodically assesses tooling and purpose across key business units .
- Data and Information Steering Group proactively supports the removal of duplicate and/or redundant tools across key business units.
- A roadmap with priorities and future tool capability is developed.

Department of Internal Affairs

What needs to be in place in an organisation

**Government Enterprise Architecture
of
New Zealand**

Data and Information Quality Management Guidelines

New Zealand Government

Plan

To *Plan* is typically to create a list of steps with timing and resources, used to achieve an objective to do something. It is commonly understood as a temporal set of intended actions through which one expects to achieve a goal. Plans can be formal or informal.

Document / Record

To *Document / Record* is to write, photograph, or capture information in any form (structured or unstructured) that provides evidence or serves as an official record.

Execute

To *Execute* is to put a plan or course of actions into effect.

Control / Monitor / Evaluate

To *Control / Monitor / Evaluate* is to exercise restraining or directing influence over the execution of an action, to regularly check something or watch someone in order to find out what is happening, and to determine the significance, worth, or quality of the results.

Eight Dimensions of an Organisation
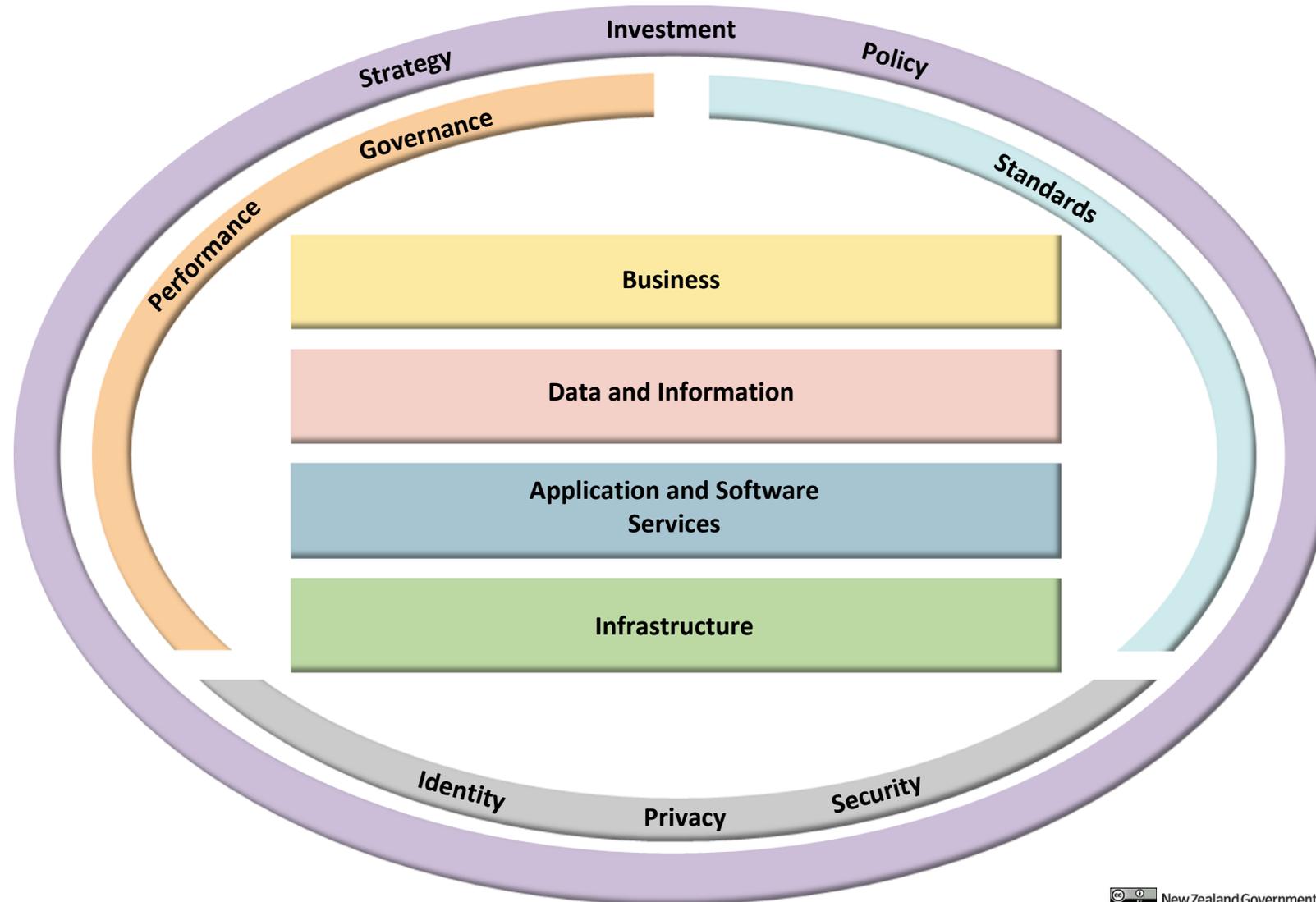
Business Dimension

Business	
Plan	• Staff Roles & Skills • Product & Service Life-cycle • Revision & Change • Initial Data Entry & Setup • Ongoing Data Maintenance
Document / Record	• Customer Criteria • Channel Strategy • Product & Service Documentation • Governance Organisational Structure • Delivery Methodology • Customer Feedback & Follow-up • Personal Objectives
Execute	• Education & Awareness • Customer Feedback Resolution • Product & Service Management
Control / Monitor / Evaluate	• Internal & External Feedback Controls • Review of Personal Objectives • Product & Service Controls • Workflow Controls

Business Dimension

📇⏱ **Plan**	
Staff Roles & Skills	Define and clarify the exact profile of each one of the roles that are needed to successfully manage a DIQM system within the organisation and plan the resources needed to support these roles. Other aspects that need to consider in the planning are the behaviours, expectations, the tasks those roles must, but also should do. Establish a customer representative role to reduce customer burden.
Product & Service Life-cycle	Develop a general strategy for managing information, according to the value of the information asset, that reflects the business, customer, and staff needs for each of the phases in the product and service's life-cycle. Also to take in consideration is the Memorandum of Understanding (MoU) or any other agreements with 3th parties. At the End-of-Life, there are some aspects that needs to be defined and planned: destruction, retention, and any archiving issues.
Revision & Change	Plan the steps to ensure changes in the product and services' information is reflected to any future use, change, or access to that information. Establish the value of your information assets, the security controls, the reason for change, and the requirements for tracking, auditing, recording, storing, and access control according to the value and the cost.
Initial Data Entry & Setup	Define a process for the initial set up of product, service, and process information in the organisation's back-end systems so that all data entered is only entered when verified to be reliable. Tracking provenance and verifying authenticity.
Ongoing Data Maintenance	Define a process for the continuous update and maintenance of data that has been set up so that it is always relevant and up to date with the latest changes in the product and services.

Business Dimension

	📄 Document / Record
Customer Criteria	Create formal documentation of the customer's criteria they need to have to interact with the organisation, what product and services they need and which customers need additional assistance. Define what is expected from the customer, the impact on then, and what is seen as success when resolving issues. Communicate this to the customers.
Channel Strategy	A formal high-level plan for the Government's online activities and interaction with all citizens, this to ensure that the Government and all its customers interact effectively and productively online.
Product & Service Documentation	Documentation that accompanies product and services, outlining the business rules, purpose, development, design, technical configuration, terms, etc.. Use of standardised terminology is highly recommended. Make sure all areas of the organisation know what is what and where it is.
Governance Organisational Structure	Ensure that the governance model defined for the organisation during the planning phase is properly documented and made available to everyone within the organisation. Clearly state the accountability throughout? the organisation.
Delivery Methodology	Formally document the delivery methodology for information management best practices. Its scope covers the complete information supply chain within an organisation: from how it is created, accessed, presented and used in decision-making to how it is kept secure, stored and destroyed.
Customer Feedback & Follow-up	Establish direct access for queries, complaints, requests, follow-ups, etc. and formally document, management and process those.
Personal Objectives	Integrate DIQM KPIs into staff objectives according to their roles and responsibilities.

Business Dimension

	Execute
Education & Awareness	Run a compulsory information management module for all staff. Conduct the necessary education programmes needed to ensure people understand their role and responsibility in DIQM. Engage in communications across the organisation to educate people in the policy, procedures, and guidelines in place they need to follow to help the organisation achieve high quality data and information.
Customer Feedback Resolution	Implement or update procedures to process and resolve customer feedback. This includes testing and checking identified issues 'Are they what they seem to be'.
Product & Service Management	Carry out activities to measure and manage products and services to continuously evaluate the metrics and conduct improvements/corrective actions whenever necessary to achieve the desired quality of information around the products and services. Define appropriate and meaningful metrics (not just numbers, also identify of the value of information asset) Execute periodic reviews of what is the customer experience of the service.

Business Dimension

👁 Control / Monitor / Evaluate

Internal & External Feedback Controls	Monitor compliance level of process, data and information to the expected performance criteria across the DIQM in order to measure the degree in which the organisation adheres to the defined policies and standards. Use legislative requirements to articulate and track process procedures.
Review of Personal Objectives	Together with the person, review the degree of progress that they made in regards to their personal objectives towards data and information quality.
Product & Service Controls	Ensure that the methodology for conducting product and service inspection is always followed when executing product and service measurements, either within a monitoring audit, a first measurement of new product and service or as part of the maintenance process of data. Execute periodic reviews of what is the customer experience, the process, etc. of the service.
Workflow Controls	Monitor compliance level of the process and its data output to the expected performance criteria across the DIQM system in order to measure the degree in which the organisation adheres to the defined policies and standards.

Data and Information Dimension

Data and Information	
Plan	• Data Stewards • Data & Information Quality Improvement Plan • Initial Data Entry & Setup • Ongoing Data Maintenance • Architecture & Design
Document / Record	• Information Asset Catalogue • Data & Information Taxonomy • Data & Information Quality Management
Execute	• Education & Awareness • Data Cleansing • Data Profiling • Data Validation
Control / Monitor / Evaluate	• Data & Information Quality Controls • Monitor Impact of Inadequate, Missing, or Wrong Data

Data and Information Dimension

Plan	
Data Stewards	Identify and appoint data stewardship and responsibilities across the organisation and make sure that the relationship between them and other staff is clear and is consistent with the overall structure of the DIQM. A data steward is a person responsible for the management of data assets (also known as critical data assets) - both the content and metadata.
Data & Information Quality Improvement Plan	Plan the steps to improve the quality of the data and information within the organisation: data profiling, data cleansing, data defect prevention, etc.
Initial Data Entry & Setup	Define a process for the initial set up of product, service, and process information in the organisation's back-end systems so that all data entered is only entered when verified to be reliable. Tracking provenance and verifying authenticity.
Ongoing Data Maintenance	Define a process for the continuous update and maintenance of data that has been set up so that it is always relevant and up to date with the latest changes in the product and services.
Architecture & Design	Set up a data architecture design for the organisation that supports not only the DIQM but also is aligned with the system and infrastructure architecture.

Data and Information Dimension

📄 Document / Record	
Information Asset Catalogue	A systematically categorized, organized and descriptive collection, list or aggregation of the information assets that can either be electronic or hardcopy in nature and that makes it clear where to find, retrieve and store these items, as necessary.
Data & Information Taxonomy	The GEA-NZ Data and Information Reference Taxonomy categorise and describe the New Zealand Government Information consistently in three pillars of Information: motivators, entities, and activities.
Data and Information Quality Management	DIQM is an administration type that incorporates the role establishment, role deployment, policies, responsibilities and processes with regard to the acquisition, maintenance, disposition and distribution of data and information.

Data and Information Dimension

	Execute
Education & Awareness	Conduct the necessary education programmes needed to ensure all needed steps are in place to improve high quality data and information, and that all data and information assets and processes are defined and processed in a consistent way
Data Cleansing	Data cleansing, data cleaning or data scrubbing is the process of detecting and correcting (or removing) corrupt or inaccurate, out of date, or irrelevant records from a record set, table, or database. It may involve removing typographical errors or validating and correcting values against a known list of entities.
Data Profiling	Data profiling is the process of examining the data available in an existing data source (e.g. a database or a file) and collecting statistics and information about that data.
Data Validation	Data validation is the process of ensuring that a program operates on clean, correct and useful data. It uses routines, often called "validation rules" "validation constraints" or "check routines", that check for correctness, meaningfulness, and security of data that are input to the system. The rules may be implemented through the automated facilities of a data dictionary, or by the inclusion of explicit application program validation logic.

Data and Information Dimension

	👁 Control / Monitor / Evaluate
Data & Information Quality Controls	Execute activities for the identification, analysis, processing and resolution of issues and disruptions that may impact the quality of the data and information. Identifying data and information quality issues is the first step in solving them. Data and information quality investigations are designed to surface problems with data and information. The issues need to drive changes that will improve the quality of data and information within and across organisations.
Monitor Impact of Inadequate, Missing, or Wrong Data	Monitor and record the known issues that result from poor data and information quality in order to create a clear map of the repercussions that erroneous data and information causes.

Application and Software Service Dimension

Application and Software Service	
Plan	• Application Ownership Model • Application Portfolio • User Interfaces • Unified Data Repository • Data & Information Interoperability • Architecture & Design
Document / Record	• Application Asset Catalogue • Application & software Service Taxonomy • API Catalogue • Application Manuals, Guides, & Instructions
Execute	• Education & Awareness • Application & software Service Change Management
Control / Monitor / Evaluate	• Application & software Service Validations • Application Service Level Controls • Compliance Audits

Application and Software Service Dimension

Plan	
Application Ownership Model	Define clear roles and responsibilities for all applications and software services that the organisation owns, uses, or interacts with.
Application Portfolio	Application portfolio is used to gather information about each application in use in the organisation, including the cost to build and maintain the application, the business value produced, the quality of the application, and the expected lifespan.
User Interfaces	When applicable and possible, establish definitions and requirements for the interface used to facilitate the utilisation of internal and external systems by the users.
Unified Data Repository	Establish a central data repository for the organisation that consolidates all final data for external publication, including sharing and dissemination
Data & Information Interoperability	Interoperability is the ability of making systems and organisations work together. There are two types of interoperability: - _Syntactic interoperability_: If two or more systems are capable of communicating and exchanging data, they are exhibiting syntactic interoperability. Specified data formats, communication protocols and the like are fundamental. XML or SQL standards are among the tools of syntactic interoperability. This is also true for lower-level data formats, such as ensuring alphabetical characters are stored in a same variation of ASCII or a Unicode format in all the communicating systems. - _Semantic interoperability_: Beyond the ability of two or more systems to exchange information, semantic interoperability is the ability to automatically interpret the information exchanged meaningfully and accurately in order to produce useful results as defined by the end users of both systems. To achieve semantic interoperability, both sides must refer to a common information exchange reference model. The content of the information exchange requests are unambiguously defined: what is sent is the same as what is understood.
Architecture & Design	Set up a data architecture design for the organisation that supports not only the DIQM but also is aligned with the system and infrastructure architecture.

Application and Software Service Dimension

Document / Record	
Application Asset Catalogue	A systematically categorized, organized and descriptive collection, list or aggregation of the application and software services and a clear view where these applications and software services are installed and used for
Application & Software Service Taxonomy	The GEA-NZ Application and Software Service Reference Taxonomy categorise and describe the New Zealand Government applications and software services consistently into application domains, which are divided into application areas, which have categories.
API Catalogue	Provides complete API lifecycle, including definition, creation, security, monitoring, and management of APIs.
Application Manuals, Guides, & Instructions	Reference documents which provide detailed information about each application and or software service

Application and Software Service Dimension

	Execute
Education & Awareness	Conduct the necessary education programmes needed to ensure all steps are in place to improve high quality data and information across applications and other systems, and that all data and information exchanged are defined and processes in a consistent way.
Application & Software Service Change Management	Establish a process to manage application and software service changes within the organisation. Each application and software service change that has an impact on data or information needs to be aligned with the overall DIQM.

	Control / Monitor / Evaluate
Application & Software Service Validations	Monitor the results of the application and software service automated validations in order to track down frequent errors and issues.
Application Service Level Controls	Track the performance on the agreed KPI's of service levels around applications and software services offered to other organisations and business partners.
Compliance Audits	Conducting periodical audits, reports, monitoring of applications and software services to verify that procedures are followed as defined within the DIQM.

Infrastructure Dimension

Infrastructure	
Plan	• Infrastructure Ownership Model • External Publication • Internal Publication • Unified Data Repository • Data & Information Interoperability
Document / Record	• Infrastructure Asset Catalogue • Infrastructure Taxonomy • Operating Procedures
Execute	• Education & Awareness • Infrastructure Change Management
Control / Monitor / Evaluate	• Infrastructure Issue Management • Infrastructure Service Levels Control • Compliance Audits

Infrastructure Dimension

|	📅 **Plan**
Infrastructure Ownership Model	Define clear roles and responsibilities for all infrastructure assets that the organisation owns, uses, or interacts with.
External Publication	Define system requirements for the tools that will be used to publish data and information externally (i.e. beyond the organisation's firewall, such as to other organisations or business partners, etc.). 'Publish' includes distribution, dissemination, and sharing of information.
Internal Publication	Define system requirements for the tools that will be used to publish data and information internally (i.e. within the organisation's firewall, such as to other business units within the organisation, etc.). 'Publish' includes distribution, dissemination, and sharing of information.
Unified Data Repository	Establish a central data repository for the organisation that consolidates all final data for external publication, including sharing and dissemination
Data & Information Interoperability	Interoperability is the ability of making systems and organisations work together. There are two types of interoperability: - _Syntactic interoperability_: If two or more systems are capable of communicating and exchanging data, they are exhibiting syntactic interoperability. Specified data formats, communication protocols and the like are fundamental. XML or SQL standards are among the tools of syntactic interoperability. This is also true for lower-level data formats, such as ensuring alphabetical characters are stored in a same variation of ASCII or a Unicode format in all the communicating systems. - _Semantic interoperability_: Beyond the ability of two or more systems to exchange information, semantic interoperability is the ability to automatically interpret the information exchanged meaningfully and accurately in order to produce useful results as defined by the end users of both systems. To achieve semantic interoperability, both sides must refer to a common information exchange reference model. The content of the information exchange requests are unambiguously defined: what is sent is the same as what is understood.

Infrastructure Dimension

📄 Document / Record

Infrastructure Asset Catalogue	A systematically categorized, organized and descriptive collection, list or aggregation of the infrastructure assets and a clear view of where these infrastructure assets are installed and used.
Infrastructure Taxonomy	The GEA-NZ Infrastructure Reference Taxonomy categorises and describe the New Zealand Government infrastructure assets consistently into domains, which are divided into areas, which have categories.
Operating Procedures	Document the workflows and procedures to operate the infrastructure that support the DIQM system.

🏁 Execute

Education & Awareness	Conduct the necessary education programmes needed to ensure all infrastructure is in place to improve high quality data and information across systems, and that all data and information exchanged are defined and processes in a consistent way.
Infrastructure Change Management	Establish a process to manage infrastructure changes within the organisation. Each infrastructure change that has an impact on data or information needs to be aligned with the overall DIQM.

👁 Control / Monitor / Evaluate

Infrastructure Issue Management	Monitor the performance of infrastructure assets in order to track down frequent errors and issues.
Infrastructure Service Level Controls	Track the performance on the agreed KPI's of service levels around infrastructure offered to other organisations and business partners.
Compliance Audits	Conducting periodical audits on infrastructure to verify that procedures are followed as defined within the DIQM.

Eight Dimensions of an Organisation
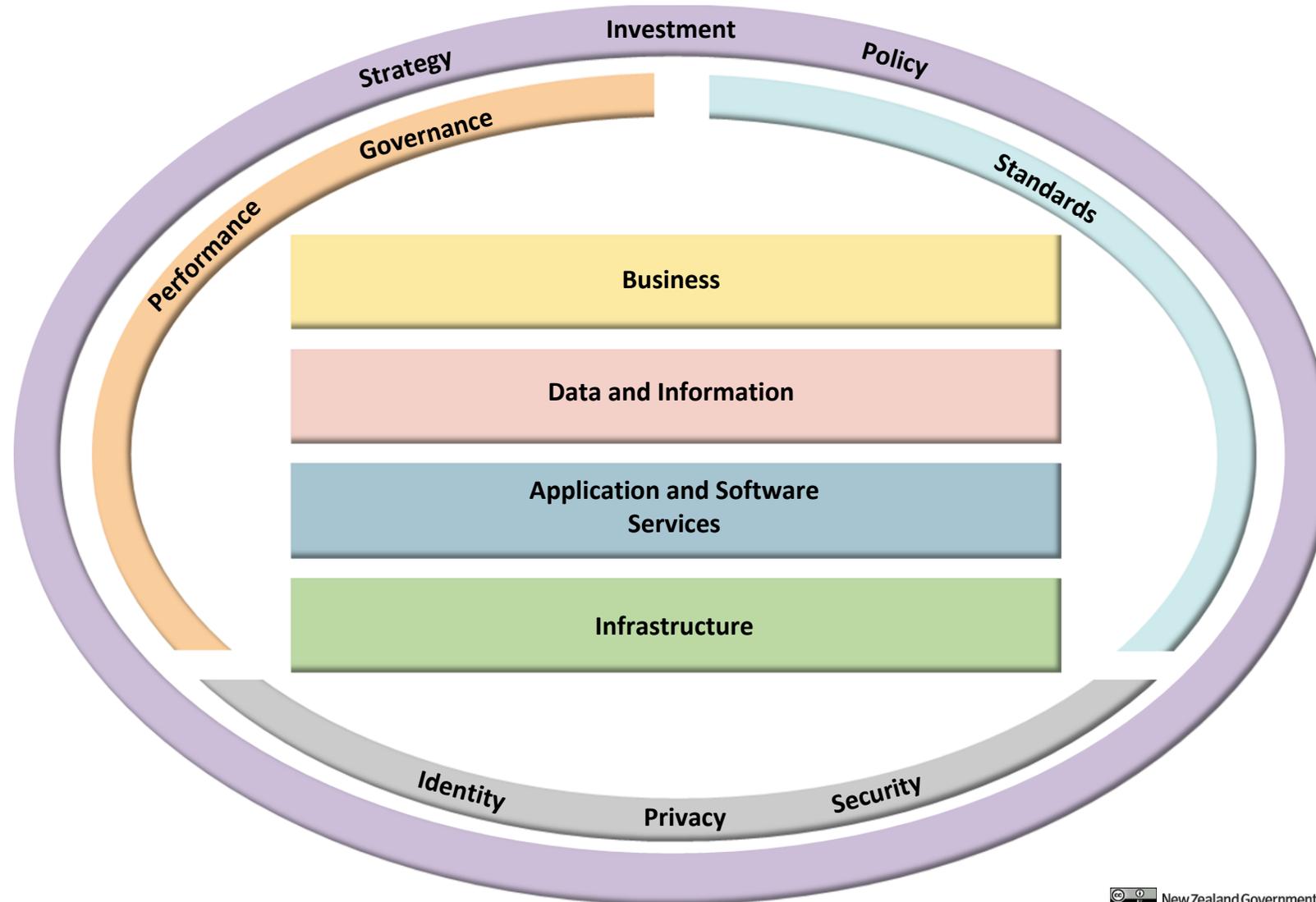
Governance and Performance Dimension

Governance and Performance	
Plan	- Guiding Principles - Success Measures - Improvement Plans
Document / Record	- Data & Information Governance Model - Success & Quality Measures - Performance Metrics - Assessment Procedures - Assessment Results - Improvement Plans - Audit Procedures
Execute	- Education & Awareness - Performance Management
Control / Monitor / Evaluate	- Performance Controls - Service Level Controls - Data & Information Audits

Governance and Performance Dimension

Plan	
Guiding Principles	Develop, plan and establish the guiding principles that will direct the execution of the DIQM.
Success Measures	Define the criteria, for the different dimensions, that establish what is considered successful performance within the measurable objectives.
Improvement Plans	Develop plans for the implementation of improvement measures and programmes.

Document / Record	
Data & Information Governance Model	Create formal documentation of data and information governance structure and roles and responsibilities within the DIQM.
Success & Quality Measures	Record all success and quality measures needed to achieve high quality data and information within and across organisations.
Performance Metrics	Document the specific KPI's and metrics that are to be used to measure the performance of DIQM activities.
Assessment Procedures	Assessment procedures are a methodology used to assess and compare data and information performance, quality and success measures within an organisation.
Assessment Results	Results of the assessment procedures on data and information performance, quality and success measures within an organisation.
Improvement Plans	Document a set of techniques and tools to improve the data and information quality of process outputs by identifying and removing the causes of errors and minimizing variability in business processes.
Audit Procedures	Define and document a standardised protocol for execution of internal audits of the DIQM and its outcomes.

Governance and Performance Dimension

Execute	
Education & Awareness	Conduct the necessary education programmes needed to ensure people understand what data and information performance, quality and success measurements are, where they are measured and what their responsibilities are to achieve high quality data and information within and across organisations. Engage in communications across the organisation to show how the data and information performance, quality and success measurements support the main organisational objectives, mission and vision to improve data and information quality.
Performance Management	Carry out activities to measure and manage performance of the DIQM; the focus of this performance management should be to continuously evaluate the performance metrics and conduct improvements/corrective actions whenever necessary to achieve the desired performance levels.

Control / Monitor / Evaluate	
Performance Controls	Monitor effectiveness of the process and its data and information to the expected performance criteria across the DIQM in order to measure the degree in which the organisation adheres to the defined policies and standards.
Service Level Controls	Track the performance on the agreed KPI's of service levels offered to other organisations and business partners and vendors.
Data & Information Audits	Conducting periodical audits to verify that procedures are followed as defined within the DIQM.

Standard Dimension

Standard	
Plan	• Standard Management
Document / Record	• National & International Standards
Execute	• Education & Awareness • Standard Management
Control / Monitor / Evaluate	• Standard Validations • Compliance Audits

Standard Dimension

Plan

Standard Management	Define responsibilities and processes for the management and maintenance of all national and international standards that support and guide the DIQM.

Document / Record

National & International Standards	Record of all national and international standards used government, sector and agency level.

Execute

Education & Awareness	Conduct necessary education programmes needed to ensure all applied standards are in place to improve high quality data and information across systems, and that all data and information exchanged are defined and processes in a consistent way.
Standard Management	Establish a process to manage standards within the organisation. Each standard that has an impact on data or information needs to be aligned with the overall DIQM.

Control / Monitor / Evaluate

Standard Validations	Monitor the results of the standard validations in order to track down inconsistency, errors and issues.
Compliance Audits	Conducting periodical audits on standard implementation to verify that procedures are followed as defined within the DIQM.

Identity, Privacy, and Security Dimension

Identity, Privacy, and Security	
Plan	• Privacy & Security Management
Document / Record	• Security & Privacy Policy, Regulations & Laws • Threat & Vulnerability Model • Risk Management Procedures
Execute	• Education & Awareness • Privacy & Security Management • Risk Management
Control / Monitor / Evaluate	• Privacy & Security Validations • Compliance Audits

Identity, Privacy, and Security Dimension

	Plan
Privacy & Security Management	Define responsibilities and processes for the management and maintenance of all privacy and security aspects that support and guide the DIQM. Define specific policies for the safeguard of the integrity of the data and information, in terms of accessibility, edit-rights, privacy, intellectual property, etc.

	Document / Record
Privacy & Security Policies, Regulations & Laws	Record of all strategic and guiding policies, regulations and laws around privacy and security at government, sector and agency level.
Threat & Vulnerability Model	Threat and vulnerability modelling is an approach for analysing the privacy and security of applications and software services. It is a structured approach that enables you to identify, quantify, and address the privacy and security risks associated with an application or a software service.
Risk Management Procedures	Identify and assess possible risks, and document risk-assessments criteria in order to prioritise/evaluate actions carried out in the DIQM.

# Identity, Privacy, and Security Dimension

	Execute
Education & Awareness	Conduct the necessary education programmes needed to ensure all privacy and security measurements are in place to improve high quality data and information across systems, and that all data and information exchange and processes are defined in a consistent way.
Privacy & Security Management	Establish a process to manage privacy and security policy changes within the organisation. Each change that has an impact on data or information needs to be aligned with the overall DIQM.
Risk Management	Establish a process to manage risks within the organisation. Each risk that has an impact on data or information needs to be aligned with the overall DIQM. Managing risks is a process that includes risk assessment and a mitigation strategy for those risks. Risk assessment includes both the identification of potential risk and the evaluation of the potential impact of the risk. A risk mitigation plan is designed to eliminate or minimize the impact of the risk events—occurrences that have a negative impact.

	Control / Monitor / Evaluate
Privacy & Security Validations	Monitor the results of the privacy and security validations in order to track down threats, vulnerabilities, errors and issues, and effect of implementing NZISM/PSR controls.
Compliance Audits	Conducting periodical audits on privacy and security policy implementation to verify that procedures are followed as defined within the DIQM.

Strategy, Investment, and Policy Dimension

Strategy, Investment, and Policy	
Plan	• Executive Sponsorship • Goals & Objectives • Plans & Roadmaps • Roles & Responsibilities • Terms of Reference
Document / Record	• Goals & Objectives • Plans & Roadmaps • Roles & Responsibilities • Data & Information Quality Assurance • Data & Information Change Management
Execute	• Education & Awareness • Data & Information Change Management
Control / Monitor / Evaluate	• Organisational Capability Review

Strategy, Investment, and Policy Dimension

📅 **Plan**	
Executive Sponsorship	Secure endorsement from executive for active management of data and information quality in the organisation.
Goals & Objectives	Develop and/or update strategic goals and objectives, but also the value and ethics, around appropriate quality data and information.
Plans & Roadmaps	Define strategic plans and roadmaps at government, sector and agency level.
Roles & Responsibilities	Define clear roles and responsibilities and ensure they are understood and known within the organisation.
Terms of Reference	Define the terms of reference for data governance that support and guide the DIQM to appropriately use and reuse data

Strategy, Investment, and Policy Dimension

	📄 Document / Record
Goals & Objectives	Record of all strategic and guiding goals and objectives, but also the values, ethics, and principles at government, sector and agency level.
Plans & Roadmaps	Record of all strategic plans and roadmaps at government, sector and agency le.
Roles & Responsibilities	Record the roles and responsibilities and ensure they are understood and known within the organisation.
Data & Information Quality Assurance (DIQA)	Assessment procedures are a methodology used to assess and compare data and information performance, quality and success measures within an organisation.
Data & Information Change Management	Record of all processes to manage changes to data and information as part of the overall system change process.

Strategy, Investment, and Policy Dimension

Execute

Education & Awareness	Conduct the necessary education programmes needed to ensure people understand what data and information quality is, what the impact and importance is to the organisation, that it contributes to the good outcomes for the public, etc. Engage in communications across the organisation to show how these initiatives support the main organisational objectives, mission and vision to improve data and information quality. Should be part of information as an asset training.
Data & Information Change Management	Establish a process to manage data and information changes as part of the organisation's change management process.

Control / Monitor / Evaluate

Organisational Capability Review	Conduct periodical reviews of the documentation of the data and information governance structure, process flow, roles and responsibilities and ongoing training programmes to evaluate the effectiveness and/or to define improvements.

New Zealand Government
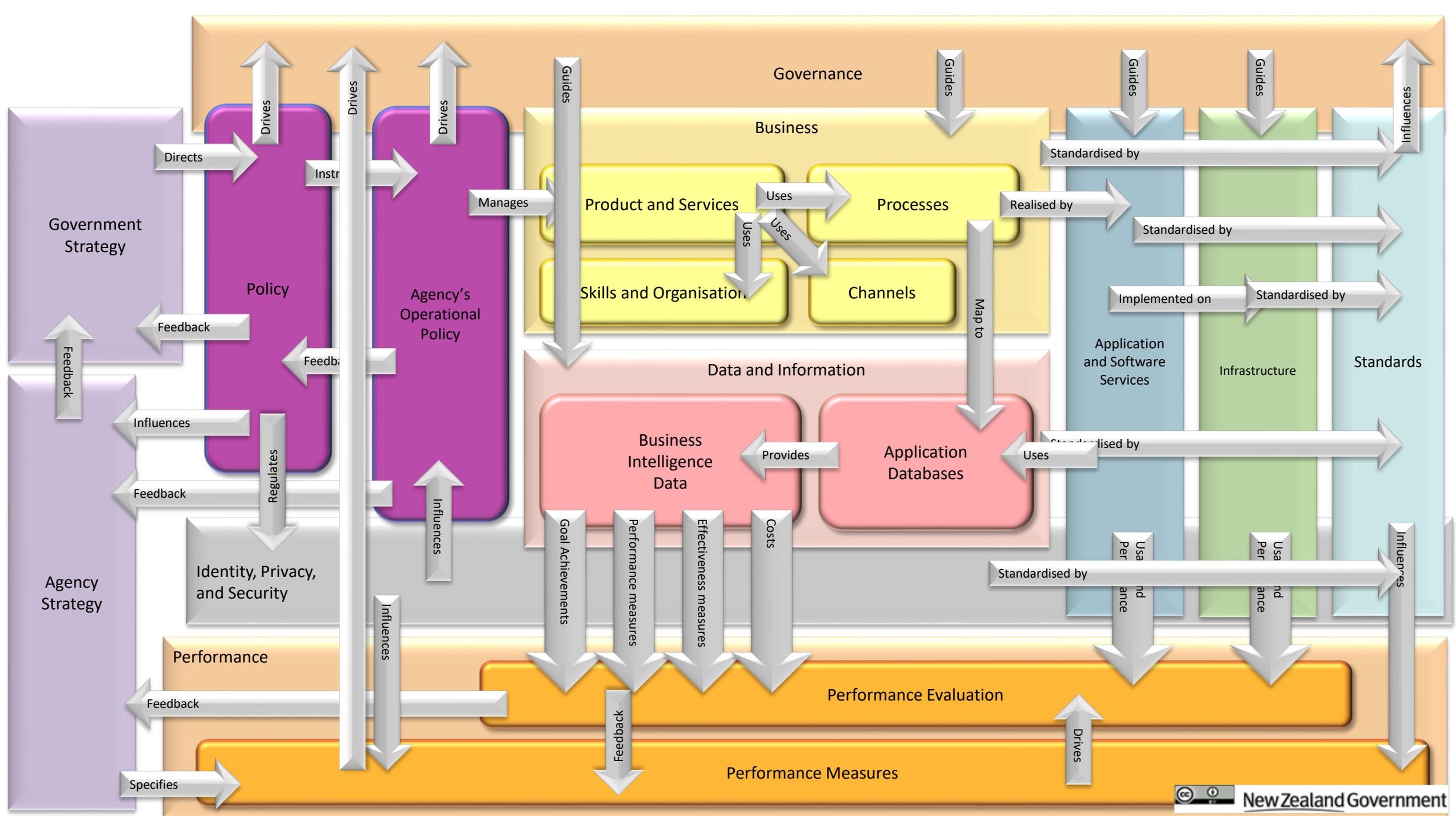
Business Discovery Process

Business Discovery Template

Motivators

Plans

Controls

Contracts

Entities

Parties

Places

Items

Activities

Cases

Events

Services

Scenario:

Business Discovery Example
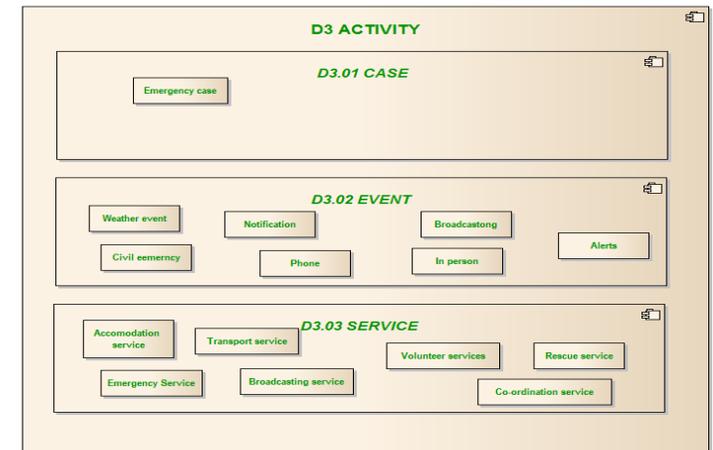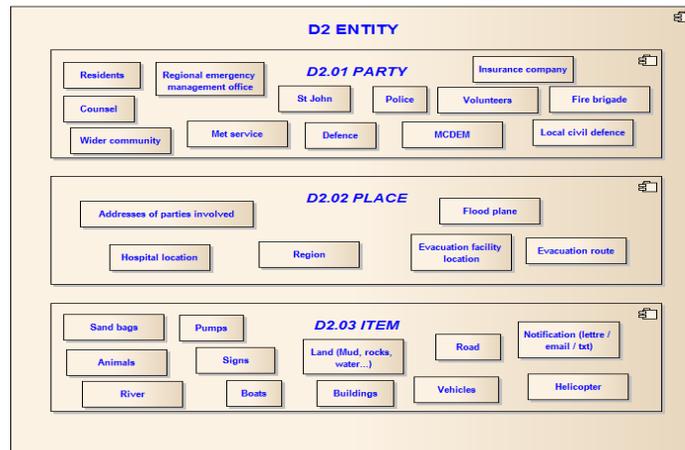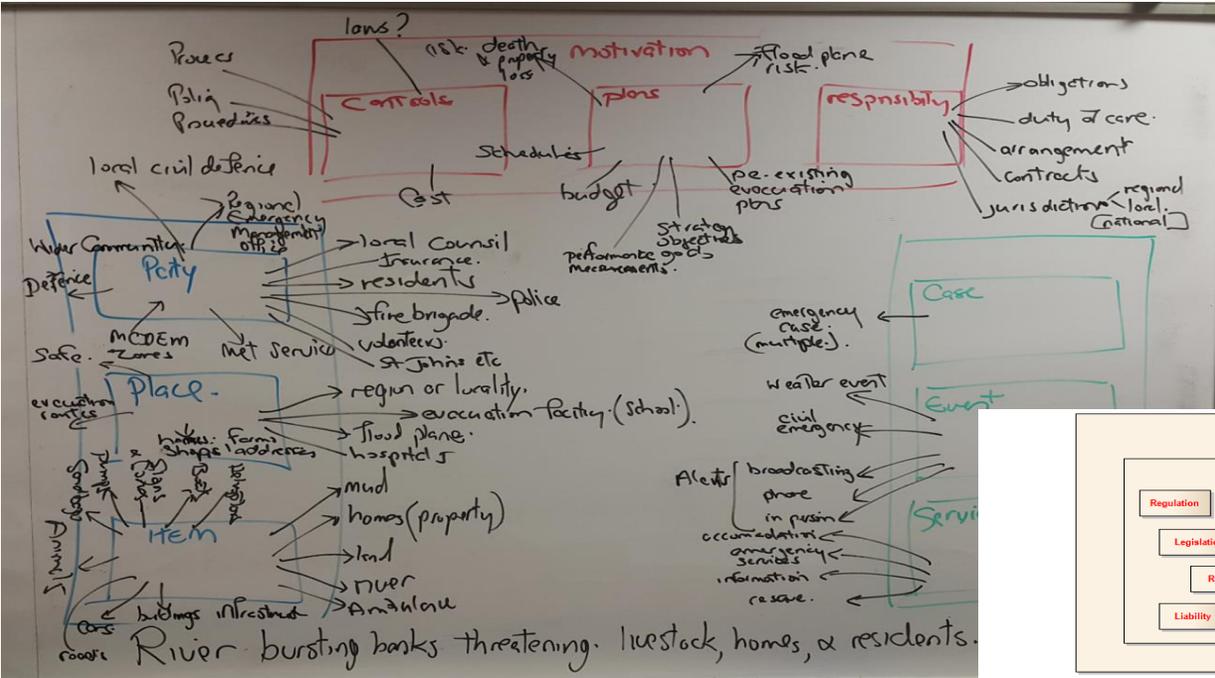
Information Asset Catalogue

- **CORE ATTRIBUTES**

- **CUSTODIANSHIP AND LIFECYCLE**

- **DISPOSAL**

- **INFORMATION ASSET DESCRIPTION AND CONTEXT**

- **VALUE AND IMPACT**

- **PROVENANCE AND DATA QUALITY**

- **SECURITY AND PRIVACY CONSIDERATIONS**

- **USAGE SHARING AND REUSE**

- **TECHNICAL**

- **NOTES**

Information Asset Catalogue

CORE ATTRIBUTES

- Agency Unique Identifier
- Full and Brief Name
- Description and Size
- Agency Custodian
- Authoritative / Public Register
- Legislation
- Business Services

CUSTODIANSHIP AND LIFECYCLE

- Asset Custodian
- Asset Steward
- Statutory Custodian Title
- Frequency of updated
- Approval of updates
- Current or non-current Information Asset
- Date range of Information Asset
- Annual growth rate
- Associated historical Information Assets

DISPOSAL

- Disposal authority
- Disposal actions
- Retention period or disposal trigger
- Archival privacy and security considerations
- Disposal date

SECURITY AND PRIVACY CONSIDERATIONS

- Formal security-classification
- Personally Identifiable Information
- Privacy Act purpose and scope
- Any other restrictions

INFORMATION ASSET DESCRIPTION AND CONTEXT

- Summary of information stored
- Primary Function of Information Asset
- Primary Business Domain of Asset
- Primary Data and Information Domain/Subject of the Asset
- Containing Information Asset (if subset)
- Contained Information Assets (if superset)
- Consumer - Internal & External
- Geographic range of information asset
- Population range of information asset

VALUE AND IMPACT

- Value / significance of asset to Agency / Sector / NZ
- Impact of loss of Information Asset to Agency / Sector / NZ
- Value of asset - Economic & Social Outcomes
- Value of asset - Transparency & Democratic Outcomes
- Value of asset - Efficiency Outcomes

PROVENANCE AND DATA QUALITY

- Method of collection
- Data quality assurance mechanisms
- Data quality caveats
- Data quality statement
- Data quality expectations
- Applicable conformance to controlled vocabularies or standards

USAGE SHARING AND REUSE

- Data Sharing Arrangement/s
- Data Sharing Mechanisms
- Copyright
- Where Published
- Open Data
- Data model reference
- Data definition reference

TECHNICAL

- Source Type
- Source Business System(s)
- Source Storage Format
- Output Format(s)
- Applicable conformance to technical standards

Value
Of Information

Information Valuation Methods

Foundational Measures

- Intrinsic Value of Information (IVI)

- Business Value of Information (BVI)

- Performance Value of Information (PVI)

Financial Measures

- Cost Value of Information (CVI)

- Market Value of Information (MVI)

- Economic Value of Information (EVI)

Criteria to Value Information

| Accessibility |
| Flexibility |
| Integration |
| Reliability |
| Timeliness / Speed |
| Security |

| Accuracy / Precision |
| Applicability |
| Completeness |
| Convenience |
| Conciseness |
| Consistency |
| Currency |
| Format / Clarity |
| Traceability |

System Quality

$$\frac{\sum (Score * Criteria\ IW)}{\sum (Criteria\ IW)}$$

Information Quality

$$\frac{\sum (Score * Criteria\ IW)}{\sum (Criteria\ IW)}$$
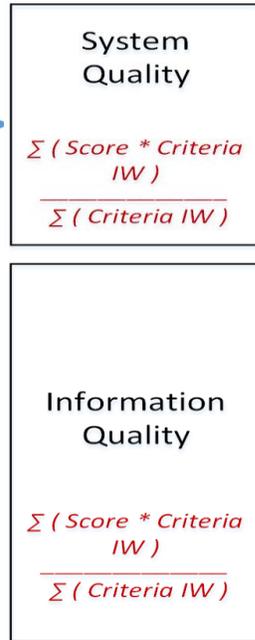
Information Satisfaction

$$\sum Quality\ Score\ /\ 2$$

| Operability |
| Attractiveness |
| Learnability |
| Fun |

| Efficiency |
| Maintainability |
| Context Coverage |
| Freedom from Risk |
| Effectiveness |

Usability / Usefulness / Utilisation

↓

for User

$$\frac{(Score\ Info.\ Satisfaction + (\sum (Score * Criteria\ IW)}{\sum (Additional\ Criteria\ IW)))\ /\ 2}$$

Usability / Usefulness / Utilisation

↓

for Agency / Sector / Government / Country

$$\frac{\sum (Score * Criteria\ IW)}{\sum (Criteria\ IW)}$$

Information Value

$$\frac{(Score\ U/U/U\ for\ User + Score\ U/U/U\ for\ A/S/G/C)}{2}$$

A → B

A influences B

A	Very Important
A	Important
A	Somewhat Important
A	Not Important

Importance Weight (IW)

Score Information Asset, that needs to be Conform, between:

3 to 1 degree of conformity
0 - Does not conform

	IW
Very Important	3
Important	2
Somewhat Important	1
Not Important	Remove the criteria

Survey to Identify Criteria

Efficiency
- How many times per week do you use the information asset?
- How many minutes do you spend reviewing and using the information asset each time you receive it?
- How long does it time to completely review and understand the content of the information asset?

Quality
- How happy are you with the correctness of the information asset?
- How comprehensive is the information asset?
- How dependent are you on the information asset?

Decision Making
- What kind of decisions do you make based on the information asset?
- How sure are you in making the right decision based on the information asset?
- Would you be able to make the same decision WITHOUT having access the information asset?
- How sure are you in making the right decision WITHOUT having access to the information asset?
- What is the alternative if you would not have access to the information asset?
- How much time to you save with this information asset?

Effectiveness
- Can risks to the organisation be avoided based on the information asset? If so, to what extend does it help?
- To which goals does the information asset contribute?

Example of Value Calculation for *Decision Making*

A ──→ B

A influences B

A (red)	Very Important
A (orange)	Important
A (green)	Somewhat Important
A (white)	Not Important

System Quality

$$\frac{\sum (Score * Criteria\ IW)}{\sum (Criteria\ IW)}$$

- Accessibility
- Flexibility
- Integration
- Reliability
- Timeliness / Speed
- Security

Information Quality

$$\frac{\sum (Score * Criteria\ IW)}{\sum (Criteria\ IW)}$$

- Accuracy / Precision
- Applicability
- Completeness
- Convenience
- Conciseness
- Consistency
- Currency
- Format / Clarity
- Traceability

Information Satisfaction

$\sum Quality\ Score\ /\ 2$

- Operability
- Attractiveness
- Learnability
- Fun

Usability / Usefulness / Utilisation → for User

$$\frac{(Score\ Info.\ Satisfaction + (\sum (Score * Criteria\ IW) }{\sum (Additional\ Criteria\ IW)))\ /\ 2}$$

Agency / Sector / Government / Country Goals

- Manage Information as an Asset
- Rights and Entitlements
- Machinery of Government
- Social Outcomes
- Economic Outcomes
- Environmental Outcomes
- Transparency and Accountability

- Efficiency
- Maintainability
- Context Coverage
- Freedom from Risk
- Effectiveness

Usability / Usefulness / Utilisation → for Agency / Sector / Government / Country

$$\frac{\sum (Score * Criteria\ IW)}{\sum (Criteria\ IW)}$$

Information Value

$$\frac{(Score\ U/U/U\ for\ User + Score\ U/U/U\ for\ A/S/G/C)}{2}$$

Importance Weight (IW)

Score Information Asset, that needs to be conform, between:

3 to 1 degree of conformity
0 - Does not conform

	IW
Very Important	3
Important	2
Somewhat Important	1
Not Important	Remove the criteria

Q & A