



National Data Management Guidelines

Data Sharing, Integration and Interoperability



Table of Contents

1. Data Sharing, Integration and Interoperability Domain Introduction

- 1.1 Domain Overview
- 1.2 Target Audience
- 1.3 Abbreviations and Glossary
- 1.4 Readability Guide
- 1.5 Stakeholders Involved
- 1.6 Key Success Factors
- 1.7 Compliance with National Data Standards
- 1.8 Domain Level Process Map

2. Data Sharing, Integration & Interoperability Policy

- Overview
- 2.1 Data Sharing, Integration & Interoperability Policy Creation
- 2.2 Data Sharing, Integration & Interoperability Policy Publication

3. Data Sharing, Integration & Interoperability Planning

- Overview
- 3.1 Data Sharing & Integration Assessment & Requirements
- 3.2 Data Sharing & Integration Plan

4. Open Data Planning

- Overview
- 4.1 Open Data Assessment & Requirements
- 4.2 Open Data Plan

5. Data Sharing, Integration & Interoperability Implementation

- Overview
- 5.1 Data Sharing, Agreements & Contracts
- 5.2 Data Sharing Principles & Process
- 5.3 Data Integration & Interoperability Architecture

6. Open Data Implementation

Overview

6.1 Open Data Processes

6.2 Open Data Format & Metadata

7. Data Sharing, Integration & Interoperability Performance Management

Overview

7.1 Data Sharing, Integration & Interoperability KPIs

7.2 Data Sharing, Integration & Interoperability Monitoring & Reporting

7.3 QDTI

7.3 Open Data Audit

8. Appendix

8.1 Templates & Frameworks

A photograph of the Dubai skyline at sunset, featuring the Burj Khalifa and other skyscrapers reflected in the water. The sky is a mix of orange, pink, and purple hues.

1. Data Sharing, Integration and Interoperability Domain Introduction

1.1 Domain Overview

As data sharing, integration, and interoperability become essential for modern government operations, ensuring seamless data exchange and collaboration between entities is critical. The Data Sharing, Integration, and Interoperability domain empowers entities to securely and efficiently share high-quality data within and across entities while aligning with national standards. By adopting policies, frameworks, and tools, entities can address inefficiencies, enhance data movement, and ensure compliance with regulatory requirements.

The purpose of this Data Sharing, Integration, and Interoperability Guidelines document is to provide a structured approach for implementing effective data sharing and integration practices, enabling entities to achieve operational excellence, improve decision-making, and foster collaboration at both the Entity and national levels.

Key Components of the Data Sharing, Integration and Interoperability Domain

2. Data Sharing, Integration & Interoperability Policy

It is crucial to first establish and publish a Data Sharing, Integration, and Interoperability Policy to ensure consistent and secure data sharing practices, effective integration, and seamless interoperability both within the Entity and with other government entities.

- **Data Sharing, Integration & Interoperability Policy Creation:** The Entity's leadership, in collaboration with stakeholders, develops a policy that governs the secure sharing, integration, and interoperability of data across systems and entities.
- **Data Sharing, Integration & Interoperability Policy Publication:** After incorporating stakeholder feedback and ensuring compliance with regulatory and audit standards, the finalized policy is published on the Entity's centralized repository. The policy is then actively promoted across departments to ensure awareness, adoption, and alignment with organizational data-sharing objectives.

3. Data Sharing, Integration & Interoperability Planning

After establishing the foundational policies for Data Sharing, Integration, and Interoperability, it is crucial to develop a detailed plan that operationalizes the assessment and implementation of these policies. This section focuses on assessing the current state of data sharing and integration, identifying requirements, detailing initiatives, and creating a roadmap for future initiatives.

- **Data Sharing & Integration Assessment & Requirements:** Retrieve or refresh the maturity assessment for the DSII domain using the Data Management Current Maturity Assessment Framework and Data Management Maturity Model and conduct a comprehensive assessment to document the Entity's business and technical requirements related to data sharing, integration, and interoperability. This includes creating an inventory of existing data sources and systems, documenting data lineage and data models, and identifying gaps and inefficiencies in data movement and integrations.

- **Data Sharing & Integration Plan:** Develop initiative cards to document key data-sharing, integration and interoperability initiatives, detailing key activities, timelines, milestones, technology requirements, dependencies, assumptions and risks, and ownership. These initiatives should cater to the previously defined requirements and identified gaps and inefficiencies. Consolidate these initiatives into a Data Sharing, Integration & Interoperability Roadmap.

4. Open Data Planning

Open data serves as a critical enabler of transparency, innovation, and public service delivery (e.g., improving access to transportation schedules, healthcare facility availability, or business licensing information). Effective planning for open data publication ensures that datasets are made accessible while adhering to national policies and safeguarding legal, ethical, and privacy considerations. This section outlines the steps required to assess current open data practices, identify requirements, and create a plan for publishing and managing open data.

- **Open Data Assessment & Requirements:** Conduct a comprehensive assessment of the Entity's currently published open datasets. This includes evaluating dataset quality, metadata completeness, and alignment with the National Open Data Policy. Identify datasets with Qatar Data Trust Index (QDTI) scores below 85 and document gaps, including quality, legal, or compliance issues. In parallel, gather business and technical requirements for new datasets proposed for future publication, ensuring they meet usability, relevance, and compliance standards.
- **Open Data Plan:** Using the findings from the assessment, develop a targeted Open Data Plan that outlines initiatives to uplift underperforming datasets and enable the publication of newly identified datasets. The plan should define key activities, improvement initiatives, responsible owners, milestones, timelines, risks, dependencies, and technical considerations to ensure high-quality, compliant, and impactful open data publication.

5. Data Sharing, Integration & Interoperability Implementation

Implementing data sharing, integration, and interoperability initiatives is critical to achieving seamless collaboration and data exchange across entities. This section provides practical guidance on establishing the principles, processes, agreements, and architectural elements necessary to enable secure and efficient data sharing.

- **Data Sharing Principles & Process:** To ensure consistency and alignment in data-sharing practices, the Entity must define and adopt clear principles and processes. These include fostering a data-sharing culture, maintaining transparency, and upholding ethical and legal standards.
- **Data Sharing Agreements & Contracts:** The Entity must standardize its data-sharing practices through agreements and contracts, providing a legal and procedural framework for collaboration.
- **Data Integration & Interoperability Architecture:** An integration layer architecture is essential to connect internal and external systems seamlessly. This involves developing a data exchange directory, designing an integration layer architecture, and implementing standardized methods such as API, file-based, and database integrations.

6. Open Data Implementation

Effective implementation of open data initiatives is essential for fostering transparency, innovation, and public engagement. This section provides guidance on establishing processes for publishing, managing, and maintaining open data. It emphasizes the importance of identifying suitable datasets, ensuring compliance with regulatory requirements, and maintaining high-quality metadata and formats for accessibility.

- **Open Data Processes:** The Entity must develop and document processes to manage the lifecycle of open data effectively. These processes include identifying and prioritizing datasets for publication, ensuring the exclusion of restricted data, and maintaining dataset quality and compliance.
- **Open Data Format & Metadata:** To maximize accessibility and usability, the Entity should publish open datasets in standardized, machine-readable formats such as CSV, JSON, XML, and RDF. Comprehensive metadata must accompany each dataset to enable easy identification, description, and searchability.

7. Data Sharing, Integration & Interoperability Performance Management

Performance management is essential for ensuring that data-sharing, integration, and interoperability efforts achieve their intended goals. This section provides guidance on defining, monitoring, and reporting performance through Key Performance Indicators (KPIs) and enhancing monitoring capabilities. It also emphasizes the importance of auditing open data practices to ensure compliance and transparency.

- **Data Sharing, Integration & Interoperability KPIs:** To evaluate the effectiveness of data-sharing and integration efforts, the Entity must establish a set of KPIs. These KPIs help monitor progress, identify areas for improvement, and guide decision-making.
- **Data Sharing, Integration & Interoperability Monitoring & Reporting:** The Entity must track performance against the defined KPIs through dashboards and reports, providing a clear view of ongoing data-sharing and integration activities.
- **QDTI:** Evaluating the Entity's adherence to the National Data Sharing, Integration and Interoperability Standards as part of the broader QDTI framework.
- **Open Data Audit:** In alignment with the Open Data Policy (2014), the Entity must maintain a copy of the approved Open Data Assessment checklist for reference and audits.

1.2 Target Audience

This handbook is designed for leaders of the data sector, heads of IT and integration, or equivalent roles, depending on the size and organizational structure of the Entity. It is also relevant for team leads and any other roles responsible for data sharing, integration, and interoperability initiatives. This handbook serves as a comprehensive resource, offering practical guidance to ensure that the foundational, advanced, and very advanced elements of data sharing, integration, and interoperability are in place, supporting the successful implementation and ongoing management of these initiatives across the Entity.

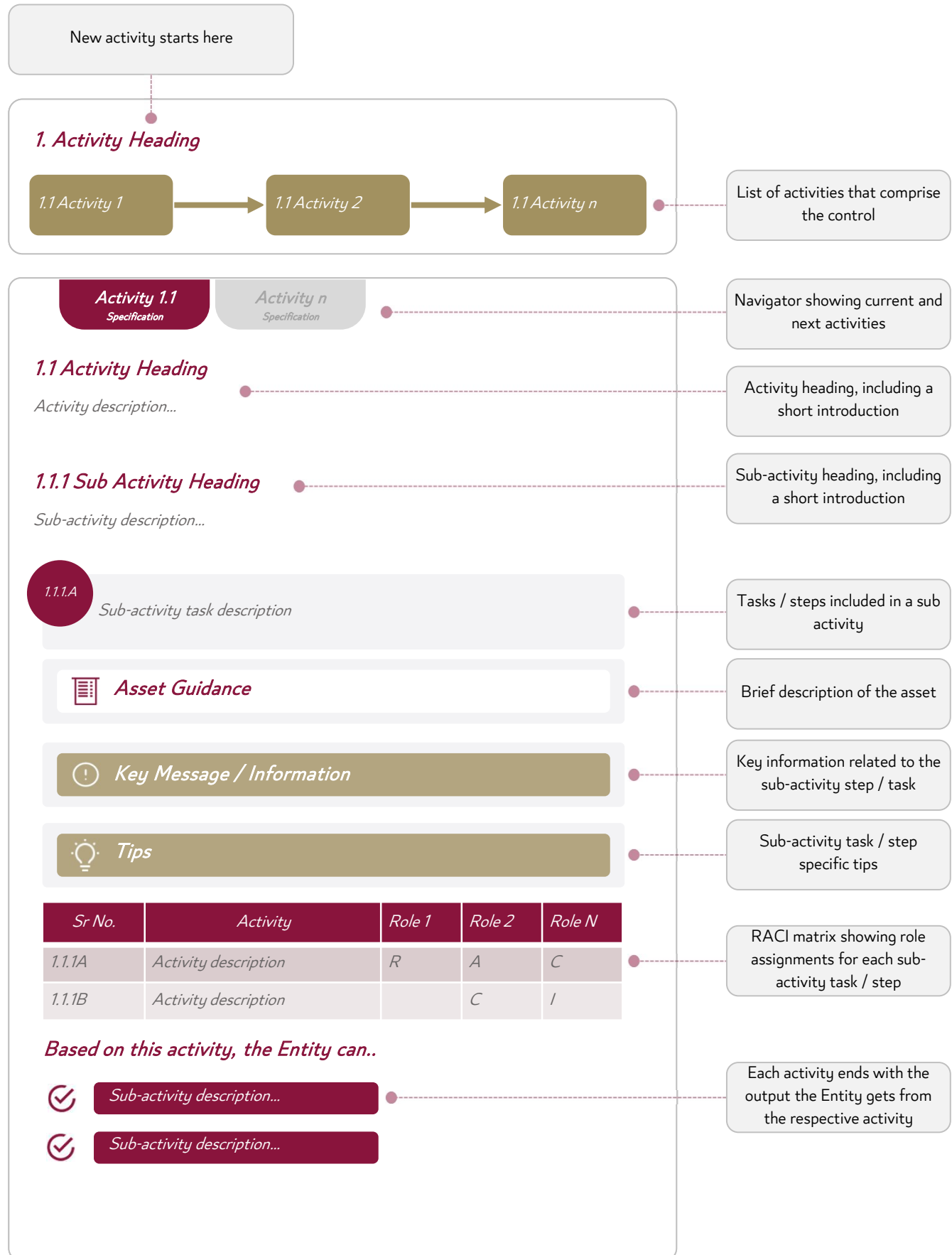
1.3 Abbreviations and Glossary

Abbreviation/Term	Definition / Long Name
Application Programming Interface (API)	A set of protocols and tools that allow different systems to communicate and exchange data seamlessly. APIs enable real-time data sharing and system interoperability.
Business-to-Business (B2B) Data Exchange	The automated exchange of structured data between business entities, supporting integration across multiple organizations.
CSV	Comma-Separated Values – A simple file format used to store tabular data where each line represents a data record, and each record consists of fields separated by commas.
Data Contract	A detailed, dataset-specific agreement that defines the usage terms, limitations, format, classification, and responsibilities for a particular data exchange.
Data Sharing Agreement (DSA)	A foundational, overarching agreement between two entities that outlines the legal, security, and governance conditions for data exchange.
Dataset Classification	The sensitivity or confidentiality level of a dataset (e.g., Top Secret, Secret, Restricted, Internal, Public) as per national standards.
Source Entity	The entity responsible for providing data in a data-sharing arrangement. It owns, governs, and maintains the dataset and shares it with other entities.
Data Requesting Entity	The entity that requests access to a dataset owned by another entity. It acts as the recipient of the shared data, defines the use case or purpose, and must comply with the terms outlined in the data sharing agreement and data contract.
DSII	Data Sharing, Integration and Interoperability
Data Privacy & Integrity (DPI)	A framework ensuring that shared data remains confidential, protected from unauthorized access, and maintains accuracy across data exchanges.
ETL Process	A technical method of Extracting data from sources, Transforming it into usable formats, and Loading it into target systems like data warehouses.
Government Network (GN)	A secure network infrastructure used by government entities for inter-entity data exchange via methods like GDX, SFTP, or Database-to-database integration.
JavaScript Object Notation (JSON)	A lightweight, structured format for storing and exchanging data between web applications and services.
Peer-to-Peer (P2P) Data Exchange	A decentralized model of data sharing that allows direct system-to-system communication without a central integration hub.
ODS	OpenDataSoft
Representational State Transfer (REST)	A web-based API standard that enables lightweight, scalable data exchange between applications using HTTP protocols.
Role-Based Access Control (RBAC)	A security model that restricts or grants data access based on predefined user roles and privileges.
Resource Description Framework (RDF)	A standard model for data interchange on the web that structures data as subject-predicate-object triples to express relationships.
Source System	The original system or database from which data originates (e.g., ERP, CRM, sensors, legacy systems).

1.3 Abbreviations and Glossary

Abbreviation/Term	Definition / Long Name
Single Source of Truth (SSOT)	A data management principle ensuring that one authoritative data source is used across all integrations to maintain consistency and avoid discrepancies.
Extensible Markup Language (XML)	A structured data format used for exchanging data between systems in a hierarchical structure, often used in web services and integration frameworks.

1.4 Readability Guide



Note: Should an activity only contain one sub activity, this sub activity will be in the format of "1.1.A" instead of "1.1.1.A"

1.5 Stakeholders Involved

Below are the stakeholders and actors who contribute to the different processes outlined in the upcoming chapters.

Stakeholder	Role Description
Data Governance Office (DGO)	A Data Governance Office (DGO) is the centralized national body in the National Planning Council responsible for facilitating and coordinating data governance efforts within all associated government entities. It serves as the principal body overseeing the management of data as a strategic asset, ensuring that data-related processes align with the national objectives and comply with relevant policies and regulations.
Data Management & Security Director	The Data Management and Security Director is responsible for leading and overseeing the development and implementation of the data agenda within the government entity, ensuring alignment with strategic objectives and compliance with security regulations. This role promotes best practices in data management while ensuring robust security measures are in place to safeguard the Entity's data assets. The director bridges business and IT to support data-driven decision-making, elevate data as a strategic asset, and ensure data is managed and secured across its lifecycle. Additionally, the director fosters a culture of data security and literacy within the entity, supervises the value realization agenda for data, and ensures alignment with national security policies and standards, as well as the vision of executive leadership.
Data Management and Governance Section Head	The Data Management and Governance Section Head is responsible for leading, managing, and overseeing both data management and governance initiatives within the government entity. This role focuses on establishing and implementing best practices to ensure data governance and management align with the Entity's business requirements, strategic objectives, and compliance with national data standards. The Section Head collaborates with various teams across the Entity to develop and operationalize frameworks, policies, and processes for data governance and management. This includes improving data quality, accessibility, and protection, while also ensuring data lifecycle management practices are in place. The Section Head fosters a data-driven culture and ensures that data is treated as a strategic asset to drive decision-making and operational excellence.

Stakeholder	Role Description
Data Architecture and Analytics Section Head	The Data Architecture and Analytics Section Head oversees the data architecture and analytics agenda/initiatives within the government entity, ensuring alignment with strategic objectives and national data management standards. This role is responsible for designing and maintaining a secure, scalable data infrastructure that supports data integration, management, and accessibility, as well as Overseeing data modeling, database design, and system integration, developing advanced analytics, data visualization, and reporting solutions to enable informed decision-making. The Section Head collaborates with departments to identify key performance indicators (KPIs), analyze trends, and provide actionable insights that optimize processes, enhance service delivery, and support policy-making. By combining expertise in data architecture and analytics, this role drives a culture of data-driven innovation and operational excellence across the Entity.
Data Governance Specialist	The Data Governance Specialist oversees the frameworks, policies, and procedures of governance and ensures their implementation to guarantee the effective management and utilization of data and resources within the Entity. This role includes developing and maintaining governance structures, leading compliance initiatives, and fostering a culture of accountability and transparency.
Data Quality Specialist	The Data Quality Specialist is responsible for overseeing data quality management processes within the entity. This role involves implementing data quality standards, monitoring data quality, and ensuring data consistency and effective usage across the Entity. The Data Quality Specialist collaborates with various teams to address data issues and enhance overall data quality.
Metadata Specialist	The Metadata Specialist is responsible for managing the Entity's data catalog and metadata assets to enhance data visibility, accessibility, and governance. This role focuses on developing and maintaining metadata standards, ensuring metadata quality, and supporting integration with the data catalog. The specialist plays a key role in enabling data discovery, supporting data-driven initiatives, and ensuring alignment with the Entity's data governance and management strategies.
Data Compliance Specialist	The Data Compliance Specialist ensures the Entity's data practices comply with national regulations, organizational policies, and international standards. This role manages data privacy, security, and governance compliance, conducts audits, mitigates non-compliance risks, and promotes awareness of regulatory requirements. The specialist works with stakeholders to embed compliance controls into data processes, ensuring adherence to legal and ethical standards.

Stakeholder	Role Description
Data Architect	The Data Architect is responsible for designing and implementing the Entity's overall data architecture, including logical and physical data models. This involves creating secure, scalable data structures that align with business needs, security requirements, and national and international data management and governance standards. The Architect ensures proper data integration, quality, and accessibility across systems, working with teams to maintain consistency and accuracy, and support data-driven decision-making to optimize data as a strategic asset.
Data Visualization Officer	The Data Visualization Officer is responsible for building dashboards and visual reports based on data, which are used to provide insights to leadership for decision-making.
Data Engineer	The Data Engineer transforms data into a format that can be easily analyzed and utilized. The Data Engineer works closely with other stakeholders to ensure data quality is maintained and implemented systems adhere to the highest possible standards.
Business Data Analyst	The Business Data Analyst is responsible for analyzing data from multiple sources to provide actionable insights that drive strategic and operational decisions within the Entity. This role involves designing reports and dashboards to effectively communicate findings, collaborating with cross-functional teams to ensure data accuracy and relevance, and aligning analytics with business objectives. The Analyst plays a key role in enabling data-driven decision-making and identifying opportunities to improve processes and outcomes.
Data Strategy Expert	The Data Strategy Expert is tasked with developing and promoting a data management and analytics strategy to achieve broad acceptance across the government entity. The expert identifies innovative ways to utilize data to achieve strategic objectives and enhance effective decision-making. Additionally, they introduce frameworks and practices to deliver accurate, reliable, and actionable data insights.
Data Owners	Data Owners are responsible for their department's (or sub-department's) data and its quality throughout its lifecycle across systems and ownership boundaries. They are accountable for supporting, guiding, reviewing, correcting, and/or approving the work of the data stewards managing their data to ensure their datasets are maintained to the highest possible standards.
Data Stewards	Data Stewards are responsible for identifying datasets related to relevant subdomains for inventory purposes and monitoring data quality metrics within and across entities. They are nominated as a business representative with a deep understanding of a specific data subdomain and can identify functional data requirements and needs.

1.6 Key Success Factors

Executive Sponsorship: Strong executive sponsorship is critical for driving cross-entity data sharing and integration initiatives. Leadership must provide clear direction and support for implementing the necessary policies, infrastructure, and governance frameworks. Sustained engagement from executives ensures that DSII initiatives remain aligned with national priorities and receive the attention and resources needed for long-term success.

Clear Governance and Accountability Structures: Establishing well-defined roles and responsibilities for data sharing, integration, and interoperability is essential. This includes data stewards, data architects, data governance specialists, data owners, data compliance officers, and metadata specialists. A robust governance framework ensures that accountability is embedded throughout the data-sharing lifecycle, from policy creation to implementation and monitoring.

Structured Implementation Plan: A well-structured implementation plan, complete with realistic timelines, milestones, and resource allocation, is essential for achieving success. The plan should account for both quick wins and longer-term strategic initiatives, with flexibility to adjust based on organizational readiness and data maturity levels. Proper planning also ensures that resource constraints, such as funding or staff availability, are addressed early on.

Standardized Data Sharing and Integration Practices: Adopting standardized processes and frameworks for data sharing agreements, integration patterns (e.g., APIs, ETL), and interoperability protocols is essential to enable consistency across government entities. These standards ensure that data can be exchanged securely, efficiently, and in a scalable manner across different systems and platforms.

Technical Infrastructure Readiness: The success of DSII initiatives relies heavily on the Entity's technical capabilities, including middleware platforms, integration tools, and API gateways. Ensuring that the necessary infrastructure is in place—and optimized for performance, scalability, and security—is a foundational requirement for seamless integration and interoperability.

Cross-Entity Collaboration and Change Management: DSII initiatives require coordinated efforts across business and technical teams, often spanning multiple departments and entities. A structured change management plan, including stakeholder engagement, training, and communication, is essential to foster collaboration, overcome resistance, and promote adoption of new data sharing and integration practices.

These success factors form the foundation for implementing the guidelines outlined in the following chapters and for achieving effective, secure, and scalable data sharing and interoperability across the Entity or Entities.

1.7 Compliance with National Data Standards

National Data Standards		QDKC
Control	Specification	Activity
DSII.1.1 Data Sharing, Integration & Interoperability Policy	DSII.1.1.1 Data Sharing, Integration & Interoperability Policy Creation F	2.1 Data Sharing, Integration & Interoperability Policy Creation
	DSII.1.1.2 Data Sharing, Integration & Interoperability Policy Publication F	2.2 Data Sharing, Integration & Interoperability Policy Publication
DSII.1.2 Data Sharing, Integration & Interoperability Planning	DSII.1.2.1 Data Sharing & Integration Assessment & Requirements F	3.1 Data Sharing & Integration Assessment & Requirements
	DSII.1.2.2 Data Sharing & Integration Plan F	3.2 Data Sharing & Integration Plan
DSII.1.3 Open Data Planning	DSII.1.3.1 Open Data Assessment & Requirements F	4.1 Open Data Assessment & Requirements
	DSII.1.3.2 Open Data Plan F	4.2 Open Data Plan
DSII.2.1 Data Sharing, Integration & Interoperability Implementation	DSII.2.1.1 Data Sharing Principles, Process F	5.2 Data Sharing Principles & Process
	DSII.2.1.2 Data Sharing, Agreements & Contracts F	5.1 Data Sharing, Agreements & Contracts
	DSII.2.1.3 Data Integration & Interoperability Architecture F	5.3 Data Integration & Interoperability Architecture
DSII.2.2 Open Data Implementation	DSII.2.2.1 Open Data Processes F	6.1 Open Data Processes
	DSII.2.2.2 Open Data Format & Metadata F	6.2 Open Data Format & Metadata
DSII.3.1 Data Sharing, Integration & Interoperability Performance Management	DSII.3.1.1 Data Sharing, Integration & Interoperability KPIs F	7.1 Data Sharing, Integration & Interoperability KPIs
	DSII.3.1.2 Data Sharing, Integration & Interoperability Monitoring & Reporting F	7.2 Data Sharing, Integration & Interoperability Monitoring & Reporting
	DSII.3.1.3 Data Sharing, Integration & Interoperability Monitoring & Reporting A	
	DSII.3.1.4 Open Data Audit F	7.4 Open Data Audit

Legend: Capability Level



Foundational

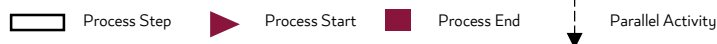
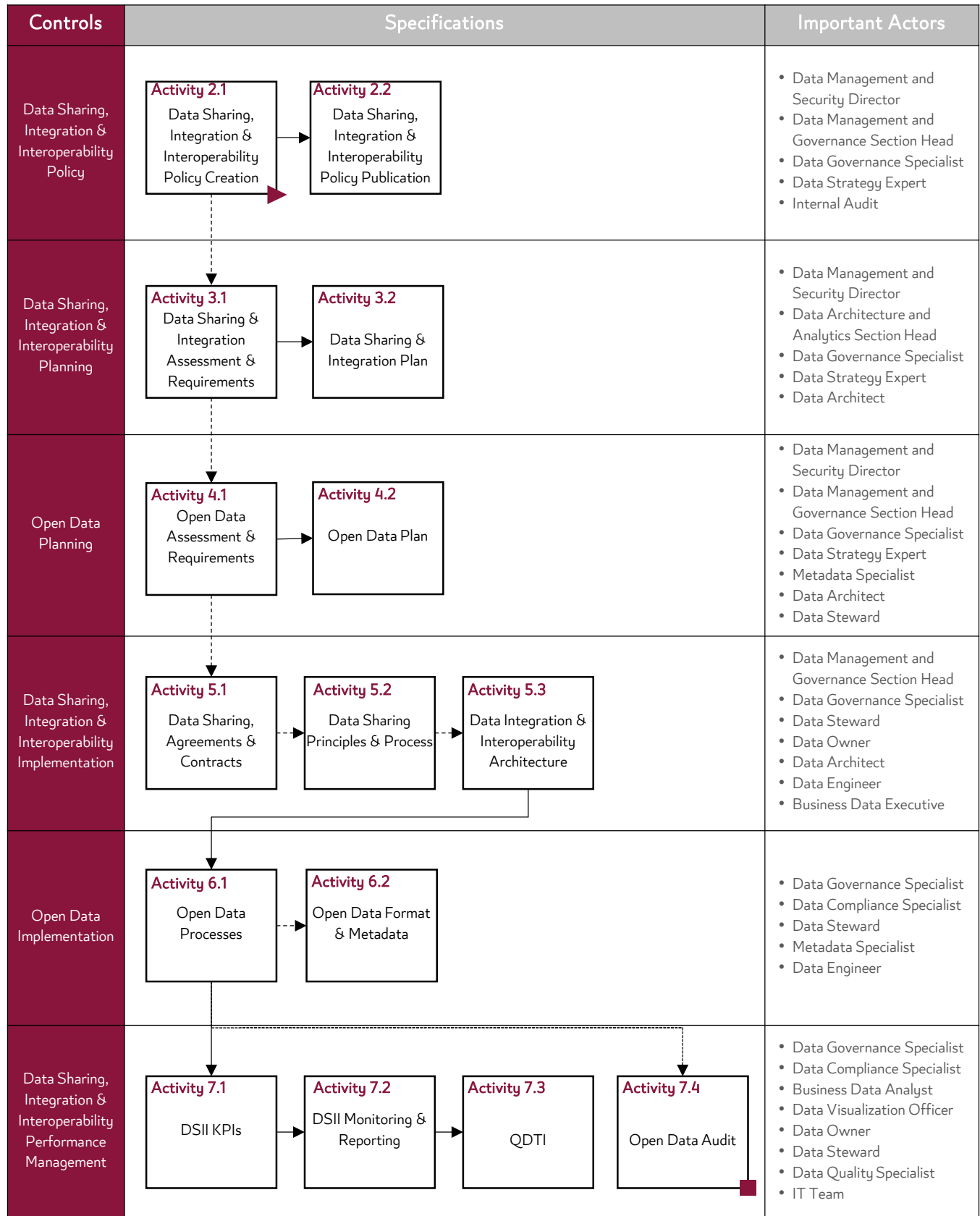


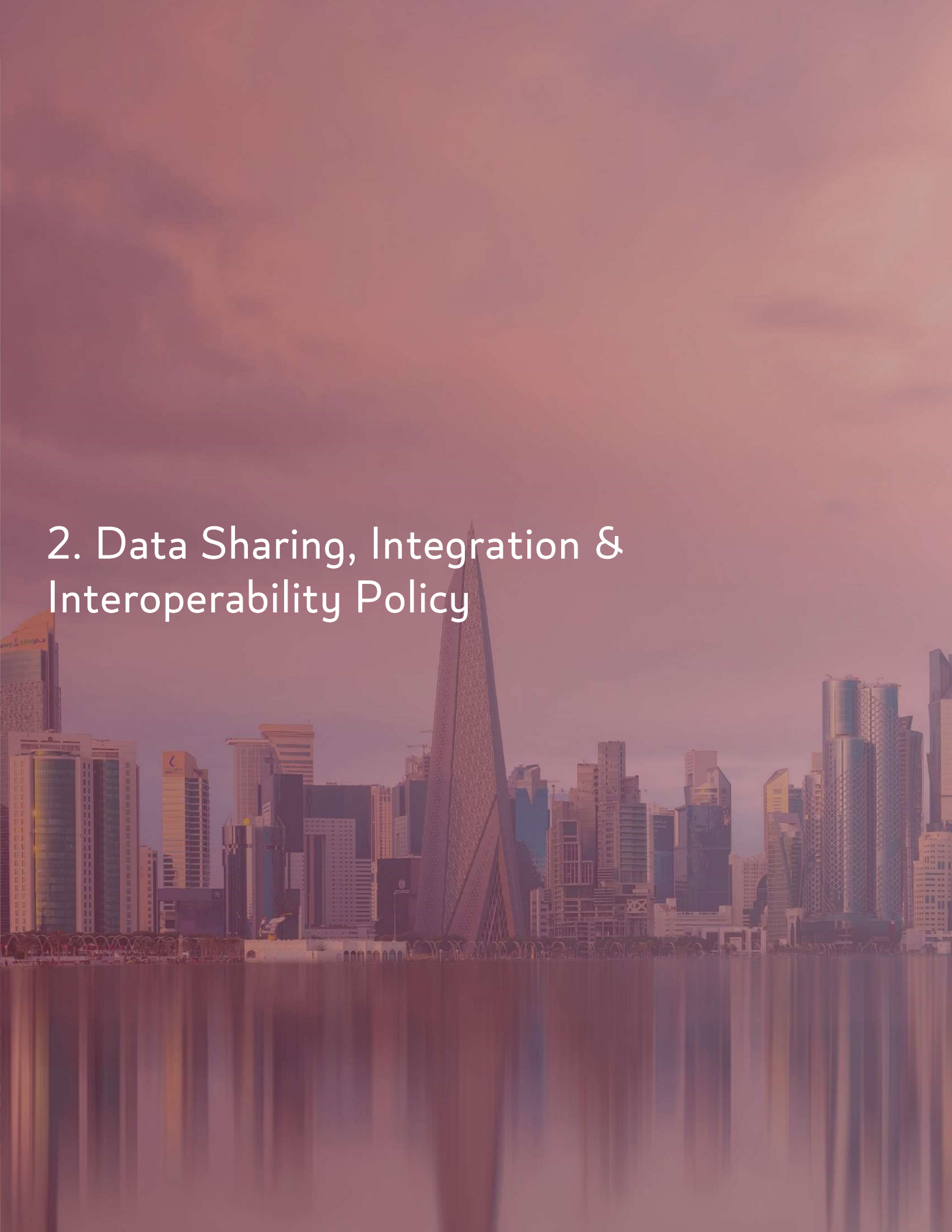
Advanced



Very Advanced

1.8 Domain Level Process Map



A wide-angle photograph of the Dubai skyline at sunset. The sky is a deep, hazy orange and pink. The city's skyscrapers are silhouetted against the sky, with some reflecting the warm light. The water in the foreground is calm, creating a clear reflection of the buildings and the sky. The overall mood is serene and modern.

2. Data Sharing, Integration & Interoperability Policy

2. Data Sharing, Integration & Interoperability Policy

What is a Data Sharing, Integration & Interoperability Policy and why does the Entity need it?

A Data Sharing, Integration & Interoperability Policy is a set of executive-level statements designed to guide and enforce the design, implementation, and oversight of data-sharing, integration, and interoperability across the Entity. This policy ensures that data-sharing practices align with the Entity's broader data strategy and the National Data Management Policy and Standards while facilitating seamless, secure, and efficient data exchange within and between government entities.

The policy provides strategic direction and establishes control mechanisms to ensure high-quality, secure, and interoperable data sharing. It governs various aspects, including data-sharing processes, agreements, integration architecture, platform tools, and solution development lifecycles. It also mandates compliance with performance monitoring, security, and governance requirements, ensuring that data-sharing initiatives remain effective, scalable, and sustainable.

A well-defined policy mitigates risks such as inconsistent data exchange, lack of governance, security vulnerabilities, and interoperability challenges..

A robust Data Sharing, Integration & Interoperability Policy requires periodic reviews and updates to remain relevant and effective. Continuous performance monitoring ensures that key metrics are tracked to enhance data-sharing and integration capabilities.

The remaining sections of this chapter will detail the activities of the below process that will guide the Entity on executing the Data Sharing, Integration & Interoperability Policy:



Guiding Principles for Data Sharing, Integration & Interoperability Policy

1. **Appoint a Single Owner:** Designate a single owner for data policies to ensure accountability and clear leadership in data governance.
2. **Maintain a Data Policy Repository:** Publish and maintain a centralized repository of data policies that is easily accessible to all employees, promoting transparency and awareness.
3. **Annual Review and Updates:** Review data policies at least annually to ensure they remain valid and relevant, using disciplined version control to track changes and updates.
4. **Stakeholder Engagement:** Involve key stakeholders from different departments in the policy development and review process to ensure diverse perspectives and needs are considered.
5. **Training and Awareness:** Implement regular training sessions to educate employees about data policies and their importance, fostering a culture of data.
6. **Compliance and Standards:** Ensure that data policies align with relevant regulatory requirements and industry standards, facilitating compliance and risk management.

2.1 Data Sharing, Integration & Interoperability Policy Creation

The Entity should develop a Data Sharing, Integration & Interoperability Policy to ensure a focused approach for the ability to consistently share high-quality data both within the Entity and between Government Entities.

Process - Data Sharing, Integration & Interoperability Policy Creation

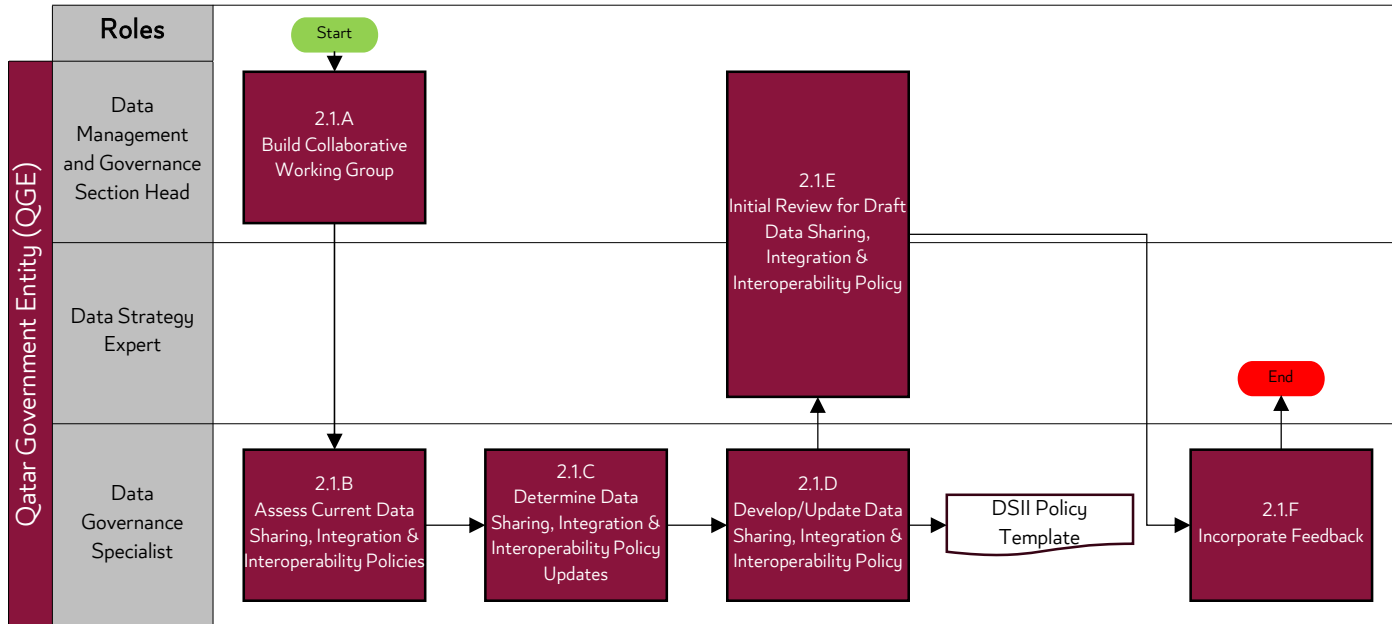


Figure 1: Data Sharing, Integration & Interoperability Policy Creation Process Map

Legend: ■ Process Step ◆ Decision ● Process Start ● Process End □ Document ■ Off-Page Reference

2.1.A

Build Collaborative Working Group: To ensure the policy reflects operational realities, governance needs, and is not developed in isolation, the Entity must establish a collaborative working group of internal stakeholders and subject matter experts. This working group supports policy drafting by providing feedback, identifying operational considerations, and aligning the policy with Entity-specific contexts.

- i. **Establish the Collaborative Working Group:** Form a core team responsible for developing and reviewing the policy.
 - a. Led by the Data Governance Specialist, with oversight from the Data Management & Governance Section Head.
 - b. Include members from Data Governance, Data Architecture, IT, compliance, and stewardship roles.
- ii. **Define Scope and Responsibilities of the Working Group:** Ensure the group's role is clear and time-bound.
 - a. Review proposed policy topics and structure.
 - b. Provide inputs during each phase of policy drafting and review.
 - c. Participate in validation and ensure alignment with Entity needs.
- iii. **Schedule Working Sessions:** Create a structured timeline for engagement.
 - a. Schedule policy drafting workshops and checkpoint reviews.
 - b. Ensure participation is documented and inputs are logged.

2.1.B

Assess Current Data Sharing, Integration & Interoperability Policies: Before developing or updating the Data Sharing, Integration & Interoperability Policy, the Entity must assess its current state. This includes reviewing any existing policies to identify gaps, overlaps, and misalignment with the Entity's data strategy, operational practices, and the National Data Standards. This assessment forms the foundation for effective and relevant policy development.

- i. **Conduct a Structured Policy Review:** Identify and evaluate any existing policies related to Data Sharing, Integration & Interoperability.
 - a. If exists, review current documentation for:
 - Data Sharing, Integration & Interoperability policy overview, purpose, scope, objectives, applicability, validity, policy statements, roles and responsibilities
 - Supporting Data Sharing, Integration & Interoperability standards or procedures that may inform or support future policy development
 - b. Assess whether the policy content is outdated, incomplete, duplicated, or missing.
- ii. **Evaluate Alignment with Strategic and National Requirements:** Assess how well the current policy (if exists) supports key governance needs. Review for:
 - **Relevance to Strategic Objectives:** Does the policy align with the Entity's data strategy?
 - **Compliance with National Standards:** Does it reflect alignment with the current National Data Policy and National Data Standards?
 - **Clarity and Accessibility:** Is the policy easy to read, use, and apply?
- iii. **Document Findings and Key Gaps:** Summarize the outcomes of the assessment in preparation for step 2.1.C.
 - a. List key areas where new or updated policy content is needed.
 - b. Identify risks or inconsistencies that should be addressed (e.g., lack of version control, no update schedule).
 - c. Share findings with the collaborative working group for validation.



Key Message / Information

Building a working group ensures the policy is not developed in isolation but reflects the real governance needs of the Entity.

2.1.C
(1/2)

Determine Data Sharing, Integration & Interoperability Policy Updates: Based on the findings from the policy assessment and input from the working group, the Entity must outline the specific updates or new content areas required in the Data Sharing, Integration & Interoperability Policy. This step ensures that policy development is focused, complete, and responsive to both internal and national governance requirements.

2.1.C
Cont.
(2/2)

- i. **Define the Scope of Policy Creation/Update:** Translate assessment findings into a structured update plan.
 - a. Identify sections of the policy that need to be:
 - Created from scratch
 - Updated for alignment with strategy or standards
 - Removed due to redundancy or irrelevance
 - b. Determine whether the update (if any) qualifies as a major revision (e.g., structural change, expanded scope) or minor revision (e.g., wording adjustments).
- ii. **Prioritize Content Areas for Inclusion:** Ensure the policy covers all required Data Sharing, Integration & Interoperability topics.
 - a. Reference the Data Sharing, Integration & Interoperability domain within the National Data Policy and National Data Standards to prioritize content including but not limited to:
 - Data Sharing Process
 - Data Sharing Agreements
 - Platform and Tools
 - Performance monitoring and version control
 - b. Map these areas against identified gaps and stakeholder feedback.
- iii. **Create a Policy Update Action Plan:** Develop a high-level roadmap for the policy drafting process.
 - a. Outline key tasks, responsible roles, and delivery timelines.
 - b. Align this plan with the collaborative working group's availability and input schedule.
 - c. Use the action plan to guide coordination with stakeholders and support tracking of progress throughout the development cycle.

2.1.D
(1/3)

Develop/Update Data Sharing, Integration & Interoperability Policy: Using the agreed-upon creation/update scope and structure, the Entity must develop or revise the Data Sharing, Integration & Interoperability Policy to ensure a focused approach for the ability to consistently share high-quality data. The policy must be clear, actionable, aligned with strategic objectives, and compliant with the national data standards.

- i. **Draft Policy Content Using Approved Structure:** The Data Governance Specialist leads the drafting exercise using the standard data sharing, integration & interoperability policy template.
 - a. Use the Data Sharing, Integration & Interoperability Policy Template to structure the document.
 - b. The policy should include, at a minimum:
 - Overview, purpose, scope, and objectives
 - Policy applicability, validity, and review process
 - Guidelines aligned with the National Data Management Policy and Standards
 - Detailed policy statements covering:
 - Data Sharing Process
 - Data Sharing Agreements

- Current and Target Data Integration & Interoperability Architecture
- Integration & Interoperability Solution Development Lifecycle
- Integration & Interoperability Platform and Tools
- Performance Management and Monitoring

- Periodic Policy Review and Updates
- Key Policy Performance Indicators

Asset Guidance

The **Data Sharing, Integration & Interoperability Policy Template** is a sample table of contents the Entity can refer to when drafting its policy. It includes the topics required by the standards, as well as additional recommended topics to consider. It also gives a sample of policy statements for one topic from the table of content to help entities draft the policy document.

Illustrative

Table of Contents	
1 Introduction	#
1.1 Overview	#
1.2 Purpose	#
1.3 Scope & Applicability	#
1.4 Objectives	#
2 Data Sharing, Integration and Interoperability Policies	#
2.1 Data Sharing Process	#
2.2 Data Sharing Agreements	#
2.3 Current Data Integration & Interoperability Architecture	#
2.4 Target Data Integration & Interoperability Architecture	#
2.5 Integration & Interoperability Solution Development Lifecycle	#
2.6 Integration & Interoperability Platform and Tools	#
2.7 Performance Management and Monitoring	#
2.8 Key Policy Performance Indicators	#
3 Periodic Policy Review and Updates	#
3.1 Revision Frequency	#
3.2 Revisions	#
3.3 Archival Procedure	#
4 Roles within the Scope of this Policy	#
5 Related Legislation, References, and Documents	#
6 Document Control	#

2.1 Data Sharing Process

1. All data sharing activities within the Entity and with external stakeholders shall adhere to the principles of data transparency, accountability, and ethical use, ensuring compliance with the National Data Standards.
2. Only authorized data sharing requests that fulfill a legitimate business, operational, or legal purpose shall be processed. Requests must be documented and approved by designated Data Stewards and relevant stakeholders.
3. Data sharing requests shall be submitted through the Entity's data sharing platform or formal request channels. Each request must include details such as the purpose, scope, data type, and intended use. Requests shall be evaluated for data classification, legal, and compliance considerations before approval.
4. The classification level of all requested data shall be reviewed and verified to ensure appropriate sharing based on sensitivity and access control requirements.
5. A signed data sharing agreement or contract must be in place before any data is shared. This agreement shall define the scope, purpose, terms of use, data protection measures, and responsibilities of all parties involved.
6. All shared data must be governed by strict access controls, encryption, and monitoring measures to ensure data security, privacy, and integrity throughout the data sharing lifecycle.
7. All data sharing activities shall be tracked and monitored for compliance. Audits shall be conducted periodically to ensure adherence to the data sharing process and to identify areas for improvement.
8. A record of all shared data transactions, including details of recipients, purpose, and duration, shall be maintained and reviewed regularly to ensure traceability and accountability.
9. Data sharing agreements shall include clear terms for termination, including procedures for the return or destruction of shared data and revocation of access to ensure ongoing data protection.

*** (Sample policy statements for a topic) ***

- ii. **Apply Clear and Actionable Language:** Ensure the policy is practical, enforceable, and accessible to all stakeholders.
 - a. Use direct, concise language tailored to the Entity's context.
 - b. Ensure each policy statement is tied to a strategic or operational outcome.
 - c. Emphasize responsibilities, process expectations, and compliance triggers.
- iii. **Prepare the Draft for Preliminary Review:** Finalize the draft as a working version for internal feedback.
 - a. Share with the collaborative working group.
 - b. Confirm the draft addresses all previously identified policy gaps.
 - c. Prepare a feedback summary log for tracking suggestions in the next step.

2.1.D
Cont.
(3/3)**Key Message / Information**

Draft the policy using clear and concise language that reflects the Entity's specific needs while accommodating diverse operational scenarios. Each policy statement should be directly tied to broader business objectives, demonstrating how it supports strategic goals and organizational priorities. Emphasize actionable and enforceable language to enable consistent implementation and ensure compliance.

2.1.E
(1/2)

Initial Review for Draft Data Sharing, Integration & Interoperability Policy: Once the policy draft is complete, the Entity must conduct an internal review to validate alignment with the National Data Standards, legal and regulatory obligations, and strategic objectives. This review ensures the policy is robust, compliant, and ready for broader publication steps.

- i. **Conduct Governance and Strategy Review:** The draft is reviewed by key stakeholders for policy integrity and relevance.
 - a. The Data Management & Governance Section Head and Data Strategy Expert assess the draft for:
 - Strategic alignment with the Entity's data governance objectives
 - Compliance with National Data Policy and Standards
 - Consistency with related internal policies (e.g., data privacy, quality)
 - b. Confirm the policy structure follows the approved template and includes all required content areas.
- ii. **Validate Legal, Regulatory, and Operational Compliance:** Ensure the policy supports risk management and audit readiness.
 - a. Identify any areas requiring clarification or legal alignment.
 - b. Ensure the policy does not conflict with regulatory or operational obligations.
 - c. Highlight areas where governance enforcement or change management will be required.
- iii. **Capture and Document Feedback:** Record feedback from reviewers in a structured format to inform final refinements.
 - a. Document all comments and suggestions in a feedback log.
 - b. Prioritize revisions based on severity (e.g., compliance issues vs. language improvement).
 - c. Share the feedback log with the Data Governance Specialist for implementation in 2.1.F.

**Key Message / Information**

This review phase ensures the draft policy is credible, compliant, and strategically sound—before formalization or publication.

2.1.F

Incorporate Feedback: Following the internal review, the Entity must revise the draft Data Sharing, Integration & Interoperability Policy to reflect feedback received from governance, strategy, legal, and operational stakeholders. This step ensures the final version is complete, accurate, and ready for formal approval and publication.

- i. **Review and Prioritize Feedback Log:** Work through the feedback log collected in 2.1.E in a structured and transparent way.
 - a. Categorize feedback by type (e.g., compliance, structure, clarity, alignment).
 - b. Prioritize revisions based on criticality, starting with compliance and strategy gaps.
 - c. Flag any unresolved or disputed comments for follow-up discussion with the Data Management & Governance Section Head.
- ii. **Apply Revisions to the Draft Policy:** Update the policy draft to reflect accepted changes.
 - a. Revise content in the official policy document, maintaining formatting consistency.
 - b. Track major changes using version control or change highlights.
 - c. Ensure all policy components (e.g., roles, responsibilities, review cycle) are fully addressed.
- iii. **Finalize the Policy Document for Approval:** Prepare the updated policy for formal submission.
 - a. Confirm that all feedback has been addressed or closed.
 - b. Update metadata such as version number, revision date, and approval status.
 - c. Share the final version with the Data Management & Governance Section Head for submission into the Entity's governance approval workflow.

RACI Matrix - Data Sharing, Integration & Interoperability Policy Creation

Indicative

Sr No.	Activity	Data Management & Security Director	Data Management and Governance Section Head	Data Governance Specialist	Collaborative Working Group	Data Strategy Expert	Legal Team
2.1.A	Build Collaborative Working Group	A	R	C	I	I	
2.1.B	Assess Current Data Sharing, Integration & Interoperability Policies		A	R	C	C	
2.1.C	Determine Data Sharing, Integration & Interoperability Policy Updates		A	R	C	C	
2.1.D	Develop/Update Data Sharing, Integration & Interoperability Policy		A	R	C	C	C
2.1.E	Initial Review for Draft Data Sharing, Integration & Interoperability Policy	A	R	I	C	R	C
2.1.F	Incorporate Feedback		A	R	C		

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Build Collaborative Working Group of SMEs



Draft Data Sharing, Integration & Interoperability Policy

2.2 Data Sharing, Integration & Interoperability Policy Publication

This activity will guide the Entity on the steps to publish its data policies.

Process – Data Sharing, Integration & Interoperability Policy Publication

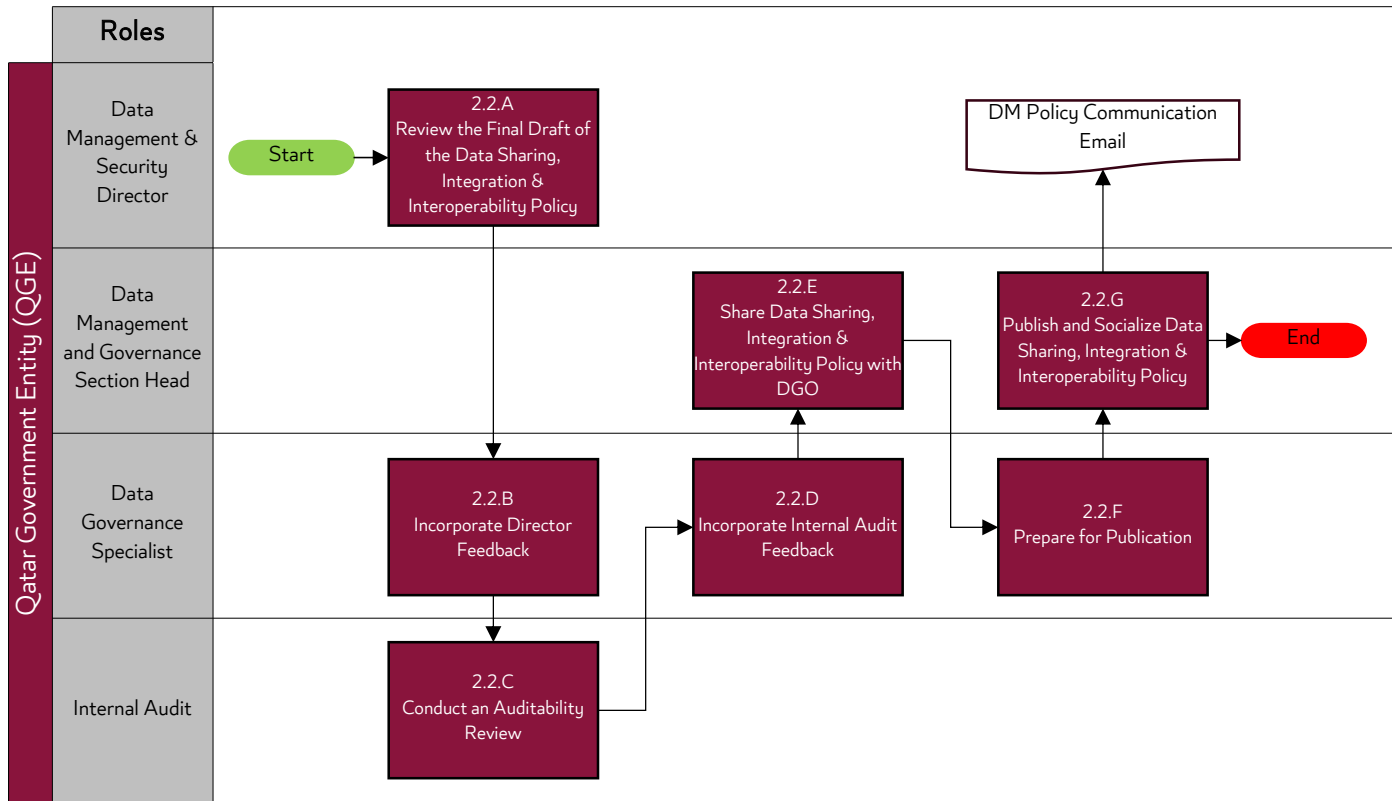


Figure 2: Data Sharing, Integration & Interoperability Policy Publication Process Map

Legend: ■ Process Step ◆ Decision ● Process Start ● Process End □ Document ■ Off-Page Reference

2.2.A
(1/2)

Review the Final Draft of the Data Sharing, Integration & Interoperability Policy: Before proceeding to formal approval and publication, the Entity must conduct a final review of the completed Data Sharing, Integration & Interoperability Policy. This step ensures that the policy aligns with the Entity's data management strategy, governance principles, and business objectives, and that any remaining gaps are identified and addressed.

- i. **Confirm Strategic and Operational Alignment:** The Data Management & Security Director reviews the final draft to ensure policy alignment with enterprise priorities. Assess whether the policy:
 - Reflects the Entity's data governance framework and strategic direction
 - Supports operational effectiveness and clear role accountability
 - Aligns with internal governance principles (e.g., privacy, quality, integration)
- ii. **Identify Gaps, Misalignments, or Ambiguities:** Ensure the policy content is comprehensive and implementation-ready.
 - a. Flag missing elements, conflicting statements, or unclear policy language.
 - b. Identify any inconsistencies with related documents.
 - c. Provide written feedback on areas requiring revision or clarification.

2.2.A
Cont.
(2/2)

- iii. **Document Review Outcome and Next Steps:** Ensure feedback is structured and ready for incorporation in the next phase.
- Share feedback with the Data Governance Specialist in a structured format.
 - Record major comments for traceability (e.g., in a review tracker or comment log).
 - Confirm that feedback will be addressed in 2.2.B before publication proceeds.

**Key Message / Information**

This review step ensures the policy is accurate, aligned, and strategically sound before it enters the final approval and publication process.

2.2.B

Incorporate Director Feedback: Following the strategic review by the Data Management & Security Director, the Data Governance Specialist must revise the draft policy to reflect the provided feedback. This step ensures the policy addresses all strategic and governance-related concerns before moving into auditability review.

- Review and Categorize Feedback:** Organize the feedback received from the director review for systematic implementation.
 - Categorize comments (e.g., structural, content, compliance-related)
 - Prioritize critical feedback, especially those that impact alignment with strategic direction or compliance.
 - Clarify ambiguous feedback, if needed, through direct engagement with the reviewer.
- Apply Revisions to the Policy Draft:** Update the policy content to incorporate accepted feedback.
 - Edit the draft to address feedback while preserving clarity and consistency.
 - Ensure changes strengthen strategic alignment, enforceability, and policy coherence.
 - Update document versioning and maintain a changelog of revisions made.
- Prepare the Policy for Auditability Review:** Ready the revised document for submission into the internal review and audit process.
 - Confirm that all priority feedback has been addressed and documented.
 - Finalize the revised version for handover to the next stage.
 - Maintain a summary of revisions to support auditability and approval traceability.

2.2.C

Conduct an Auditability Review: Before final approval, the Entity must ensure the policy meets audit readiness criteria. This includes confirming that the policy is version-controlled, aligned with internal regulatory and operational standards and procedures, and compliant with documentation standards required for future audits and inspections. Feedback is gathered to address gaps in accountability, compliance, or performance tracking, if necessary.

2.2.D

Incorporate Internal Audit Feedback: Integrate feedback and recommendations from the internal audit review to address any remaining compliance, accountability, or documentation gaps. This step ensures the policy meets all auditability requirements and is fully prepared for final approval and formal publication.

2.2.E

Share Data Sharing, Integration & Interoperability Policy with DGO: The Entity must submit the finalized draft of the Data Sharing, Integration & Interoperability Policy to the DGO for formal review and feedback. This step ensures the policy aligns with national governance frameworks, regulatory expectations, and recognized data management best practices.

- i. **Submit the Finalized Policy to the DGO:** The policy is formally submitted through the appropriate channel for DGO review.
 - a. Send the finalized draft via the designated email or submission platform (as required at the respective point in time).
 - b. Confirm version number, submission date, and the responsible point of contact.
- ii. **Provide Supporting Context and Summary:** The submission must include a brief explanation to facilitate DGO review.
 - a. Summarize the policy scope, purpose, and any recent updates.
 - b. Highlight key areas where the policy aligns with national standards or fills previously identified governance gaps.
- iii. **Track the Submission and Prepare for Follow-Up:** Maintain traceability and readiness to act on feedback.
 - a. Log the submission in the Entity's governance repository or tracking system.
 - b. Note expected response timelines and plan for feedback incorporation in Step 2.2.F.



Key Message / Information

Engaging the DGO in the policy review process reinforces national alignment and promotes consistency across government-wide data sharing, integration & interoperability initiatives.

2.2.F
(1/2)

Prepare for Publication: Once all feedback has been incorporated, the Entity must finalize the policy for formal publication. This step ensures the document is properly versioned, archived, and ready to be communicated and distributed across the organization.

- i. **Finalize Policy Content and Format:** Ensure the policy is complete and ready for publishing.
 - a. Confirm all internal and DGO feedback has been fully addressed.
 - b. Apply final formatting, ensure clarity and consistency, and validate that the structure follows the approved policy template.
 - c. Update metadata fields including version number, status, effective date, and next review cycle.

2.2.F
Cont.
(2/2)

- ii. **Archive and Register the Final Version:** Secure the policy in Entity records and ensure traceability.
 - a. Save the finalized document in the Entity's governance repository or policy management system.
 - b. Maintain version history and a changelog, including approval and feedback documentation.
 - c. Confirm access permissions are in place ahead of publication and communication.
- iii. **Notify Stakeholders of Upcoming Publication:** Alert relevant teams that the policy is finalized and will be published in 2.2.G.
 - a. Share a summary message with data owners, stewards, and governance leads.
 - b. Prepare communication materials (e.g., email, announcement note) for rollout.

**Key Message / Information**

Preparing the policy for publication ensures it is complete, traceable, and properly maintained, enabling a smooth transition to Entity-wide communication and adoption.

2.2.G
(1/2)

Publish and Socialize the Data Sharing, Integration & Interoperability Policy: Once finalized, the Entity must publish the policy in an accessible location and actively communicate its purpose, scope, and expectations to relevant stakeholders. This step ensures the policy is not only available, but also understood, adopted, and applied consistently across the organization.

- i. **Publish the Policy in the Official Repository:** Ensure centralized access and version control.
 - a. Upload the final policy to the Entity's internal policy repository or governance portal.
 - b. Tag the document with metadata such as owner, version, status, effective date, and next review date.
 - c. Confirm appropriate access permissions are configured.
- ii. **Communicate Policy Availability and Key Messages:** Promote awareness and usage of the policy across roles and departments.
 - a. Use the Policy Communication Email Template to inform staff of the policy release.
 - b. Include the policy's purpose, scope, and summary of key expectations.
 - c. Tailor communications by role if necessary (e.g., Stewards, Data Owners, IT, Legal).
- iii. **Reinforce Policy Adoption Through Awareness Channels:** Ensure the policy is understood and referenced in practice.
 - a. Present the policy in onboarding, training sessions, or governance briefings.
 - b. Link the policy in supporting materials such as guidelines, templates, or dashboards.
 - c. Gather informal feedback or usage indicators to monitor engagement.

 Asset Guidance

The **Data Management Policy Communication Email Template** is a sample announcement email the Entity can use to notify staff about the publication of the policy and provide key information.

Illustrative

Subject: [IMPORTANT] New [Domain Name] Policy Published – Please Review

Dear [Recipient Name/Team],

We are pleased to announce the publication of the new [Domain Name] Policy, which is now in effect as of [Date]. This policy is designed to [briefly explain the purpose, e.g., "ensure the effective management of metadata and data catalog operations across the entity"] and aligns with the National Data Standards.

What is the Policy About?

The [Domain Name] Policy governs the management, oversight, and compliance of [specific domain] activities across the entity. It outlines critical guidelines and procedures, including:

- [Key Point 1, e.g., "Data Management and Organizational Structure"]
- [Key Point 2, e.g., "Version control and security measures"]
- [Key Point 3, e.g., "Metadata quality and governance"]

This policy has been developed in collaboration with the Data Committee and relevant stakeholders, ensuring compliance with the national data management standards.

How Does This Affect You?

- **Action Required:** Please review the policy and ensure that your team is aligned with its requirements. The policy affects [mention departments or roles impacted, e.g., "all data stewards, IT staff, and department heads"]. Compliance with this policy is essential to ensure adherence to the National Data Management Standards, which are critical to the entity's data governance and operational success.
- **Changes to Processes:** [If applicable, briefly describe any changes to current workflows or responsibilities as outlined by the policy.]

Where Can You Access the Policy?

The policy is available on our internal [intranet/portal] and can be accessed through the following link:
[Link to Policy Document]

Next Steps

- **Review Deadline:** Please ensure that you and your team have reviewed the policy by [Date].
- **Training/Workshops:** [If applicable] We will be hosting a [training/workshop] on [Date] to assist teams in understanding and applying the new policy.
- **Ongoing Support:** For questions, feedback, or support, please contact [Support Contact] at [email/phone number].

Thank you for your attention to this important matter and for your cooperation in ensuring compliance with the new policy. Together, we can maintain a strong framework for [mention domain, e.g., "data catalog and metadata management"] across the entity.

Best regards,
[Your Name]
[Your Position]
[Your Department]
[Contact Information]

**Key Message / Information**

Publishing the policy is not the end of the process. It must be socialized effectively so that stakeholders understand how it applies to their roles and responsibilities.

Process Risks: Develop and Publish Data Sharing, Integration & Interoperability Policy

Risk	Severity	Mitigation
1. Lack of engagement from business SMEs due to other demanding responsibilities.	High	Data Management and Governance Section Head to secure management commitment for the key SMEs required to develop the Data Sharing, Integration & Interoperability policy.
2. No standardized or existing process to publish the policy.	Medium	Data Management and Governance Section Head to coordinate with the compliance office to establish a centralized process and repository for the publication and maintenance of the Data Sharing, Integration & Interoperability policy.

RACI Matrix - Data Sharing, Integration & Interoperability Policy Publication

Indicative

Sr No.	Activity	DGO	Data Management & Security Director	Data Management and Governance Section Head	Data Governance Specialist	Data Strategy Expert	Internal Audit
2.2.A	Review the Final Draft of the Data Sharing, Integration & Interoperability Policy		A/R	C			
2.2.B	Incorporate Director Feedback		C	A	R		
2.2.C	Conduct an Auditability Review			I	I		A/R
2.2.D	Incorporate Internal Audit Feedback			A	R	C	
2.2.E	Share Data Sharing, Integration & Interoperability Policy with DGO	I	A	R			
2.2.F	Prepare for Publication			A	R	C	
2.2.G	Publish and Socialize Data Sharing, Integration & Interoperability Policy		A	R		C	

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Publish Data Sharing, Integration & Interoperability Policy

3. Data Sharing, Integration & Interoperability Planning



3. Data Sharing, Integration & Interoperability Planning

What is a Data Sharing, Integration & Interoperability Planning and why does the Entity need it?

Data Sharing, Integration, and Interoperability Planning provides a structured approach to managing data exchange across the entity. It retrieves or refreshes the maturity assessment for the DSII domain to build an effective roadmap, defines business and technical requirements, maps source systems and environments, identifies key entities, and documents data models, lineage, and any integration or interoperability gaps.

This planning process supports the identification of inefficiencies, the reduction of data silos, and the alignment of integration and interoperability efforts with the Entity's overall data strategy and national data standards. It also facilitates the creation of a Data Sharing, Integration, & Interoperability Plan, including a roadmap that outlines key initiatives, key activities, timelines, milestones, stakeholders, and interdependencies to enable effective implementation.

A well-developed plan strengthens data governance, ensures regulatory compliance, and enhances scalability, enabling seamless data sharing within and across entities.

The remaining sections of this chapter will detail the activities of the below process that will guide the Entity on executing Data Sharing, Integration & Interoperability Planning:



Guiding Principles for Data Sharing, Integration & Interoperability Planning

1. **Define Clear Objectives:** Establish a structured approach to data sharing, integration, & interoperability, ensuring alignment with the Entity's data strategy and operational objectives.
2. **Identify Key Stakeholders:** Engage relevant stakeholders, including data owners, IT teams, and governance bodies, to define business and technical requirements.
3. **Prioritize Interoperability:** Design integration and interoperability solutions that support seamless data exchange across systems while adhering to national data standards.
4. **Ensure Scalability and Flexibility:** Develop integration plans that accommodate evolving business needs and emerging technologies, ensuring long-term sustainability.

3.1 Data Sharing, Integration & Interoperability Assessment & Requirements

This activity guides the Entity in conducting the maturity assessment, and documenting requirements for data sharing, integration, and interoperability. It also facilitates an initial assessment to identify pain points, and gaps in data movement, integration and interoperability — both within the Entity and in its interactions with external entities.

3.1.1 Data Sharing, Integration, and Interoperability Maturity Assessment

To build an effective roadmap, the Entity must first assess its current state. This activity guides the Entity in retrieving or refreshing its maturity assessment for the DSII domain using the Data Management Current Maturity Assessment Framework and Data Management Maturity Model. The assessment identifies current strengths, gaps, and improvement priorities across governance, processes, and tools.

Process – Data Sharing, Integration, and Interoperability Maturity Assessment

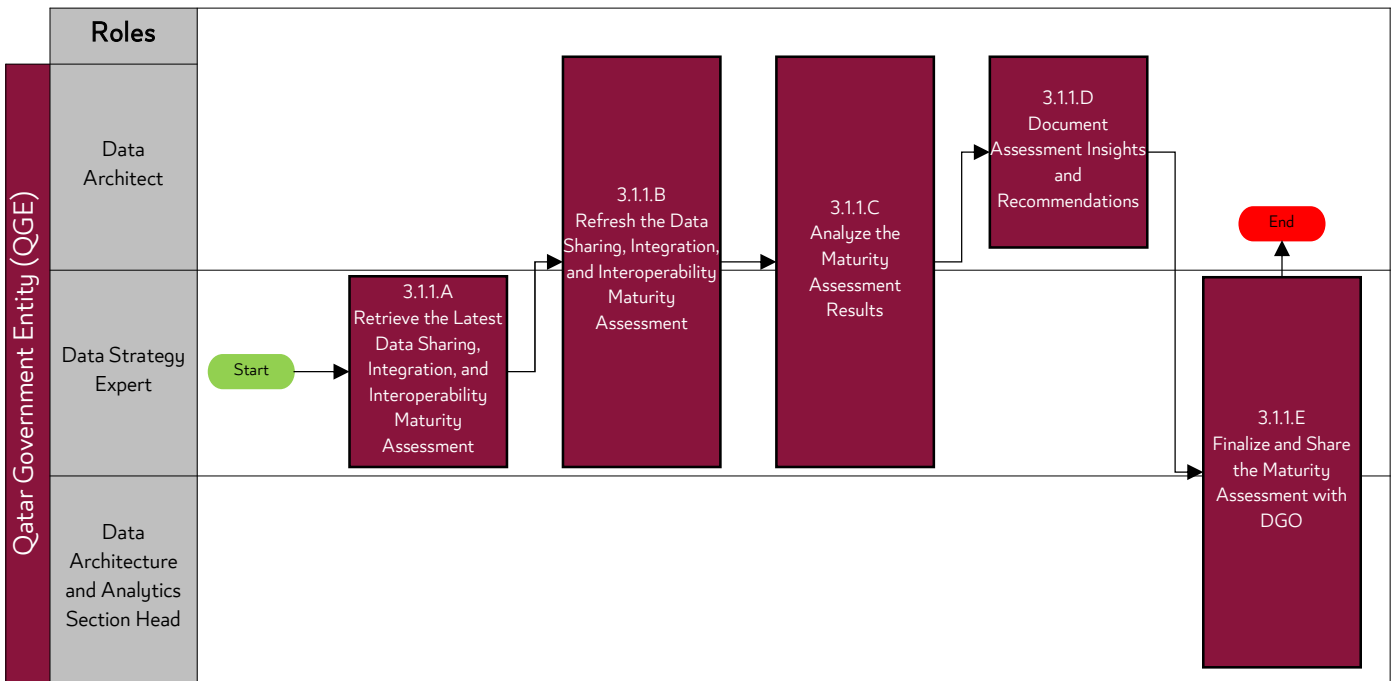


Figure 3: Data Sharing, Integration, and Interoperability Maturity Assessment Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

3.1.1.A (1/2)

Retrieve the Latest Data Sharing, Integration, and Interoperability Assessment. The Entity must retrieve its most recent maturity assessment to establish a baseline understanding of current capabilities across the DSII domain. This step is essential for determining whether an update or reassessment is required and provides the foundation for roadmap planning.

- i. **Request Existing Assessment Report:** The Data Architect collaborates with the Data Strategy Expert to locate and retrieve the latest data sharing, integration, and interoperability maturity assessment.
 - Engage the Data Governance Specialist to obtain the most recent maturity assessment report.
 - Confirm that the report includes maturity ratings across all DSII dimensions.
 - Validate that the report was formally conducted and documented using the approved Data Management Current Maturity Assessment Framework.

3.1.1.A
Cont.
(2/2)

- ii. **Validate the Currency of the Assessment:** The Data Architect and Data Strategy Expert jointly evaluate whether the existing assessment is still valid and representative of current capabilities.
 - Confirm that the assessment was completed within the past 12 months.
 - Assess whether any significant organizational, tooling, or process changes have occurred since the report.
 - If the report is outdated or misaligned with the Entity's current state, outline that a refresh will be required.
 - Note any open or unaddressed recommendations that may still be relevant and require integration into the new roadmap.



Key Message / Information

Ensure that the maturity assessment covers both business and technical dimensions, and the tools used. If the assessment is fragmented or was conducted informally, treat it as insufficient and proceed to a formal refresh.

A current and validated maturity assessment is essential to building a grounded and targeted improvement roadmap. Without it, any planning activity risks being disconnected from the entity's operational reality and compliance posture.

3.1.1.B
(1/2)

Refresh the Data Sharing, Integration, and Interoperability Maturity Assessment (If Required):

If the Entity's existing DSII maturity assessment is outdated, incomplete, or unavailable, a full reassessment must be conducted using the **Data Management Current Maturity Assessment Framework** and the supporting **Data Management Maturity Model** (referenced in Activity 2.2 within the Data Management Strategy and Governance domain guidelines). This ensures that the planning efforts in the roadmap are grounded in an accurate and current view of the Entity's data sharing, integration, and interoperability capabilities.

- i. **Initiate the Refresh Process:** The Data Architecture and Analytics Section Head triggers the reassessment and mobilizes key stakeholders.
 - Formally launch the maturity refresh process by assigning ownership to the Data Architect.
 - Confirm participation of relevant stakeholders including Data Stewards, Data Owners, IT, and business users.
 - Communicate the scope and purpose of the reassessment to all contributors.
- ii. **Apply the Data Management Current Maturity Assessment Framework:** The Entity must use the **Data Management Maturity Model** to evaluate DSII current-state capabilities.
 - Review and respond to each of the assessment dimensions (Organization, Integration Strategy, Open Data Strategy, etc.) using the 1–5 scale.
 - Ensure contributors refer to actual organization, processes & policies, and tools documentation, and not perceived maturity.
 - Encourage team discussions and workshops to calibrate responses and promote honest evaluation.

3.1.1.B
Cont.
(2/2)

- iii. **Consolidate Input and Finalize Scores. Leveraging the Data Management Current Maturity Assessment Framework**, the Data Architect consolidates all responses, supporting evidence, and justifications.

- Validate consistency across responses and resolve conflicting input where necessary.
- Assign a final maturity level (1–5) for each dimension, including rationale.
- Prepare or update the maturity heatmap for the DSII domain, and document relevant observations.



Key Message / Information

Encourage transparency and use collaborative working sessions to resolve subjectivity and misalignment between technical and business contributors.

3.1.1.C
(1/2)

Analyze the Maturity Assessment Results: Once the DSII maturity assessment has been completed or refreshed, the Entity must analyze the results to understand current strengths, weaknesses, and capability gaps. This analysis forms the foundation for identifying high-priority improvement areas and preparing a focused roadmap.

- i. **Review Maturity Scores Across the DSII Dimensions:** The Data Architect and Data Strategy Expert jointly evaluate the final maturity scores to identify trends and performance patterns.
- Review assigned maturity levels for all DSII dimensions using the 1–5 scale.
 - Identify areas of high maturity that reflect institutionalized and standardized practices.
 - Identify low-performing areas (e.g., Data Curation, API Management, etc.) that could hinder effective governance or interoperability.
- ii. **Conduct Thematic Gap Analysis:** Group maturity results into logical clusters (e.g., governance, tooling, processes) to derive broader insights.
- Categorize assessment results by functional theme:
 - Governance and ownership
 - Processes (technical/business)
 - Tools
 - Open Data
 - Identify cross-cutting gaps that appear across multiple dimensions (e.g., lack of defined integration processes affecting availability of API Management Capabilities).
 - Highlight dependencies. For example, weak role clarity (low score in “Organization”) may contribute to a poorly defined integration architecture (low score in “Integration Processes”).
- iii. **Identify Quick Wins and Structural Gaps:** Segment findings based on the level of effort and impact to prioritize next steps.

3.1.1.C
Cont.
(2/2)

- **Quick wins:** improvements that can be implemented with minimal effort (e.g., assigning data architects).
- **Structural gaps:** issues that require strategic investment or change management (e.g., tool implementation, entity-wide policy enforcement).
- Recommend areas that should be prioritized in the roadmap due to compliance implications or high strategic value (e.g., Defining Integration Architecture).



Key Message / Information

This analysis step is critical in converting maturity data into actionable insight. The quality of the roadmap depends on how well the Entity understands the underlying causes and impacts of its current maturity gaps.

3.1.1.D
(1/2)

Document Assessment Insights and Recommendations: The Entity must consolidate the results of the DSII maturity assessment into a structured executive-level slide. This summary is intended to present a high-level overview of the current maturity state, key findings, and prioritized opportunities for improvement. It will serve as a key input for roadmap planning and internal/external alignment.

i. **Populate the Data Maturity Summary Slide:** The Data Architect prepares a summary slide (as referenced in the Data Management Current Maturity Assessment Framework in Activity 2.2 within the Data Management Strategy and Governance domain guidelines) that captures the summary maturity of the DSII domain.

a. **Maturity Score (Gauge):**

- Calculate the overall average maturity score across all DSII dimensions.
- Use the 1–5 scale and visually represent the result in the dial/gauge format.
- Select the appropriate maturity level label (Initial, Limited, Evolving, etc.).

b. **People, Process & Policies, and Tools Ratings:**

- Assign indicative scores across People, Process, and Technology based on maturity dimension grouping:
 - People: e.g., Organization
 - Processes & Policies: e.g., Integration Strategy, Integration Process, Source System Analysis
 - Tools: e.g., Data Integration & Streaming Platform

c. **Key Insights & Findings:**

- Summarize major pain points or maturity gaps discovered.
- Highlight inconsistencies in governance, lack of tooling, low coverage, or siloed practices.
- Use brief, high-impact bullet points appropriate for leadership-level review.

ii. **Identify Key Improvement Opportunities:** This section translates findings into action-oriented strategic recommendations.

3.1.1.D
Cont.
(2/2)

- Define the (e.g., 2-4) highest-value opportunities for improvement.
- Ensure these align with major maturity gaps (e.g., introducing ownership, adopting a tool, formalizing change control).
- Frame opportunities in language suited for executive endorsement and roadmap alignment.

iii. **Validate with Key Stakeholders:** Before finalization, the summary slide must be reviewed by the Data Architecture and Analytics Section Head and Data Strategy Expert.

- Circulate the draft slide for review and feedback.
- Confirm that insights and opportunities are clearly and accurately captured.
- Refine language and formatting to ensure clarity, precision, and alignment with the rest of the Data Management Current Maturity Assessment Framework reporting pack.



Key Message / Information

Use concise, action-oriented phrasing; each bullet point should communicate a real insight or decision driver. Avoid vague recommendations and tie each suggestion to a specific weakness and pathway to resolution.

3.1.1.E

Finalize and Share the Maturity Assessment with DGO: If the DSII maturity assessment was refreshed, then the Entity must consolidate the findings and formally share the updated assessment (as part of the broader data management maturity assessment) with the DGO for alignment.

i. **Consolidate DSII Final Materials for Submission:** The Data Strategy Expert prepares the formal assessment package for DGO review.

- DSII domain level maturity scores
- DSII maturity heatmap
- DSII assessment insights and recommendations

ii. **Submit Assessment Package to the DGO:** Data Architecture and Analytics Section Head oversees submission and initiates engagement with the DGO.

- Send the materials to the official DGO point-of-contact through the designated submission channel.
- Request a formal review and optionally ask for advisory feedback or validation of scoring.

iii. **Incorporate DGO Feedback and Finalize Record:** Once the DGO has reviewed the submission, incorporate any clarifications or adjustments required.

- Address DGO comments or requested edits in the assessment summary slide or supporting documents.
- Finalize all materials and archive the submission internally.
- Ensure the validated version is reflected in the Entity's central data governance records.

RACI Matrix – Data Sharing, Integration, and Interoperability Assessment

Indicative

Sr No.	Activity	DGO	Data Management and Security Director	Data Architecture and Analytics Section Head	Data Strategy Expert	Data Governance Specialist	Data Architect	Data Owner
3.1.1.A	Retrieve the Latest Data Sharing, Integration, and Interoperability Maturity Assessment		A	I	R	C	C	I
3.1.1.B	Refresh the Data Sharing, Integration, and Interoperability Maturity Assessment (If Required)		A	C	R	C	R	C
3.1.1.C	Analyze the Maturity Assessment Results		A	C	R	C	R	C
3.1.1.D	Document Assessment Insights and Recommendations		A	C	C		R	
3.1.1.E	Finalize and Share the Maturity Assessment with DGO	I/C	A	R	R	C	C	

RACI Matrix Legend: **R**: Responsible **A**: Accountable **C**: Consulted **I**: Informed

Based on this Activity, the Entity can



Refresh the Data Management Maturity Assessment



Analyze the Maturity Assessment Results

3.1.2 Capture Business and Technical Requirements

This section defines the approach for capturing both business and technical requirements for data sharing, integration, and interoperability, through engagement with relevant stakeholders.

Process – Capture Business and Technical Requirements

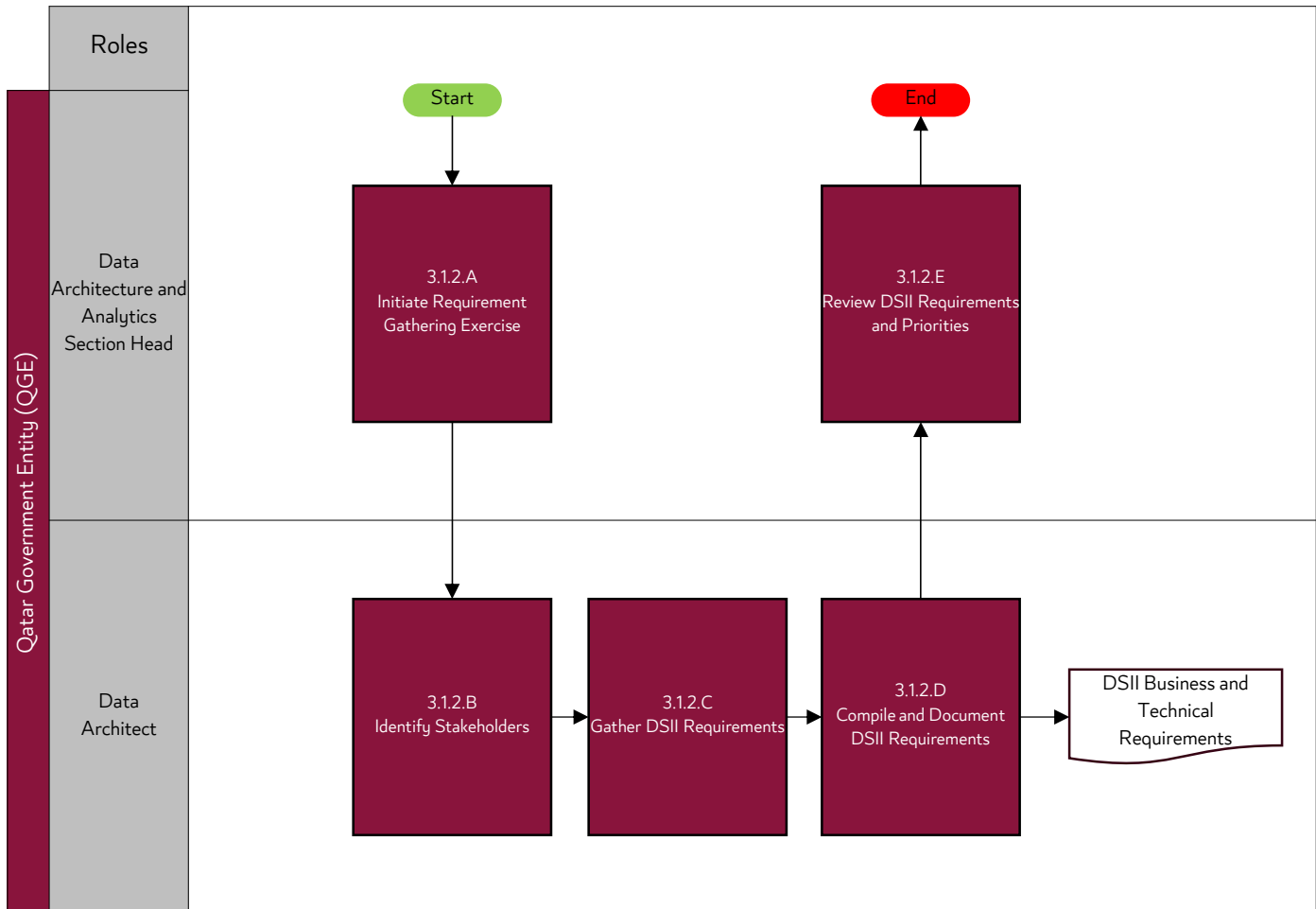


Figure 4: Process Map for Capturing Business and Technical Requirements

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

3.1.2.A

Initiate Requirement Gathering Exercise: The Data Architecture and Analytics Section Head initiates the Data Sharing, Integration & Interoperability requirement gathering exercise, defining its scope, objectives, and expected outcomes. The Data Architect is assigned to coordinate the activity, ensuring alignment with the national data sharing, integration, and interoperability standards. A high-level plan is developed to guide the process, ensuring structured and efficient requirement collection.



Key Message / Information

Clearly defined objectives reduce ambiguities and ensures all stakeholders are aligned on the purpose and outcomes of the requirement-gathering process.

3.1.2.B

Identify Key Stakeholders: The Data Architect identifies and engages relevant stakeholders to ensure comprehensive input into the Data Sharing, Integration, and Interoperability requirements. These stakeholders include, but are not limited to:

- **Data Owners:** Define the strategic value of shared datasets and validate their alignment with operational, legal, and governance requirements. Provide insight into ownership, classification, and accountability structures.
- **Data Stewards (Business & IT):** Ensure consistency, accuracy, and governance of data elements across systems. Contribute to metadata definitions, data validation processes, and data quality assurance for shared and integrated datasets.
- **System Owners (Source & Target Systems):** Provide details on system capabilities, integration readiness, performance limitations, and system dependencies related to data movement and exchange.
- **Data Compliance Specialists:** Address classification levels, legal basis for sharing, retention policies, and data security measures. Ensure that all practices comply with national privacy regulations and internal policies.
- **Data Strategy Experts:** Ensure alignment of requirements with the Entity's data strategy, national open data goals, and digital transformation objectives. Identify strategic priorities and high-value use cases.
- **Business Data Analysts:** Contribute reporting and analytics use cases that depend on shared, integrated, or interoperable datasets. Help define data granularity, update frequency, and required data formats.
- **Data Governance Specialist:** Define the governance requirements, policies, and accountability mechanisms that must guide data sharing, integration, and interoperability.

3.1.2.C
Cont.
(1/2)

Gather Data Sharing, Integration, and Interoperability Requirements: The Data Architect facilitates workshops and meetings with identified stakeholders to collect detailed business and technical requirements for Data Sharing, Integration, and Interoperability. These inputs will be captured using the dedicated requirement templates and will guide design, planning, and implementation activities.

i. **Workshop and Meeting Preparation:**

- Develop a tailored agenda based on the three requirement types: Data Sharing, Data Integration, and Data Interoperability.
- Distribute preparatory material in advance, including a summary of use cases, existing documentation, and blank templates to ensure participants are prepared.
- Assign specific focus areas to stakeholder groups to avoid duplication and promote in-depth coverage of topics.

3.1.2.C
Cont.
(2/2)

ii. Tailor Questions to Stakeholders:

- **Data Owners:** What datasets are suitable for sharing? What is their business value? What compliance and sensitivity concerns exist?
- **Data Stewards (Business & IT):** What data quality and metadata governance practices need to be applied to shared or integrated datasets?
- **System Owners (Source & Target Systems):** What are the technical constraints or performance considerations for system-to-system integration? Are the systems API-ready or batch-capable?
- **Data Governance Specialist:** What governance structures, policies, and approval workflows must be followed for data sharing and integration?
- **Data Compliance Specialists:** What legal, classification, or retention considerations must be addressed for shared or exchanged data?
- **IT Teams:** What access controls, encryption, authentication, and logging are in place or required for secure interoperability?
- **Business Data Analysts:** What data is needed for analytics or reporting? What is the expected refresh rate, volume, or format?

iii. **Capture Input on Key Topics:** To build a comprehensive understanding of data sharing, integration, and interoperability requirements, stakeholders should provide input on:

- **Data Sharing Requirements:** Identify datasets, attributes, formats, classifications, volumes, update frequencies, retention policies, exchange methods (e.g., GDX, SFTP, Database-to-database integration), and governance expectations.
- **Data Integration Requirements:** Define source and target systems, ETL/ELT processes, transformation rules, scheduling, logging, and monitoring. Capture requirements for data flow frequency, lineage, and validation checkpoints.
- **Data Interoperability Requirements:** Define API protocols (REST/SOAP), interface endpoints, authentication mechanisms, expected volumes, trigger types (event, scheduled), failover handling, and documentation needs.



Key Message / Information

Data sharing, integration, and interoperability requirements evolve over time as organizational goals shift, new systems are introduced, and regulatory or strategic priorities change. To stay aligned, entities must conduct regular reviews with key stakeholders to identify newly required datasets, updated integration points, and changes in interoperability mechanisms. These recurring check-ins help ensure that data exchange remains secure, scalable, and aligned with governance frameworks, while enabling seamless collaboration and informed decision-making across entities.

3.1.2.D
(1/3)

Compile and Document DSII Requirements: After identifying stakeholders and gathering requirements for Data Sharing, Integration, and Interoperability, the next step is to compile and document these requirements systematically. This ensures that all collected input is organized, structured, and readily available for planning, prioritization, and implementation. Entities should use the Data Sharing, Integration & Interoperability Requirements Template as the standard tool for documenting these requirements.

i. Review Collected Input:

- Consolidate all gathered information from workshops, meetings, and discussions.
- Ensure each requirement is accurately categorized by requirement category (data sharing, data integration, data interoperability)
- Cross-check inputs to identify duplicates or inconsistencies that need clarification.

ii. Populate Data Sharing Requirements Template Sheet

 Asset Guidance

The DSII Requirements Template includes a **Data Sharing Requirements Template Sheet**, which the Entity can use to detail specific data sharing requirements.

Illustrative

Data Sharing Requirements									
The following table can be used to document data sharing requirements.									
Field	Description								
Requirement ID	Unique identifier for the requirement (e.g., DS-001)								
Requesting Entity	Government entity initiating the requirement								
Providing Entity	Government entity providing the data								
Use Case / Objective	Brief description of the purpose of the data exchange								
Priority Level	Urgency of the requirement (High / Medium / Low)								
Status	Current status (Draft / Approved / In Progress / Completed)								
Data Subject / Domain	Thematic area of the data (e.g., Health, Education)								
Data Elements / Fields	List of data fields required								
Data Volume	Estimated volume or frequency of data								
Sensitivity Level	Classification of the data (Public / Confidential, etc.)								
Exchange Method	Method of transfer (SFTP, DB Link, GDX)								
Data Format	Format of the data (CSV, JSON, XML, etc.)								
Frequency	Frequency of exchange (Daily, Weekly, etc.)								
Retention Policy	How long the data should be retained								
Security Measures	Encryption, access control, and related safeguards								
Data Owner	Entity accountable for the data								
Technical Focal Point	Primary technical contact								
Approval Status	Approval status of the requirement								
Review Date	Date of last review								
Notes / Comments	Additional information								

Requirement ID	Requesting Entity	Providing Entity	Use Case / Objective	Priority Level	Status	Data Subject / Domain	Data Elements / Fields	Data Volume	Sensitivity Level

Exchange Method	Data Format	Frequency	Retention Policy	Security Measures	Data Owner	Technical Focal Point	Approval Status	Review Date	Notes / Comments

3.1.2.D
Cont.
(2/3)

iii. Populate Data Integration Requirements Template Sheet

 Asset Guidance

The **DSII Requirements Template** includes a **Data Integration Requirements Template Sheet**, which the Entity can use to detail specific data integration requirements.

Illustrative

 Data Integration Requirements										
The following table can be used to document data integration requirements.										
Field	Description									
Requirement ID	Unique identifier for the requirement (e.g., DI-001)									
Requesting Entity	Government entity initiating the requirement									
Providing Entity	Government entity providing the data									
Use Case / Objective	Purpose of integrating data sources									
Priority Level	Urgency of the requirement									
Status	Current status of the requirement									
Data Subject / Domain	Thematic area of the data									
Data Elements / Fields	List of data elements required									
Data Volume	Expected data volume or record count									
Sensitivity Level	Data classification									
Source Systems	Origin systems for the data									
Target System	System where the data will be integrated									
ETL Process Description	Overview of Extract, Transform, Load process									
Transformation Rules	Mapping and cleansing rules									
Schedule	Frequency or timing of integration									
Monitoring / Logs	Logging and monitoring requirements									
Data Owner	Owner of the data asset									
Technical Focal Point	Technical lead or contact									
Approval Status	Approval state of the requirement									
Review Date	Last review date									
Notes / Comments	Other relevant information									

Requirement ID	Requesting Entity	Providing Entity	Use Case / Objective	Priority Level	Status	Data Subject / Domain	Data Elements / Fields	Data Volume	Sensitivity Level	Source Systems

Target System	ETL Process Description	Transformation Rules	Schedule	Monitoring / Logs	Data Owner	Technical Focal Point	Approval Status	Review Date	Notes / Comments

iv. Populate Data Interoperability Requirements Template Sheet

 Asset Guidance

The **DSII Requirements Template** includes a **Data Interoperability Requirements Template Sheet**, which the Entity can use to detail specific data interoperability requirements.

Illustrative

 Data Interoperability Requirements	
The following table can be used to document data interoperability requirements.	

Field	Description
Requirement ID	Unique identifier for the requirement (e.g., DO-001)
Requesting Entity	Entity initiating the requirement
Providing Entity	Entity providing the service or API
Use Case / Objective	Goal of the interoperability interaction
Priority Level	Requirement urgency level
Status	Status of the requirement
Data Subject / Domain	Domain of the data involved
Data Elements / Fields	Fields exposed or consumed
Data Volume	Expected request volume or data size
Sensitivity Level	Data classification
Interface Protocol	Type of API or message service (REST, SOAP, etc.)
Endpoint URL	URL of the interface
Authentication Mechanism	Method of access control
Data Format	Format of data exchanged (JSON, XML, etc.)
Trigger Type	Trigger mechanism (event, on-demand, scheduled)
Response Expectations	Expected performance and error handling
Retry / Failover Logic	What happens when failures occur
API Documentation Link	URL or location of API spec
Data Owner	Owner of the interoperable data
Technical Focal Point	Key technical contact
Approval Status	Requirement approval status
Review Date	Review or revision date
Notes / Comments	Any additional notes

Requirement ID	Requesting Entity	Providing Entity	Use Case / Objective	Priority Level	Status	Data Subject / Domain	Data Elements / Fields	Data Volume	Sensitivity Level	Interface Protocol	Endpoint URL

Authentication Mechanism	Data Format	Trigger Type	Response Expectations	Retry / Failover Logic	API Documentation	Data Owner	Technical Focal Point	Approval Status	Review Date	Notes / Comments

v. Ensure Completeness and Clarity:

- Verify that all fields in the DSII Requirements Template are completed for each requirement identified across the 3 sheets.
- Ensure that requirements are written in clear, unambiguous language to prevent misinterpretation.
- Seek clarification from stakeholders if any information is incomplete or unclear.

vi. Validate Documented Requirements:

- Share the consolidated DSII Requirements Template with the consulted stakeholders for review and validation.
- Incorporate feedback to refine and finalize the documented requirements.

3.1.2.E

Review DSII Requirements and Priorities: The Data Management and Governance Section Head reviews the consolidated and prioritized DSII requirements to ensure alignment with the Entity's data strategy, regulatory obligations, and business objectives.

RACI Matrix – Capture Business and Technical Requirements

Indicative

Sr No.	Activity	Data Management and Security Director	Data Architecture and Analytics Section Head	Data Architect	Data Governance Specialist	Business Data Analyst	Data Compliance Specialist	Data Strategy Expert	Data Stewards	Data Owners
3.1.2.A	Initiate Requirement Gathering Exercise	A	R	I						
3.1.2.B	Identify Stakeholders		A	R					C	
3.1.2.C	Gather DSII Requirements		A	R	C	C	C	C	C	C
3.1.2.D	Compile and Document DSII Requirements		A/C	R					C	C
3.1.2.E	Review DSII Requirements and Priorities	A	R							

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Identify Data Sharing, Integration, and Interoperability Requirements

3.1.3 Data Sources Inventory, Lineage, and Integration Analysis

This section guides the Entity in analyzing the current state of its data landscape to support data sharing, integration, and interoperability efforts. It builds upon metadata and architectural documentation developed in previous domains to identify all relevant data sources, map dataset lineage, and highlight integration gaps. These insights help the Entity assess alignment between business needs (as defined in 3.1.1) and the underlying technical infrastructure.



Key Message / Information

A prerequisite for this activity is that the Entity must first complete the related activities in the Data Catalog & Metadata Management domain (to develop and populate the dataset and attribute inventories) and the Data Architecture & Modeling domain (to assess and document the baseline / target architecture, analytical models, data lineage, and physical data model diagrams). These foundational activities provide the critical metadata and documentation needed to perform a meaningful and comprehensive DSII landscape analysis.

3.1.3.A

Leverage the Data Catalog to Identify Source Systems and Datasets: The first step in understanding the current-state technical landscape is to identify all source systems and their respective datasets that are relevant to the data sharing, integration, and interoperability requirements gathered in Activity 3.1.2.

- i. **Leverage the Entity's Data Catalog:** Use the Dataset Inventory and Dataset Attribute Inventory templates (defined in the Data Catalog & Metadata Management domain) to extract information about relevant datasets and attributes from across all systems.
- ii. **Filter for Alignment:** Identify only those datasets and attributes that support or correspond to the DSII requirements captured in Activity 3.1.2. This includes (but is not limited to) datasets marked for data sharing, datasets that act as source or target systems for integration, and attributes required for real-time, near real-time or scheduled integration and interoperability.
- iii. **Visualize via Physical Data Models:** For the systems identified above, develop physical data model diagrams (if they don't exist) to enhance visibility into data structures, relationships, and integration dependencies.



Key Message / Information

By leveraging existing metadata in the Entity's catalog, the DSII analysis remains efficient and consistent. Physical data model diagrams further enable clarity, traceability, and collaboration between business and technical teams.

3.1.3.B (1/2)

Analyze the Current Architecture and Lineage: Once the relevant datasets are identified, the Entity must analyze how they are structured and connected—whether within a normalized model or a dimensional warehouse. This involves leveraging several documentation assets developed under the Data Architecture & Modeling domain.

3.1.3.B
Cont.
(2/2)

- i. **Leverage Baseline Dataset Documentation (Non-Dimensional Models):** Use the following templates developed in Activity 2.3 (Baseline Data Architecture Assessment) within the Data Architecture & Modeling domain, to analyze existing datasets and relationships that do not follow a dimensional modeling approach:
 - **Dataset Inventory & Attribute Inventory:** Identify all key datasets and their attributes.
 - **Dataset Relationships Template:** Document logical relationships between datasets.
 - **Baseline Data Lineage Template:** Map data movement between source systems and databases.
- ii. **Leverage Warehouse-Based Documentation (Dimensional Star Models):** Use the documentation from Activity 3.3 (Data Model Metadata) in the Data Architecture & Modeling domain, to understand the structure and metadata of analytical models stored in the data warehouse:
 - **Fact and Dimension Table Inventories**
 - **Fact and Dimension Attribute Inventories**
 - **Fact-to-Dimension and Dimension-to-Dimension Relationship Templates**
- iii. **Leverage Target Data Lineage and Models:** Use the lineage and modeling outputs developed in Activity 3.2 (Analytical Data Model) in the Data Architecture & Modeling domain to complete the picture of how data flows through the Entity's architecture:
 - **Target Data Lineage Template:** Trace lineage across architecture layers (source → raw → bronze → silver → gold).
 - **Physical Data Model Diagram:** Visualize how data is structured in the warehouse and how it aligns with business requirements.

**Key Message / Information**

A complete picture of data lineage—across both non-dimensional and dimensional systems—supports informed planning and identifies architecture misalignments impacting DSII implementation.

3.1.3.C
(1/2)

Document Integration and Interoperability Gaps Based on Requirements: After analyzing the source systems, datasets, attributes, non-dimensional and dimensional models, and data lineage, the Entity must identify and document any gaps that prevent full alignment with the DSII requirements defined in 3.1.1. This includes assessing each requirement against the current data architecture, physical data models, metadata repositories, and system integration landscape to determine whether the required capabilities exist, are partially implemented, or are entirely absent.

This gap assessment enables the Entity to surface technical limitations, system constraints, and missing integration mechanisms that could hinder effective data sharing and interoperability—whether within the Entity or across external entities. The outputs of this activity will inform future integration planning, system modernization, and alignment with national data standards.

- i. **Compare Requirements Against the Current-State Landscape:** Assess each DSII requirement defined in 3.1.1 against the documentation gathered in 3.1.2.A and 3.1.2.B. Identify where the existing systems, data models, or integration points fail to support the required capabilities.

3.1.3.C
Cont.
(2/2)

- ii. **Identify and Describe Gaps:** For each gap, clearly define the misalignment or missing element—for example, missing datasets or attributes, unsupported integration protocols, absence of real-time data exchange mechanisms, limited access controls, or undocumented data lineage. Ensure the description highlights the impact on data movement, sharing, or interoperability.
- iii. **Document and Track Gaps in a Structured Format:** Use the Data Integration and Interoperability Gap Analysis template to systematically capture and manage each identified gap.

Asset Guidance

The **Data Integration & Interoperability Gap Assessment** template can be leveraged to document the identified gaps.

Illustrative

 Data Integration and Interoperability Gap Analysis					
The following table can be used to capture data integration and interoperability gaps.					
Field	Description				
Gap ID	Unique identifier for the gap entry.				
Requirement ID	Link to the relevant Data Sharing, Integration, or Interoperability requirement.				
Gap Type	Type of gap identified (Integration / Interoperability / Both).				
Gap Description	A concise explanation of the gap, such as missing capabilities, tools, or standard mismatches.				
Impacted System(s)	System(s) or platforms affected by the gap.				
Severity	Level of impact (High / Medium / Low).				
Root Cause (if known)	Underlying reason for the gap.				
Suggested Remediation	Proposed action(s) to resolve the gap.				
Owner/Lead	Person or team responsible for addressing the gap.				
Status	Current status (Identified / In Progress / Resolved / Deferred).				
Target Resolution Date	Proposed or committed date to resolve the gap.				
Notes/Comments	Additional context or decisions made during review.				

Gap ID	Requirement ID	Gap Type	Gap Description	Impacted System(s)	Severity

Root Cause (if known)	Suggested Remediation	Owner/Lead	Status	Target Resolution Date	Notes/Comments

- iv. **Enable Prioritization and Future Monitoring:** Once gaps are documented in the Data Integration and Interoperability Gap Analysis template, the Entity must leverage this structured record to support ongoing remediation planning and progress tracking. The centralized log allows the Entity to:
- **Prioritize gaps** based on severity, system criticality, and strategic relevance.
 - **Track resolution progress** over time using status updates, target resolution dates, and owner assignments captured in the template.
 - **Inform integration and interoperability planning** in subsequent activities by ensuring that unresolved or high-impact gaps are addressed in roadmap and system enhancement efforts.

By consolidating all gaps in a governed, structured format, the Entity ensures long-term visibility, accountability, and the ability to continuously align DSII capabilities with evolving operational, regulatory, and strategic requirements.

RACI Matrix – Data Sources Inventory, Lineage, and Integration Analysis

Indicative

Sr No.	Activity	Data Management and Security Director	Data Architecture and Analytics Section Head	Data Steward	Data Governance Specialist	Metadata Specialist	Data Architect
3.1.3.A	Leverage the Data Catalog to Identify Source Systems and Datasets		A	C	C	C	R
3.1.3.B	Analyze the Current Architecture and Lineage		A		C		R
3.1.3.C	Document Integration and Interoperability Gaps Based on Requirements	I	A	C	C		R

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Identify Data Integration & Interoperability Gaps

3.2 Data Sharing & Integration Plan

Based on the data-sharing, integration and interoperability requirements identified in the previous activity, a Data Sharing, Integration and Interoperability Plan should be developed and aligned with the Entity's data strategy to guide the implementation of data-sharing and integration initiatives across the Entity. The plan should outline key activities and milestones, addressing both quick wins and longer-term strategic objectives. Additionally, the plan will designate initiative owners and key stakeholders, ensuring accountability and collaborative support throughout the implementation process. It will also highlight interdependencies with other projects, assumptions that underpin the plan, and potential risks to be mitigated. A detailed implementation timeline will be developed, along with a structured cost breakdown to support resource allocation and budgeting.

Process – Data Sharing & Integration Plan

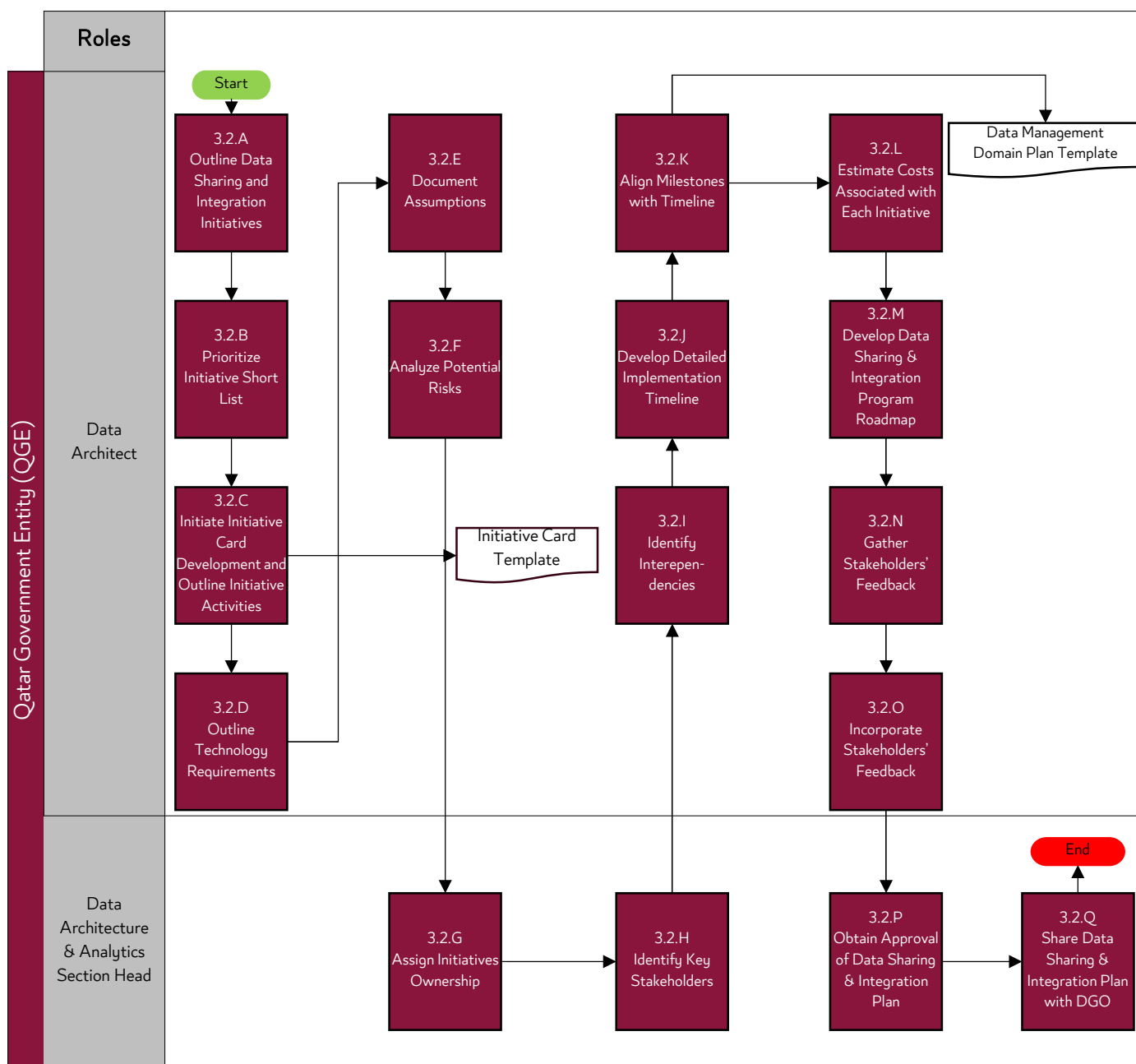


Figure 5: Data Sharing & Integration Plan Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

3.2.A

Outline Data Sharing and Integration Initiatives: Identify and document a comprehensive list of data-sharing, integration and interoperability initiatives, covering both short-term and long-term objectives. Initiatives may include efforts such as defining data-sharing agreements, establishing integration workflows, implementing interoperability frameworks, and configuring API-based data exchanges, as well as larger-scale projects like migrating peer-to-peer data sharing to an internal middleware platform and automating data synchronization across systems. Ensure these initiatives align with the Entity's broader data strategy, supporting effective resource allocation and addressing key integration and interoperability needs, and address all integration and interoperability gaps, and satisfy the previously defined DSII requirements.

3.2.B

Prioritize Initiative Short List: Leverage the long list of data-sharing and integration initiatives to identify and prioritize a short list based on impact and feasibility. Focus on high-impact areas where improved data sharing and integration will most effectively enhance decision-making, operational efficiency, and interoperability. Ensure alignment with the Entity's strategic objectives, prioritizing initiatives that address critical integration gaps. Additionally, identify quick wins—initiatives that can be implemented rapidly with minimal resources—to deliver immediate benefits and demonstrate the value of effective data-sharing and integration practices.

3.2.C

Initiate Initiative Card Development and Outline Initiative Activities: Develop initiative cards for each prioritized initiative outlined in the short list, capturing essential activities and steps required to guide implementation. For each initiative, outline the key activities by breaking them down into specific steps and sub-activities that need to be completed in sequence (where applicable). Include descriptions of each step to provide clear guidance on execution, along with any necessary details on tools, techniques, or methodologies that may be required.

Asset Guidance

An **Initiative Card Template** provides a structured format to document key information related to prioritized initiatives, such as initiative overview, key activities, sponsor, owner, stakeholders, timeline, key milestones, budget, technology requirements, dependencies, assumptions, risks, and milestones. The initiative cards provide a structured overview of proposed projects, allowing stakeholders to quickly understand each initiative's purpose, expected impact, and resource requirements.

Illustrative

OVERVIEW xxx	SPONSOR xxx OWNER xxx	STAKEHOLDERS xxx
KEY ACTIVITIES		TIMELINE xxx BUDGET (IN QAR) QAR xxx
1. Key Activity I. Sub-activity X • Detailed Steps II. Sub-activity Y • Detailed Steps 2. Key Activity I. Sub-activity X • Detailed Steps II. Sub-activity Y • Detailed Steps		EXPECTED BENEFITS • xxx KEY MILESTONES A. xxx B. xxx C. xxx TECHNOLOGY REQUIREMENTS • xxx

OVERVIEW xxx	SPONSOR xxx OWNER xxx	STAKEHOLDERS xxx																																																																																																																			
KEY ACTIVITIES	TIMELINE																																																																																																																				
<table border="1"><thead><tr><th>#</th><th>Milestones & Key Activities</th></tr></thead><tbody><tr><td>A.</td><td>Milestone</td></tr><tr><td>1.</td><td>Key Activity</td></tr><tr><td>B.</td><td>Milestone</td></tr><tr><td>2.</td><td>Key Activity</td></tr><tr><td>C.</td><td>Milestone</td></tr><tr><td>3.</td><td>Key Activity</td></tr></tbody></table>	#	Milestones & Key Activities	A.	Milestone	1.	Key Activity	B.	Milestone	2.	Key Activity	C.	Milestone	3.	Key Activity	<table border="1"><thead><tr><th>#</th><th>M1</th><th>M2</th><th>M3</th><th>M4</th><th>M5</th><th>M6</th><th>M7</th><th>M8</th><th>M9</th><th>M10</th><th>M11</th><th>M12</th></tr></thead><tbody><tr><td>A.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>B.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>C.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>												#	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	A.													1.													B.													2.													C.													3.												
#	Milestones & Key Activities																																																																																																																				
A.	Milestone																																																																																																																				
1.	Key Activity																																																																																																																				
B.	Milestone																																																																																																																				
2.	Key Activity																																																																																																																				
C.	Milestone																																																																																																																				
3.	Key Activity																																																																																																																				
#	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12																																																																																																									
A.																																																																																																																					
1.																																																																																																																					
B.																																																																																																																					
2.																																																																																																																					
C.																																																																																																																					
3.																																																																																																																					
DEPENDENCIES • xxx	ASSUMPTIONS & RISKS • xxx																																																																																																																				

3.2.D

Outline Technology Requirements: Identify and document the technology requirements needed to support each prioritized data-sharing and integration initiative. This includes outlining the required tools, software, and systems needed to ensure successful implementation and adoption across the Entity.

3.2.E

Document Assumptions: Record assumptions including but not limited to resource availability, stakeholder engagement, and data complexity to ensure transparency and guide decision-making.

3.2.F

Analyze Potential Risks: Identify and assess risks associated with data-sharing and integration initiatives to ensure proactive mitigation strategies. Examples include but are not limited to:

- Limited Standardization Support: Low stakeholder buy-in for data-sharing frameworks and integration protocols may hinder interoperability and consistency.
- Data Privacy Compliance: Failure to implement security controls and privacy safeguards early may lead to non-compliance risks, especially for sensitive data exchanges.
- Unclear Ownership and Governance: Lack of defined roles and responsibilities may weaken accountability, affecting data-sharing efficiency and oversight.
- Dependence on External Systems: Heavy reliance on third-party data sources may introduce availability, reliability, or quality issues, impacting integration workflows.
- Resource Constraints: Limited technical expertise or IT infrastructure may delay implementation, requiring additional investment in integration capabilities.

3.2.G

Assign Initiatives Ownership: The Data Architecture & Analytics Section Head will assume ownership of all the data sharing & integration initiatives. This designation ensures that all the initiatives have a dedicated leader who can oversee progress and resolve roadblocks that may arise.

3.2.H

Identify Key Stakeholders: Identify and engage key stakeholders essential to the success of data-sharing and integration initiatives, including data owners, IT teams, data architects, business users, and governance leads. Early involvement ensures alignment with strategic objectives, clarifies roles and responsibilities, and facilitates collaboration, enabling execution and adoption of integration efforts.

3.2.I

Identify Interdependencies: Analyze how data-sharing and integration initiatives may impact or be influenced by existing systems, projects, or planned upgrades to enhance resource coordination. This step involves:

- Reviewing how integration efforts intersect with ongoing IT and business workflows.
- Identifying resource dependencies, including shared teams, tools, or data assets.
- Ensuring cross-departmental coordination to prevent conflicts, redundancies, or delays.

3.2.J

Develop Detailed Implementation Timeline: Break down each activity in an initiative into actionable steps with start and end dates, ensuring the timeline is realistic and achievable. Each step should have a clear description of the required task, dependencies on other activities, and allocated resources. Ensure that the timeline accounts for potential delays or risks identified earlier, so adjustments can be made without derailing the project.

3.2.K

Align Milestones with Timeline: Set specific checkpoints or milestones throughout the implementation to assess progress. These milestones allow the evaluation of whether the initiative is proceeding as planned and provide opportunities for course corrections.

3.2.L

Estimate Costs Associated with Each Initiative: Estimate expenses related to tools, technology, personnel, and training required for data-sharing and integration initiatives. Break down costs for activities such as acquiring integration platforms, developing APIs, configuring middleware, and conducting staff training on data governance. This step ensures the budget is well-planned, realistic, and comprehensive, covering all critical aspects for successful implementation.

3.2.M

Develop Data Sharing & Integration Program Roadmap: Create a roadmap outlining timelines, phases, and key milestones for implementing prioritized data-sharing and integration initiatives. Sequence initiatives based on dependencies, resource availability, and strategic alignment. Define projected timelines for each initiative to enable stakeholders to monitor progress, coordinate efforts, and allocate resources effectively over time.

Asset Guidance

The **Data Management Domain Plan Template** helps the Entity to outline each identified initiative, including its sub-activities, owners, stakeholders, and activity timeframes.

Illustrative

[illegible][illegible]

3.2.N

Gather Stakeholders' Feedback: Present the draft plan to all relevant stakeholders, inviting input on its objectives, scope, proposed activities, and overall timeline. This step ensures that any potential issues, concerns, or overlooked areas are identified early, improving the plan's alignment with organizational needs and building stakeholder commitment.

3.2.O

Incorporate Stakeholders' Feedback: Incorporate constructive feedback from stakeholders to refine the plan, addressing identified concerns and ensuring it aligns with stakeholder expectations. This step fine-tunes the plan details and strengthens its practical feasibility by leveraging diverse perspectives.

3.2.P

Obtain Approval of Data Sharing & Integration Plan: After incorporating stakeholder feedback, present the finalized Data Sharing & Integration Plan to the Data Committee or relevant authority for formal approval. This step ensures alignment with organizational priorities and secures support for implementation. Once approved, the plan is formally adopted and communicated to all relevant stakeholders.

3.2.Q

Share Data Sharing & Integration Plan with DGO: Submit the finalized Data Sharing & Integration Plan to the National Data Governance Office (DGO) for review. The DGO will review the plan and provide recommendations, allowing the Entity to ensure their plan aligns with the broader national data program agenda and best practices.

RACI Matrix – Data Sharing & Integration Plan

Indicative

Sr No.	Activity	DGO	Data Management and Security Director	Data Architecture & Analytics Section Head	Data Governance Specialist	Data Architect	Data Stewards	Data Strategy Expert
3.2.A	Outline Data Sharing and Integration Initiatives		A	C	C	R	C	C
3.2.B	Prioritize Initiative Short List		A	C	C	R	C	C
3.2.C	Initiate Initiative Card Development and Outline Initiative Activities			A	C	R		C
3.2.D	Outline Technology Requirements			A	C	R	C	C
3.2.E	Document Assumptions			A	C	R	C	C
3.2.F	Analyze Potential Risks			A	C	R		C
3.2.G	Assign Initiatives Ownership		A	R				
3.2.H	Identify Key Stakeholders		A	R	C	C	C	
3.2.I	Identify Interdependencies			A	C	R		C
3.2.J	Develop Detailed Implementation Timeline			A	C	R		C
3.2.K	Align Milestones with Timeline			A	C	R		C
3.2.L	Estimate Costs Associated with Each Initiative			A	C	R	C	C
3.2.M	Develop Data Sharing & Integration Program Roadmap			A	C	R		C
3.2.N	Gather Stakeholders' Feedback			A	C	R		
3.2.O	Incorporate Stakeholders' Feedback			A		R		C
3.2.P	Obtain Approval of Data Sharing & Integration Plan		A	R				
3.2.Q	Share Data Sharing & Integration Plan with DGO	C/I	A	R				

RACI Matrix Legend: R: Responsible A: Accountable C: Consulted I: Informed

Based on this Activity, the Entity can

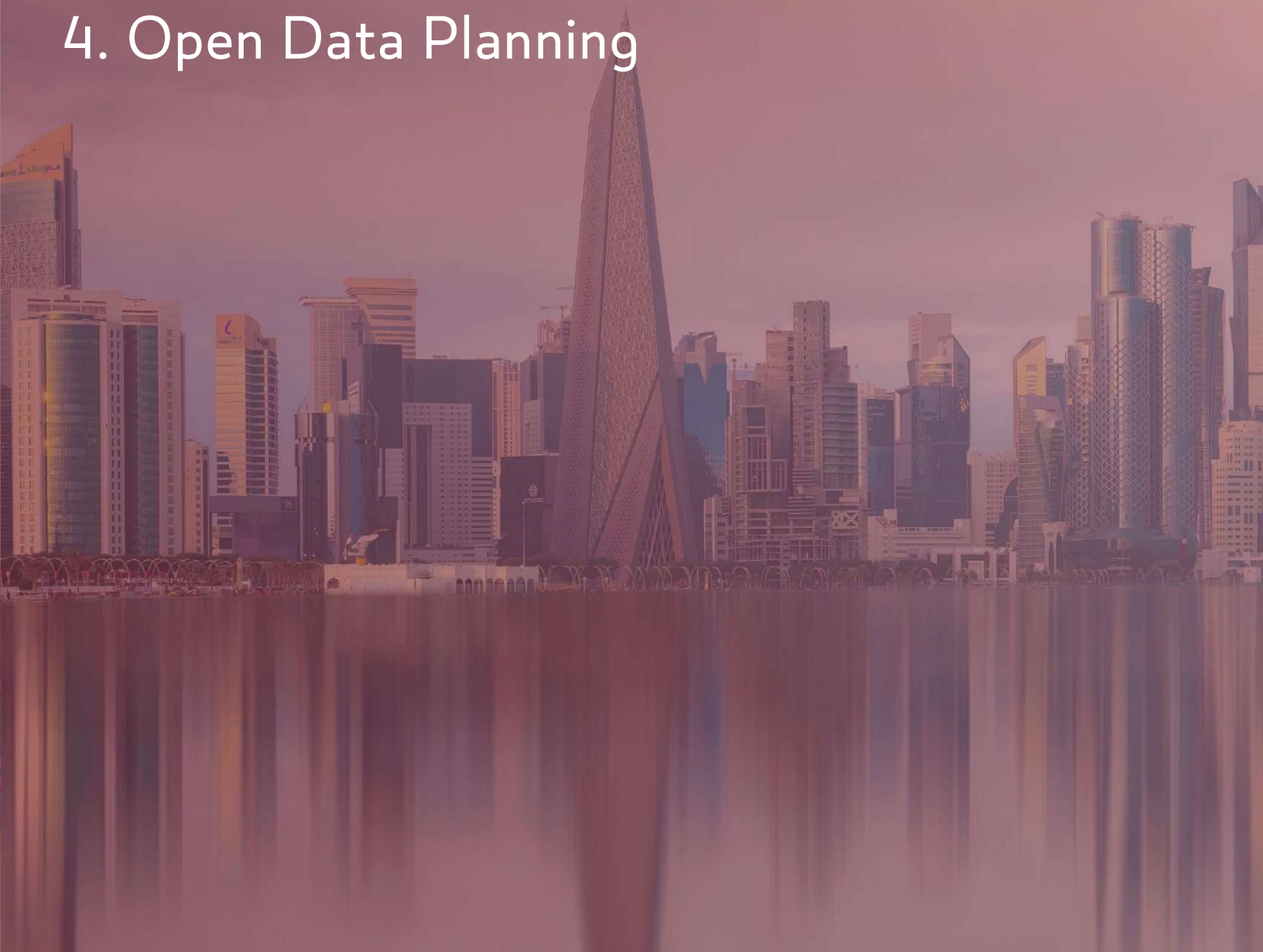


Outline Data Sharing & Integration Initiatives



Develop and Review Data Sharing & Integration Plan

4. Open Data Planning



4. Open Data Planning

What is Open Data Planning and why does the Entity need it?

Open Data Planning is a structured process that enables the Entity to assess the quality and compliance of its currently published open datasets. The process focuses on evaluating existing datasets, identifying those that require improvement, particularly those with Qatar Data Trust Index (QDTI) scores below 85, and planning targeted initiatives to uplift their score. It also involves gathering business and technical requirements for potential new open datasets as well as any other open data requirements. The process ensures that all published open data remains accurate, relevant, well-documented, and compliant with legal, privacy, and ethical standards for continued public use.

The goal of Open Data Planning is to promote transparency, innovation, and citizen engagement by providing high-value, reliable datasets in accessible formats. By planning effectively, the Entity can address inefficiencies, ensure data readiness, and establish a robust foundation for open data initiatives.

A well-defined Open Data Plan enhances transparency, accountability, and public engagement, ensuring reliable and accessible datasets.

The remaining sections of this chapter will detail the activities of the below process that will guide the Entity on executing Open Data Planning:



Guiding Principles for Open Data Planning

1. **Prioritize Existing Dataset Relevance:** Continuously evaluate published datasets to ensure they remain relevant, valuable, and aligned with current public needs and strategic priorities.
2. **Uplift Low-Performing Datasets:** Identify datasets with Qatar Data Trust Index (QDTI) scores below 85 and implement targeted improvement initiatives to enhance their quality and compliance.
3. **Ensure Metadata Accuracy and Completeness:** Regularly review and update metadata to ensure all published datasets meet national standards for documentation, discoverability, and usability.
4. **Monitor and Govern Open Data Lifecycle:** Establish processes for ongoing monitoring, review, and potential retirement of outdated or low-value datasets, ensuring that the open data portfolio remains trusted and impactful.

4.1 Open Data Assessment & Requirements

This activity will guide the Entity on the steps to document the business and technical requirements for future open datasets and perform an assessment on existing open datasets that the Entity has published. The assessment ensures that all published datasets are still relevant and meet the necessary quality, compliance, and accessibility standards.

Process – Open Data Assessment & Requirements

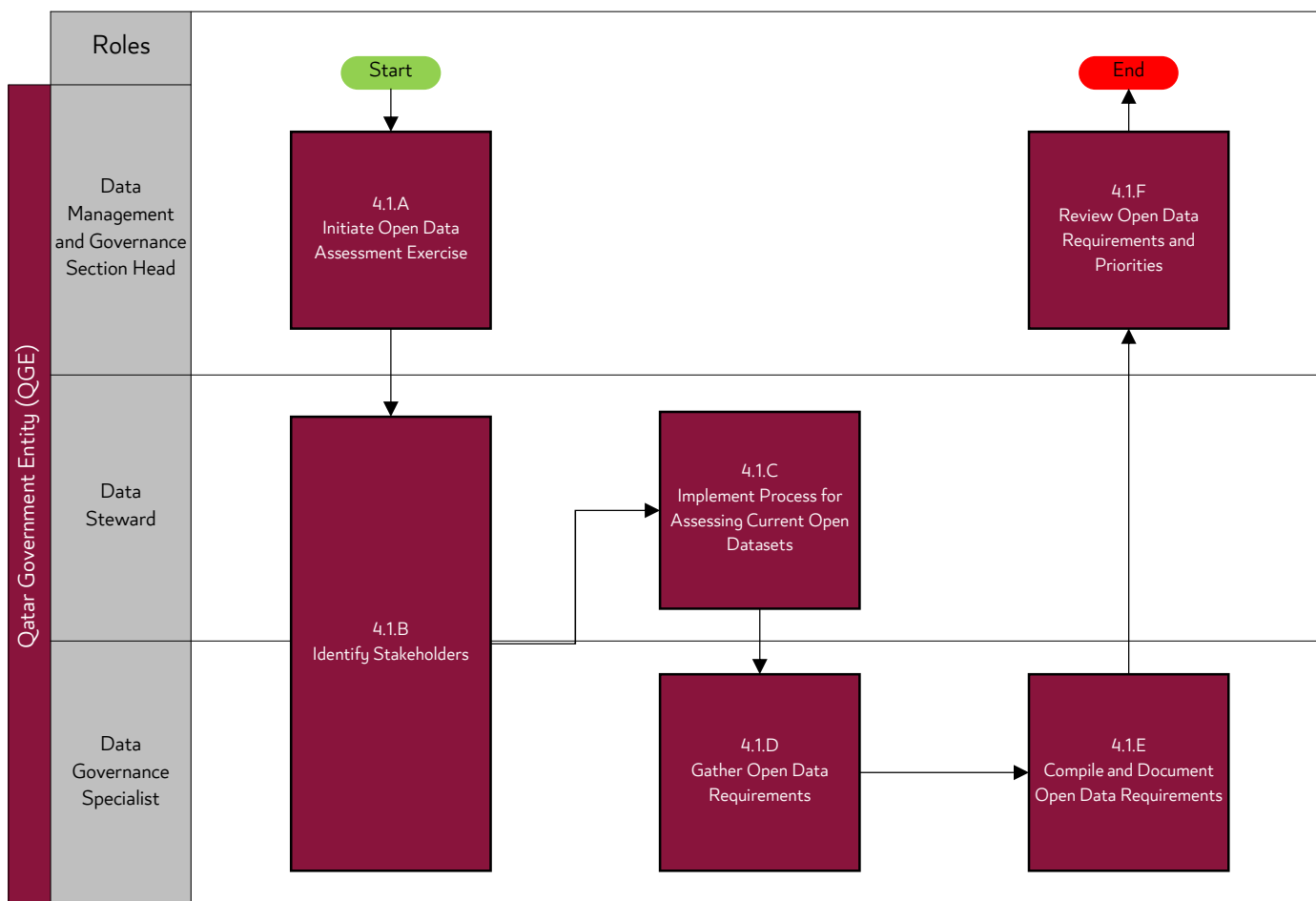


Figure 6: Process Map for Open Data Assessment & Requirements

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

4.1.A

Initiate Open Data Assessment Exercise: The Data Management and Governance Section Head initiates the open data assessment and requirements gathering exercise by defining its scope, objectives, and expected outcomes. The Section Head then assigns the Data Steward to coordinate the assessment, ensuring alignment with the National Open Data Policy and the Entity’s strategic objectives, while also overseeing dataset identification, compliance evaluation, and data quality evaluation.



Key Message / Information

Clearly defined objectives reduce ambiguities and ensure alignment across stakeholders. This step establishes a shared understanding of the purpose and outcomes of the assessment.

4.1.B

Identify Stakeholders: The Data Steward identifies and engages stakeholders who play a critical role in the open data lifecycle. This engagement ensures comprehensive input for identifying relevant datasets, assessing quality, documenting metadata, and capturing open data requirements. These stakeholders include, but are not limited to:

- **Data Owners:** Ensure accountability for datasets under their purview, providing insights into usage, relevance, and readiness for publication.
- **System Owners (Source Systems):** Provide technical expertise on dataset formats, data structures, and system dependencies for open data publication.
- **Metadata Specialists:** Define and maintain metadata standards, ensuring datasets are properly documented and searchable for usability.
- **Data Strategy Experts:** Align open data initiatives with the Entity's broader data strategy, ensuring public engagement and accessibility objectives are met.
- **Data Compliance Specialists:** Ensure compliance with legal, privacy, and ethical requirements, including anonymization of sensitive data and regulatory adherence.
- **Data Quality Specialists:** Conduct data profiling, quality assessments, and define remediation actions, ensuring datasets meet accuracy, completeness, consistency, uniqueness, timeliness, and validity standards before publication.
- **IT Team:** Evaluate technical aspects of the open data platform, including storage, access, and integration with existing systems.
- **Business Data Analysts:** Identify business needs and public use cases for open data publication, ensuring data availability supports decision-making.
- **Data Architects:** Define data models, system interoperability, and infrastructure alignment, ensuring datasets integrate effectively with open data platforms.

**Key Message / Information**

Including a diverse group of stakeholders ensures a holistic understanding of open data challenges and opportunities.

4.1.C
(1/5)

Implement Process for Assessing Current Open Datasets: The Entity shall adopt the following open data process to assess its current open datasets the Open Data Portal:

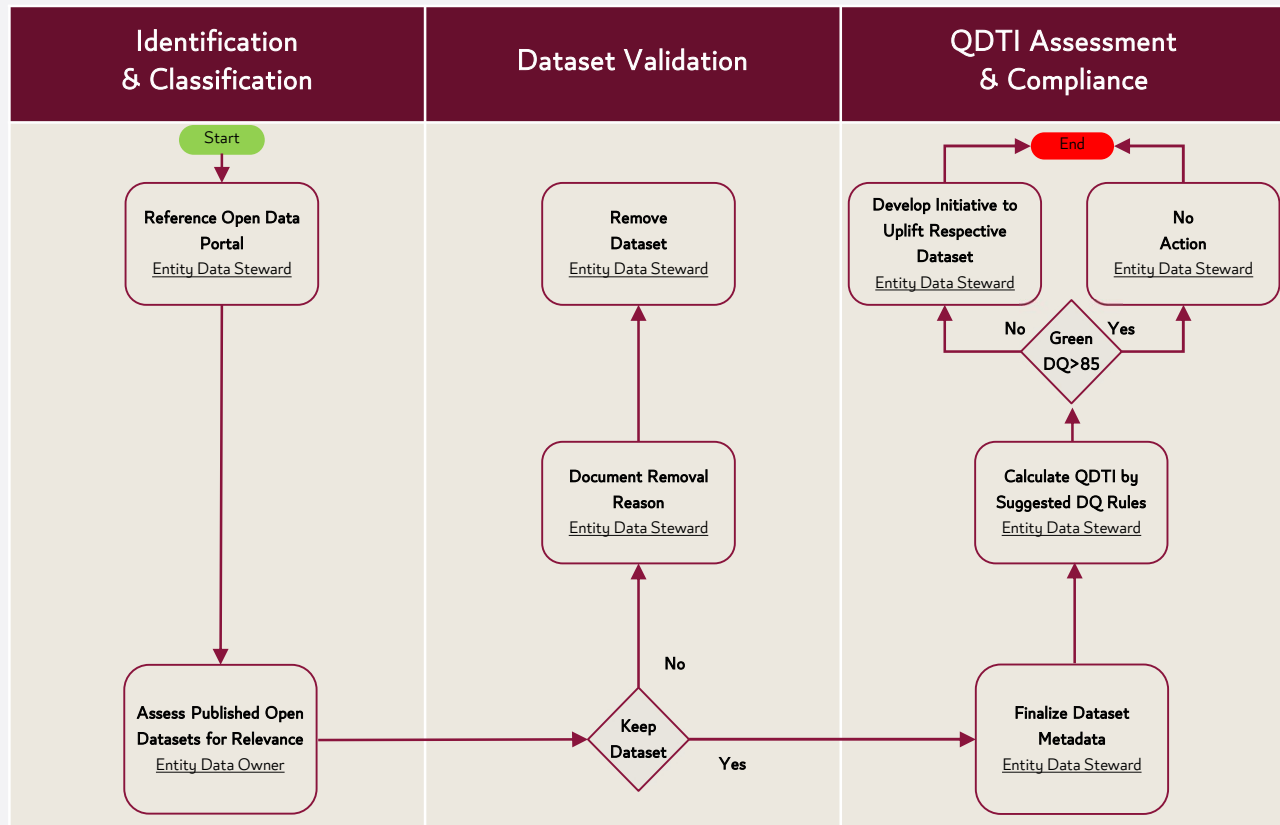


Figure 7: Current Open Data Process

Entity

- i. **Reference Qatar Open Data Portal:** The Entity Data Steward references the Qatar Open Data portal to identify any current open datasets that were already published by the Entity.
- ii. **Assess Published Open Datasets for Relevance:** The Entity Data Steward must assess the published open datasets to determine whether they remain relevant, accurate, and valuable for public use. This ensures that outdated or obsolete datasets are either updated or retired, preserving the quality and usefulness of the Entity's open data portfolio. The Entity should:
 - **Review Dataset Relevance:** Evaluate whether the dataset continues to serve a clear public interest, supports transparency, or contributes to innovation and research. Datasets that are no longer accessed, cited, or relevant to current priorities should be considered for removal.
 - **Check Dataset Timeliness:** Identify datasets that have not been updated in a significant amount of time (e.g., older than 3 years) or where the underlying source data is no longer maintained.
 - **Analyze Usage Metrics:** Review download statistics, search frequency, and user feedback to identify datasets with minimal engagement or perceived value.
 - **Consult Data Owners and Business Stakeholders:** Validate with data owners whether the dataset still reflects current business operations or has been replaced by other sources.

4.1.C
Cont.
(2/5)

- iii. **Finalize Dataset Metadata:** For datasets that will be kept/updated on the Qatar Open Data Portal, the Entity Data steward must identify any missing metadata and ensure that all required fields are completed in accordance with national data standards. This supports consistency, discoverability, and quality of published datasets and will be detailed further in Section 6.2.
- iv. **Calculate QDTI Using Suggested DQ Rules:** The Entity Data Steward calculates the QDTI score of the Open Dataset which consists of a Data Quality Score (80% weight) and a Data Compliance Score (20% weight).



Key Message / Information

If a dataset is selected for retirement, the Entity Data Steward must document the reason for retirement and notify NPC of the request, clearly stating why the dataset should be removed (e.g., obsolete, replaced, or can no longer maintained).

Components		Government Entities	National Indicators	Open Datasets	Data Products
 1. Data Quality Score (DQS)	Data Quality Governance	15%	Not applicable	Not applicable	Not applicable
	Data Quality Quantitative Assessment	50%	100%	80%	80%
 2. Data Compliance Score (DCS)	Data Strategy & Governance	10%	Not applicable	Not applicable	Not applicable
	Data Enablement	10%	Not applicable	Not applicable	Not applicable
	Data Value Harvesting	10%	Not applicable	20%	20%
	Data Protection & Privacy	5%	Not applicable	Not applicable	Not applicable

Figure 8: Open Data QDTI Score Breakdown

4.1.C
Cont.
(3/5)

- a. **Data Quality Score (DQS):** Open data quality is assessed through a specific set of data quality rules, which are aligned with the seven main dimensions of data quality and their sub-dimensions.

Main Dimension	Open Data Quality Checklist (illustrative)*	Evaluation method
1. Accuracy	1. Do the values in the key and reference fields follow the expected pattern?	Percentage of records that follow an expected structure or pattern: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	2. Do the numerical values fall within specific logical and statistical ranges?	Percentage of records that fall within expected logical or statistical ranges: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
2. Completeness	3. Do all fields contain non-empty data?	Percentage of fields containing data: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	4. Is all metadata available and complete?	Percentage of metadata that is fully filled out: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
3. Consistency	5. Are fields stored in a uniform and consistent format?	Percentage of records that adhere to a standardized format: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	6. Do the values match approved reference lists such as ISO Country Codes?	Percentage of records that match an approved reference data list: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
4. Uniqueness	7. Are the values in the key fields unique without duplication?	Percentage of records that contain a unique primary key: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
5. Timeliness	8. Does the data reflect the latest available values according to the specified update cycle?	Percentage of records that fall within the specified time frame: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
6. Validity	9. Does the data match the data type specified for each field (e.g., numbers, dates)?	Percentage of records that match the specified data type for each field: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	10. Does the data comply with business rules?	Percentage of records that comply with the specified rules: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
7. Accessibility	11. Are there multiple ways to access the data (APIs, SQL queries, downloading CSV files)?	Grade 3: Provides diverse access methods (e.g., APIs, CSV/Excel) Grade 2: Limited access methods (e.g., CSV/Excel) Grade 1: Access is restricted and complex (data not available for extraction)



Key Message / Information

The score is calculated by dividing the total of the achieved scores (grades) by the maximum possible total (33, as there are 11 checklist items, each with a maximum of 3 points). The quality checklist questions are illustrative and can be adjusted as needed, as long as the data quality rules remain aligned with the main dimensions.

4.1.C
Cont.
(4/5)

- b. **Data Compliance Score:** Open datasets compliance is assessed through a checklist aligned with the dimensions and sub-dimensions of the Data Sharing, Integration and Interoperability domain, which falls under the Data Value Realization component

Main dimension	Sub-dimension	Is the entity compliant?	
		Yes	no
1. Open Data Administration	1. Has a designated senior official been formally appointed within the Entity for overseeing the administration and implementation of the Open Data initiatives?		
	2. Has the Entity developed an inventory of all datasets eligible for open data publication (i.e.: Open Data Catalogue), including details about their sources, formats, and current usage?		
	3. Is the Open Data regularly updated according to a documented predefined, agreed upon frequency?		
	4. Has the Entity developed and documented a process for the regular review and identification of datasets for public release?		
2. Open Data Webpage & Plan	5. Does the Entity have a dedicated Open Data webpage that is updated regularly according to a documented predefined, agreed upon frequency?		
	6. Is the Entity's Open Data webpage linked to the National Open Data portal (if applicable)?		
	7. Has the Entity developed and published an Open Data plan on its official Open Data webpage?		
	8. Does the published plan include a "Terms of Use" statement? (terms of use for adaptation and distribution, and that explicitly allows public reuse of data at no fee)		
	9. Does the plan include specific datasets targeted for release along with a concrete roadmap/ schedule for each dataset?		
3. Data Privacy & Classification	10. Has the data that has been identified as "Public" been strictly anonymized and cleansed of any single or composite information referencing an individual residing in Qatar or outside Qatar, or a Company operating in Qatar or outside Qatar?		
4. Open Data Licensing	11. Has the Open Data been published under the Creative Commons Attribution 4.0 International License?		
	12. Is third-party data published on the Entity's Open Data webpage republished only when its original terms permit it and under the same license as the originating data (if applicable)? (e.g.: if an Entity publishes data taken from the World Bank, the Entity must use the same license the World Bank applies to its own data)		
5. Open Data Format & Metadata	13. Are all datasets made available in an open format that is platform-independent, machine-processable (e.g., CSV), and free for public reuse?		
	14. Are the datasets provided in their raw and as granular a form as possible?		
	15. Is metadata for each dataset created and published to enable effective internet search and retrieval by the public?		
6. Public Feedback/ Requests	16. Is there an active online forum on the Entity's Open Data webpage for the public to submit feedback and engage in discussions regarding Open Data?		
	17. Does the Entity's Open Data webpage provide a clearly visible, functional form or interface for submitting Information Requests online?		

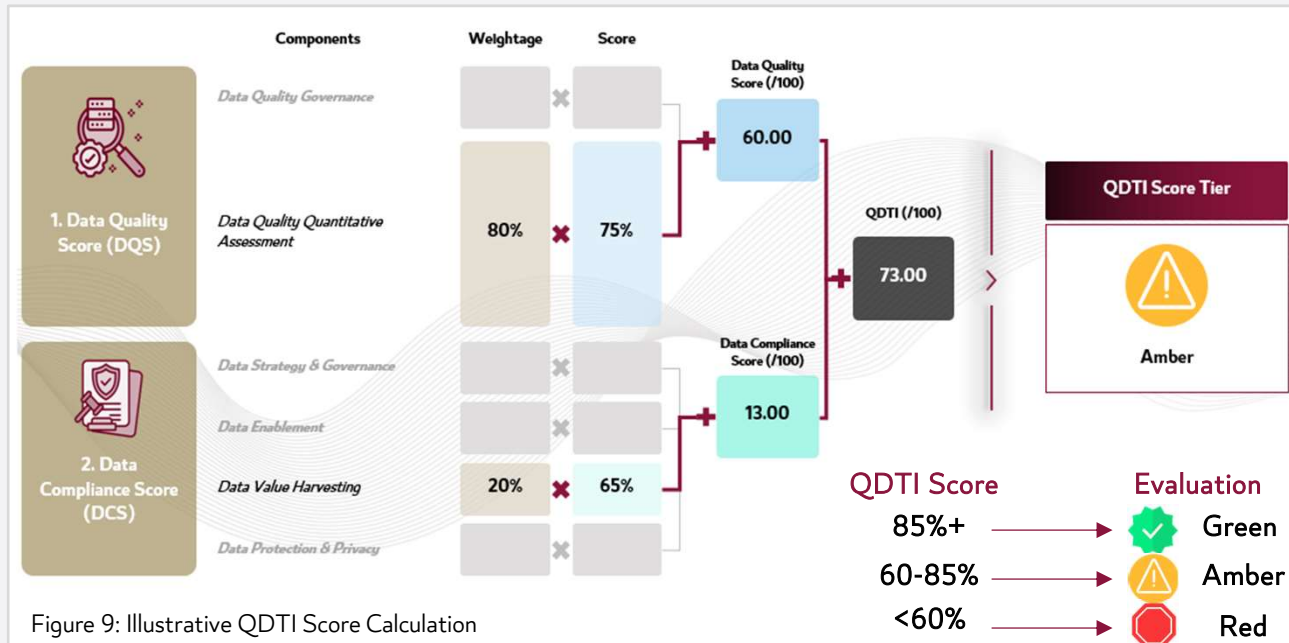


Key Message / Information

The score is calculated by dividing the number of questions the entity is compliant with by the total number of questions (17 in this case).

4.1.C
Cont.
(5/5)

- c. After conducting the data quality and data compliance assessments, the overall QDTI is calculated by combining the scores of each of these two assessments and using their respective weights. If a dataset's score is 85 or above, no action is required. However, if the score is below 85, the entity must develop an initiative to improve the respective dataset.



4.1.D
(1/2)

Gather Open Data Requirements: The Data Governance Specialist facilitates workshops and meetings with identified stakeholders to collect business and technical requirements for future open data publication. These discussions aim to:

- Identify current open data processes and gaps.
- Define requirements for dataset publication, accessibility, and usability.
- Address compliance, legal, and privacy considerations for open data initiatives.

i. **Workshop and Meeting Preparation:**

- Develop a detailed agenda covering discussion topics tailored to each stakeholder group.
- Share the agenda and preparatory materials in advance to ensure active participation. These should include:
 - An overview of the Entity's open data objectives
 - Existing datasets and relevant policies (e.g., National Open Data Policy)

ii. **Tailor Questions to Stakeholders:**

- **Data Owners:** Assess the relevance and value of datasets for public use. Identify datasets critical for transparency, public engagement, and innovation, and discuss update/maintenance processes to ensure accuracy.
- **System Owners (Source Systems):** Address technical challenges in dataset extraction and publication. Discuss potential integration issues, system dependencies, and export constraints that could affect data availability.

4.1.D
(2/2)

- **Metadata Specialists:** Ensure comprehensive metadata documentation to improve dataset searchability, usability, and discoverability. Define required metadata fields and tagging conventions for standardization.
 - **Data Compliance Specialists:** Ensure privacy, legal, and regulatory compliance by addressing data anonymization, and intellectual property considerations before public release.
 - **Business Data Analysts:** Focus on structuring open data to support external users such as researchers, developers, and policymakers. Identify datasets with high public demand and real-time applicability.
 - **Data Quality Specialists:** Assess dataset quality and readiness for publication. Identify common issues such as missing, outdated, or inconsistent data, and define validation and monitoring processes to enhance dataset reliability.
- iii. **Capture Input on Key Topics:** To build a comprehensive understanding of Open Data requirements, stakeholders should provide input on:
- **Data Accessibility & Availability:** Define how datasets will be made accessible to external users. Discuss requirements for public discoverability, availability on the national open data portal, and any limitations or dependencies that may affect dataset access. Input from Data Owners is essential.
 - **Metadata and Documentation:** Discuss required metadata fields, tagging conventions, and business descriptions in alignment with the National Data Standards. Input from Metadata Specialists and Data Stewards is required.
 - **Data Quality & Validation:** Discuss how the QDTI assessment will be conducted on potential open datasets. Input from Data Quality Specialists and Business Data Analysts is essential.
 - **Security & Compliance:** Address privacy and legal considerations to ensure datasets are safe for public release. Discuss anonymization, and any contractual or policy-based restrictions. Input from Data Compliance Specialists and Legal Representatives is needed.
 - **Data Format & Transformation:** Define the formats in which datasets should be published (e.g., CSV, JSON, XML) and any transformation requirements needed. Discuss how raw data may need to be reshaped for publication. Input from Data Architects, System Owners, and IT Teams is essential.
 - **Open Data Platform Integration:** Identify requirements for publishing datasets on the Qatar Open Data Portal. Discuss upload methods, API integration, and automation for scheduled updates. Input from System Owners, and Metadata Specialists is important.
 - **Governance:** Define roles, responsibilities, and workflows for reviewing, approving, and maintaining published datasets. Discuss accountability mechanisms, escalation procedures, and compliance tracking. Input from Data Stewards, and Data Owners is required.

4.1.E
(1/2)

Compile and Document Open Data Requirements: After identifying stakeholders and gathering requirements for future Open Datasets, the next step is to compile and document these requirements systematically. This ensures that all collected input is organized, structured, and readily available for planning, prioritization, and implementation. Entities should use the Open Data Requirements Template as the standard tool for documenting these requirements.

i. Review Collected Input:

- Consolidate all gathered information from workshops, meetings, and stakeholder discussions.
- Ensure each requirement is accurately categorized by type (e.g., business, technical).
- Cross-check inputs to identify duplicates or inconsistencies that need clarification.

ii. Populate the Open Data Requirements Template

- Use the Open Data Requirements Template to systematically document each requirement, ensuring clarity and completeness. The template should capture the following details:
 - **Requirement ID:** Assign a unique identifier for tracking each requirement.
 - **Requirement Description:** Provide a clear, detailed explanation of the requirement, and outline the key topic covered (e.g., Strategic Alignment, Legal and Privacy Compliance).

iii. Ensure Completeness and Clarity:

- Verify that all fields in the Open Data Requirements Template are completed for each requirement.
- Ensure that requirements are written in clear, and unambiguous language.
- Seek clarification from stakeholders if any information is incomplete or unclear.

iv. Validate Documented Requirements:

- Share the completed Open Data Requirements Template with key stakeholders, such as the Data Governance Specialist, Metadata Specialists, and Data Compliance Specialists, for review and validation.
- Incorporate feedback to refine and finalize the documented requirements.

4.1.E
(2/2)

Asset Guidance

The Open Data Requirements Template includes a Business and Technical Requirements Template Sheet, which the Entity can use to detail specific open data requirements.

Illustrative

Business and Technical Open Data Requirements Template	
The following table can be used to document the business and technical requirements from the relevant stakeholders related to the publication, accessibility, and use of open data.	

Field	Description
Requirement ID	A unique identifier for each requirement.
Requirement Description	A detailed description of the open data requirement.
Requirement Category	Specifies the category of the requirement. This helps in organizing requirements for better prioritization and implementation.
Stakeholder	The individual or group that provided the requirement.
Requirement Type	Identification of the requirement type is (Business or Technical)
Priority	The importance of the requirement (High, Medium, Low).
Business Impact	How the requirement will enhance the publication, accessibility, or use of open data.
Technical Impact	The effect of the requirement on technical systems or processes related to open data.
Dependency	Dependencies that must be considered to fulfill the requirement.
Requirement Owner	The name and role of the individual or team responsible for overseeing the requirement's implementation.
Date Collected	The date that the requirement was collected.

Requirement ID	Requirement Description	Requirement Category	Stakeholder	Requirement Type	Priority

Business Impact	Technical Impact	Dependency	Requirement Owner	Date Collected

4.1.F

Review Open Data Requirements and Priorities: The Data Management and Governance Section Head reviews the consolidated and prioritized open data requirements to ensure alignment with the Entity's data management strategy, regulatory obligations, and business objectives.

RACI Matrix – Open Data Assessment & Requirements

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	Data Governance Specialist	Data Compliance Specialist	Data Architect	Metadata Specialists	Data Quality Specialists	Data Owners	Data Steward
4.1.A	Initiate Open Data Assessment Exercise	A	R	I						
4.1.B	Identify Stakeholders		A	R						R
4.1.C	Implement Process for Assessing Current Open Datasets	I	A	C	C	C	C	C	C	R
4.1.D	Gather Open Data Requirements		A	R	C	C	C	C	C	C
4.1.E	Compile and Document Open Data Requirements		A/C	R						
4.1.F	Review Open Data Requirements and Priorities	A	R							

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Conduct Data Quality Assessment on Open Datasets



Capture Business and Technical Open Data Requirements

4.2 Open Data Plan

Based on the open data requirements identified in the previous activity, an Open Data Plan should be developed to guide the implementation of open data initiatives across the Entity. The plan should outline key activities and milestones, addressing both quick wins and longer-term strategic objectives. Additionally, the plan will designate initiative owners and key stakeholders, ensuring accountability and collaborative support throughout the implementation process. It will also highlight interdependencies with other projects, assumptions that underpin the plan, and potential risks to be mitigated. A detailed implementation timeline will be developed, along with a structured cost breakdown to support resource allocation and budgeting.

Process – Open Data Plan

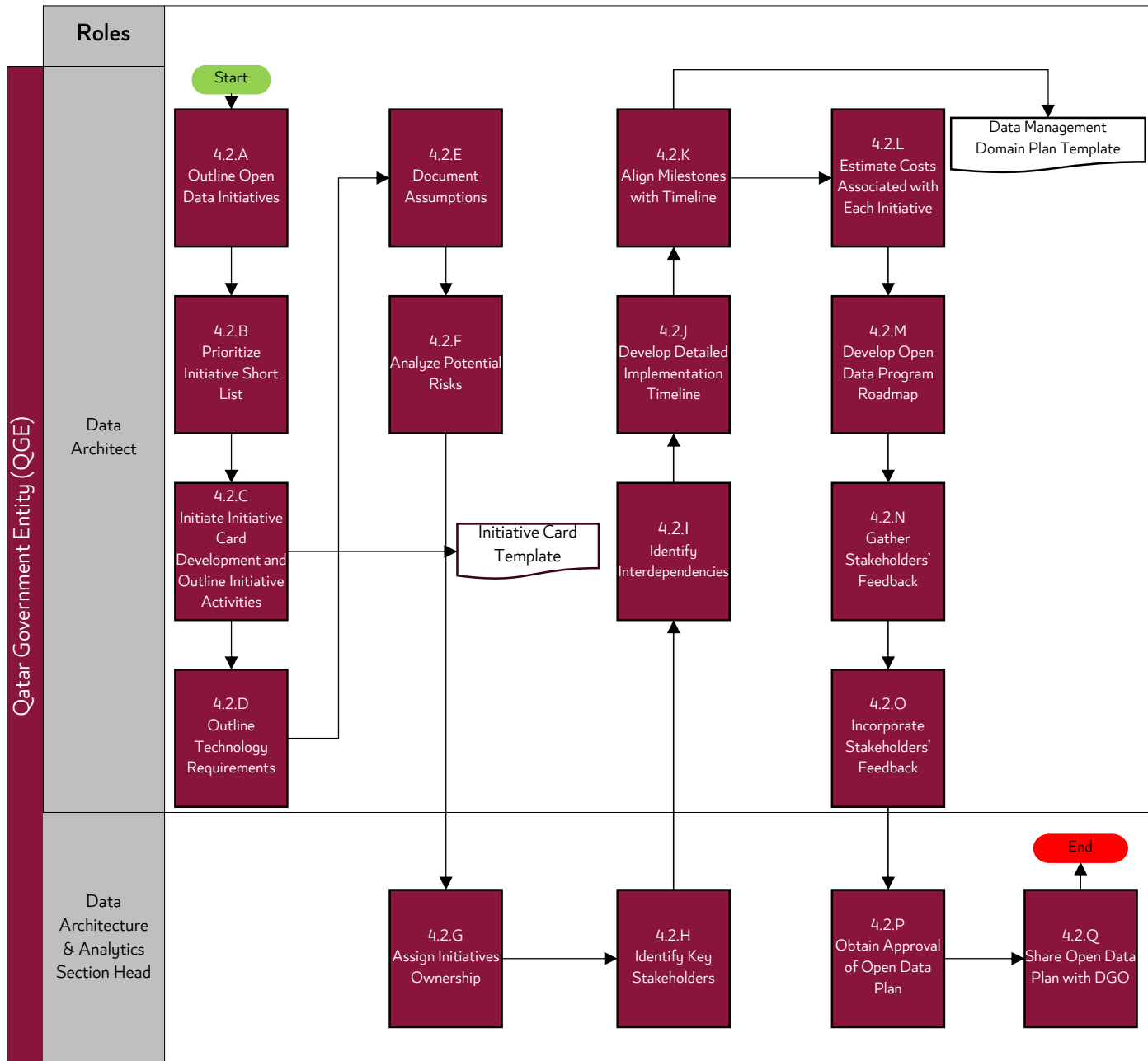


Figure 10: Open Data Plan Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

4.2.A

Outline Open Data Initiatives: Identify and document a comprehensive list of open data initiatives, addressing both short-term and long-term objectives. These initiatives may include actions such as improving the scores of existing open datasets that currently score below 85 on the QDTI, publishing high-priority datasets, and enhancing the quality of metadata documentation. All initiatives should align with the Entity's broader data strategy, ensuring effective resource allocation while addressing key needs related to data accessibility, usability, and compliance.



Key Message / Information

Reference the maturity results findings from section 3.1.1 to identify additional Open Data Initiatives to uplift maturity.

4.2.B

Prioritize Initiative Short List: Leverage the long list of open data initiatives to identify and prioritize a short list based on impact and feasibility. Focus on high-impact areas where open data can drive public engagement, transparency, and innovation. Ensure alignment with the Entity's strategic objectives, prioritizing initiatives that address critical gaps in data accessibility, quality, and interoperability. Additionally, identify quick wins—initiatives that can be implemented rapidly with minimal resources to deliver immediate benefits and demonstrate the value of open data efforts.

4.2.C

Initiate Initiative Card Development and Outline Initiative Activities: Develop initiative cards for each prioritized initiative, capturing essential activities and steps required for implementation. For each initiative, outline key activities by breaking them down into specific steps and sub-activities that need to be completed in sequence (where applicable). Each initiative card should provide clear execution guidance and include relevant details such as tools, methodologies, and required approvals.

Asset Guidance

An **Initiative Card Template** provides a structured format to document key information related to prioritized initiatives, such as initiative overview, key activities, sponsor, owner, stakeholders, timeline, key milestones, budget, technology requirements, dependencies, assumptions, risks, and milestones. The initiative cards provide a structured overview of proposed projects, allowing stakeholders to quickly understand each initiative's purpose, expected impact, and resource requirements.

Illustrative

OVERVIEW	SPONSOR	STAKEHOLDERS
xxx	xxx	xxx
OWNER		
xxx		
KEY ACTIVITIES		TIMELINE
1. Key Activity I. Sub-activity X - Detailed Steps II. Sub-activity Y - Detailed Steps 2. Key Activity I. Sub-activity X - Detailed Steps II. Sub-activity Y - Detailed Steps		xxx QAR xxx EXPECTED BENEFITS • xxx KEY MILESTONES A. xxx B. xxx C. xxx TECHNOLOGY REQUIREMENTS • xxx

OVERVIEW	SPONSOR	STAKEHOLDERS																																																																																																									
xxx	xxx	xxx																																																																																																									
OWNER																																																																																																											
xxxx																																																																																																											
KEY ACTIVITIES		TIMELINE																																																																																																									
<table border="1"><thead><tr><th>#</th><th>Milestones & Key Activities</th></tr></thead><tbody><tr><td>A.</td><td>Milestone</td></tr><tr><td>1.</td><td>Key Activity</td></tr><tr><td>B.</td><td>Milestone</td></tr><tr><td>2.</td><td>Key Activity</td></tr><tr><td>C.</td><td>Milestone</td></tr><tr><td>3.</td><td>Key Activity</td></tr></tbody></table>		#	Milestones & Key Activities	A.	Milestone	1.	Key Activity	B.	Milestone	2.	Key Activity	C.	Milestone	3.	Key Activity	<table border="1"><thead><tr><th>#</th><th>M1</th><th>M2</th><th>M3</th><th>M4</th><th>M5</th><th>M6</th><th>M7</th><th>M8</th><th>M9</th><th>M10</th><th>M11</th><th>M12</th></tr></thead><tbody><tr><td>A.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>B.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>C.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>	#	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	A.													1.													B.													2.													C.													3.												
#	Milestones & Key Activities																																																																																																										
A.	Milestone																																																																																																										
1.	Key Activity																																																																																																										
B.	Milestone																																																																																																										
2.	Key Activity																																																																																																										
C.	Milestone																																																																																																										
3.	Key Activity																																																																																																										
#	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12																																																																																															
A.																																																																																																											
1.																																																																																																											
B.																																																																																																											
2.																																																																																																											
C.																																																																																																											
3.																																																																																																											
DEPENDENCIES		ASSUMPTIONS & RISKS																																																																																																									
• xxx		• xxx																																																																																																									

4.2.D

Outline Technology Requirements: Identify and document the technology requirements needed to support each prioritized open data initiative. This includes outlining the required tools, software, and infrastructure needed to ensure successful implementation and long-term sustainability.

4.2.E

Document Assumptions: Record key assumptions that impact open data planning, including but not limited to resource availability, stakeholder engagement, data complexity to ensure transparency in these assumptions will guide decision-making and help mitigate risks early.

4.2.F

Analyze Potential Risks: Identify and assess risks associated with the implementation of open data initiatives, ensuring proactive mitigation strategies. Key risks include:

- **Limited Stakeholder Buy-In:** Lack of engagement may result in reduced support for data publication efforts.
- **Data Quality Issues:** Inconsistent or incomplete data could impact public trust in open data initiatives.
- **Legal & Compliance Risks:** Mismanagement of sensitive or regulated data may lead to legal challenges.
- **Technical Barriers:** Limited IT infrastructure could slow down implementation.
- **Resource Constraints:** Insufficient funding or expertise could impact initiative success.

4.2.G

Assign Initiatives Ownership: The Data Architecture & Analytics Section Head will assume ownership of all open data initiatives, ensuring each initiative has a dedicated leader to oversee progress, resolve roadblocks, and drive implementation.

4.2.H

Identify Key Stakeholders: Identify and engage key stakeholders essential to the success of open data initiatives, including Data Owners, IT Teams, Data Architects, Metadata Specialist, and Data Compliance Specialist. Early engagement ensures strategic alignment, clarifies roles and responsibilities, and facilitates collaboration for a successful execution.

4.2.I

Identify Interdependencies: Analyze how open data initiatives may impact or be influenced by existing systems, projects, or planned upgrades to enhance resource coordination. This step involves:

- Review overlaps between open data efforts and ongoing IT or business workflows.
- Identify shared resources, including personnel, tools, or infrastructure.
- Ensuring cross-departmental coordination to prevent conflicts, redundancies, or delays.

4.2.J

Develop Detailed Implementation Timeline: Break down each activity in an initiative into actionable steps with start and end dates, ensuring the timeline is realistic and achievable. Each step should have a clear description of the required task, dependencies on other activities, and allocated resources. Ensure that the timeline accounts for potential delays or risks identified earlier, so adjustments can be made without derailing the project.

4.2.K

Align Milestones with Timeline: Set specific checkpoints or milestones throughout the implementation to assess progress. These milestones allow the evaluation of whether the initiative is proceeding as planned and provide opportunities for course corrections.

4.2.L

Estimate Costs Associated with Each Initiative: Estimate expenses related to tools, technology, personnel, and training required for open data initiatives. Break down costs for activities such as acquiring integration platforms, developing APIs, configuring middleware, and conducting staff training on data governance. This step ensures the budget is well-planned, realistic, and comprehensive, covering all critical aspects for successful implementation.

4.2.M

Develop Open Data Program Roadmap: Create a roadmap outlining timelines, phases, and key milestones for implementing prioritized open data initiatives. Sequence initiatives based on dependencies, resource availability, and strategic alignment. Define projected timelines for each initiative to enable stakeholders to monitor progress, coordinate efforts, and allocate resources effectively over time.

Asset Guidance

The **Data Management Domain Plan Template** helps the Entity to outline each identified initiative, including its sub-activities, owners, stakeholders, and activity timeframes.

Illustrative

[illegible]

4.2.N

Gather Stakeholders' Feedback: Present the draft plan to all relevant stakeholders, inviting input on its objectives, scope, proposed activities, and overall timeline. This step ensures that any potential issues, concerns, or overlooked areas are identified early, improving the plan's alignment with organizational needs and building stakeholder commitment.

4.2.O

Incorporate Stakeholders' Feedback: Incorporate constructive feedback from stakeholders to refine the plan, addressing identified concerns and ensuring it aligns with stakeholder expectations. This step fine-tunes the plan details and strengthens its practical feasibility by leveraging diverse perspectives.

4.2.P

Obtain Approval of Open Data Plan: After incorporating stakeholder feedback, present the finalized Open Data Plan to the Data Committee or relevant authority for formal approval. This step ensures alignment with organizational priorities and secures support for implementation. Once approved, the plan is formally adopted and communicated to all relevant stakeholders.

4.2.Q

Share Open Data Plan with DGO: Submit the finalized Open Data Plan to the National Data Governance Office (DGO) for review. The DGO will review the plan and provide recommendations, allowing the Entity to ensure their plan aligns with the broader national data program agenda and best practices.

RACI Matrix – Open Data Plan

Indicative

Sr No.	Activity	DGO	Data Management and Security Director	Data Architecture & Analytics Section Head	Data Governance Specialist	Data Architect	Data Stewards	Data Strategy Expert
4.2.A	Outline Open Data Initiatives		A	C	C	R	C	C
4.2.B	Prioritize Initiative Short List		A	C	C	R	C	C
4.2.C	Initiate Initiative Card Development and Outline Initiative Activities			A	C	R		C
4.2.D	Outline Technology Requirements			A	C	R	C	C
4.2.E	Document Assumptions			A	C	R	C	C
4.2.F	Analyze Potential Risks			A	C	R		C
4.2.G	Assign Initiatives Ownership		A	R				
4.2.H	Identify Key Stakeholders		A	R	C	C	C	
4.2.I	Identify Interdependencies			A	C	R		C
4.2.J	Develop Detailed Implementation Timeline			A	C	R		C
4.2.K	Align Milestones with Timeline			A	C	R		C
4.2.L	Estimate Costs Associated with Each Initiative			A	C	R	C	C
4.2.M	Develop Open Data Program Roadmap			A	C	R		C
4.2.N	Gather Stakeholders' Feedback			A	C	R		
4.2.O	Incorporate Stakeholders' Feedback			A		R		C
4.2.P	Obtain Approval of Open Data Plan		A	R				
4.2.Q	Share Open Data Plan with DGO	C/I	A	R				

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Outline Open Data Initiatives



Develop and Review Open Data Plan

A photograph of the Dubai skyline at sunset, featuring the Burj Khalifa and other skyscrapers reflected in the water. The sky is a mix of orange, pink, and purple hues.

5. Data Sharing, Integration & Interoperability Implementation

5. Data Sharing, Integration & Interoperability Implementation

What is Data Sharing, Integration & Interoperability Implementation and why does the Entity need it?

Data Sharing, Integration & Interoperability Implementation focuses on operationalizing data exchange processes and establishing the necessary technical and governance infrastructure for secure, and scalable data sharing. This includes establishing data sharing agreements, enforcing data-sharing principles, and implementing integration architectures between systems and entities.

This enables the Entity to formalize and manage data-sharing activities through clearly defined roles, approval workflows, and technical integration methods (e.g., APIs, database-to-database integrations, and file-based transfers). It ensures all exchanges align with the national data standards, comply with legal and security requirements, and support traceability and auditability.

By adopting a structured implementation approach, the Entity minimizes redundancy, ensures data quality and consistency across systems, and strengthens its capacity to support real-time, near real-time and batch data exchange.

The remaining sections of this chapter will detail the activities of the below process that will guide the Entity on executing the Data Sharing, Integration & Interoperability Implementation specifications:



Guiding Principles for Data Sharing, Integration & Interoperability Implementation

1. **Establish Data Sharing Accountability:** Define clear ownership and responsibilities for data-sharing processes, ensuring compliance with policies and governance frameworks.
2. **Standardize Data Exchange Methods:** Adopt consistent integration approaches, such as database connections, or APIs, to streamline interoperability.
3. **Optimize Integration Performance:** Design a scalable and efficient data-sharing architecture that minimizes latency, enhances reliability, and supports high-volume transactions.
4. **Monitor and Log Data Sharing Activities:** Track integration operations in real time to ensure auditability, traceability, and alignment with SLAs and data contracts.
5. **Promote Cross-Entity Collaboration:** Foster open communication and alignment between data owners, stewards, and technical teams from all involved entities to reduce friction in integration efforts.

5.1 Data Sharing, Agreements & Contracts

This section guides the Entity in developing a Data Sharing Agreement template and leveraging existing templates for use in data product sharing across various sharing methods.

5.1.A

Leverage the Data Sharing Agreement (DSA) Template: When establishing agreements with other entities for data sharing, the Entity must reference the Data Sharing Agreement Template as a foundation. The template includes illustrative articles covering legal, operational, and governance aspects of data exchange, which can be customized based on mutual discussions between the source (data owning) and requesting (data requesting) entities. The DSA also allows for flexible definition of duration and renewal terms, ensuring alignment with both parties' expectations and requirements.

Asset Guidance

The **Data Sharing Agreement Template** can be leveraged as an illustrative example of what the Entity can include in its version.

Illustrative

وثيقة مشروع تبادل البيانات للحصول على البيانات الأولية والبيانات المعالجة بين (اسم الجهة الطالبة) و(اسم الجهة المصدرة) Data Exchange Project Document Between the (name of the requesting entity) and (name of the source entity) for Obtaining Primary Data and Processed Data	
In line with [Requesting entity mandate or other objectives]	انطلاقاً [التفويض القانوني الخاص بالجهة الطالبة أو أهدافها الأخرى]
In order [Requesting Entity Business Requirement]	وحرصاً على [متطلبات الأعمال للجهة الطالبة]
And in affirmation of the bonds of cooperation for the general benefit of society;	وتأكيداً على أواصر التعاون بينهما بما يعود بالنفع العام على المجتمع.
It has been agreed to conclude this Document on (day) -----, --/--/----, corresponding to --/--/---- AH between:	المجتمع. فقد اتفقا على إبرام هذه الوثيقة في يوم ----- بتاريخ الموافق --/--/---- الموافق --/--/---- بين كل من:
1.[Name of Requesting Government Entity], represented by: Mr/s. -----, In his/her capacity as: -----, Address: -----, "First Party/-----"	1. [اسم الجهة الحكومية الطالبة]، ويمثله/ها: السيد/ة ----- بصفته/ بصفتها: ----- وعنوانه: -----، "الطرف الأول / -----"
2.[Name of Source Government Entity], represented by: Mr/s. -----, In his/her capacity as: -----, Address: -----, "Second Party/-----" Collectively, the "Parties".	2. [اسم الجهة الحكومية المصدرة]، ويمثله/ها: السيد/ة ----- بصفته/ بصفتها: ----- وعنوانه: -----، "الطرف الثاني / -----" ويشار إليهما مجتمعين بـ "الطرفان أو الطرفين".



Key Message / Information

A Data Sharing Agreement is a one-time foundational agreement established between entities before any specific datasets are shared. It defines the overarching terms and responsibilities governing data exchange.

5.1.B
(1/3)

Leverage Existing Data Sharing Templates. Depending on the data exchange method used via the Government Network (GN), the entity should use the following data sharing templates:

- i. **Option A: API Template.** To be used as a contract for all data exchanges conducted through the Government Data Exchange (GDX) Platform.

Asset Guidance

The source entity must populate the API Template for data shared via the Government Data Exchange Platform.

Illustrative

وزارة الإتصالات وتكنولوجيا المعلومات
Ministry of Communications and Information Technology
دولة قطر • State of Qatar





منصة تبادل البيانات الحكومية
Government Data Exchange

GDX Integration

[Provider Service Name]

Technical Area :	
Provider Service name :	
Status :	
Version :	
Version Date :	

- ii. **Option B: Data Contract Template.** For data exchanges conducted via SFTP or Database-to-database integration, the entity must develop a detailed Data Contract to formalize the conditions under which the data will be shared, used, and governed. This contract must be created using the Data Contract Template and should include the following key components:

- **Title and Description:** Clearly define the title and provide a summary of the data contract's purpose and scope.
- **Contract Owner:** Specify the individual or department responsible for managing, maintaining, and enforcing the contract.
- **Terminology Definition:** Include definitions for key terms used in the agreement to prevent ambiguity and ensure mutual understanding.

a. Define Usage and Limitations:

- **Data Usage:** Detail how the requesting entity is permitted to use the data, including any limitations related to analysis, third-party sharing, or publication.
- **Limitations:** Outline any restrictions on access, redistribution, or combining the shared data with other datasets.
- **Validity Period:** Define the start and end date, or validity duration of the contract to indicate when it becomes active and enforceable.

b. Dataset Specifications:

- **Dataset Name:** Indicate the specific dataset covered by the contract.
- **Data Classification:** Classify the data based on sensitivity (e.g., Top Secret, Secret, Restricted, Internal, Public).
- **Data Format & Types:** Identify the file format (e.g., CSV, JSON) and the corresponding data types (e.g., String, Integer, Date) for each attribute.
- **Attributes:** List the specific attributes or fields that will be shared under this contract.
- **Update Frequency:** Specify how often the data will be refreshed or provided (e.g., daily, weekly).

c. Technical & Sharing Method:

- **Method of Sharing:** Define the technical method used for the data exchange (e.g., SFTP, Database-to-database integration), ensuring secure transfer channels are in place.

d. Formalization:

- **Source & Requesting Entity Signatures:** Capture signatures from both the providing and receiving entities to confirm agreement, approval, and accountability for the terms.

5.1.B
Cont.
(3/3) Asset Guidance

The **Data Contract Template** can be utilized to capture the agreement between the source and requesting entity for data sharing via SFTP and Database-to-database integration.

Illustrative

 Data Contract Template							
The following table can be utilized during data products sharing within the Entity or with other external Entities.							
Field	Description						
Data Contract Title	The title of the data contract.						
Data Contract Description	Brief overview of the data contract, summarizing its purpose and scope.						
Data Contract Owner	The individual or entity responsible for managing and overseeing the data contract.						
Terminology Definition	Definition of terminology used throughout the contract.						
Data Contract Usage	Description of how the data can be used by the requesting party, including any constraints related to analysis, publication, or third-party sharing.						
Data Contract Limitation	Any restrictions on data access, scope of use, redistribution, or combination with other datasets.						
Data Contract Validity Period	The start and end dates (or duration) during which the contract remains valid and enforceable.						
Dataset Name	The name of the specific dataset being shared under this contract.						
Data Classification	The categorization of data based on its sensitivity and confidentiality, such as Top Secret, Secret, Restricted, Internal, Public.						
Data Format	The format in which the data is provided, such as CSV, JSON, XML, or RDF.						
Method of Sharing	The method used for data exchange, such as SFTP, or DB Link.						
Frequency of Updates	How often the dataset is refreshed or updated for the consuming entity (e.g., Daily, Weekly, Monthly).						
Attributes	A list of the dataset's key fields or attributes being shared.						
Data Types	The data types associated with each attribute (e.g., String, Integer, Date, Boolean), ensuring compatibility and accurate interpretation.						
Source Entity Signature	The formal signature of the authorized representative from the source (data-providing) entity, confirming their approval and commitment to the terms of the contract.						
Requesting Entity Signature	The formal signature of the authorized representative from the requesting (data-consuming) entity, confirming their acceptance and agreement to the data usage terms outlined in the contract.						

Data Contract Title	Data Contract Description	Data Contract Owner	Terminology Definition	Data Contract Usage	Data Contract Limitation	Data Contract Validity Period	Dataset Name

Data Classification	Data Format	Method of Sharing	Frequency of Updates	Attributes	Data Types	Source Entity Signature	Requesting Entity Signature



Key Message / Information

Using these templates where applicable ensures compliance with the specification.

RACI Matrix – Data Sharing, Agreements & Contracts

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	Data Governance Specialist	IT Team	Data Compliance Specialist	Business Data Steward
5.1.A	Leverage the Data Sharing Agreement (DSA) Template	I	A	R	C	C	R
5.1.B	Leverage Existing Data Sharing Templates	I	A	R	R	C	R

RACI Matrix Legend: R: Responsible A: Accountable C: Consulted I: Informed

Based on this Activity, the Entity can



Develop Data Sharing Agreement Template



Develop Data Contract Template

5.2 Data Sharing Principles & Process

This section outlines the steps for developing and adopting the data-sharing process that will govern data exchange within the Entity and with other entities. It aims to standardize data-sharing practices and ensure compliance with all necessary principles and requirements.

Process - Data Sharing Process

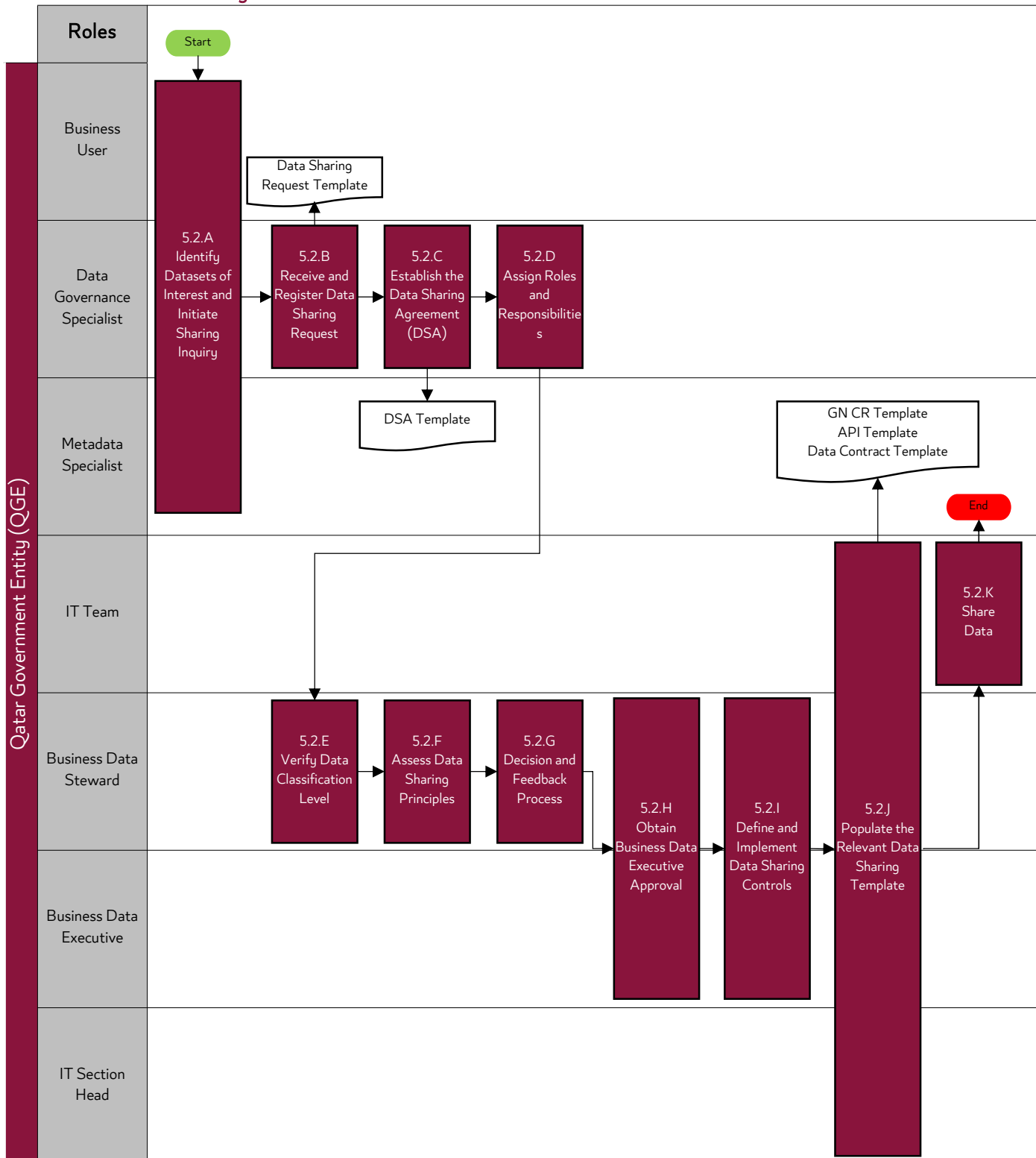


Figure 11: Data Sharing Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

5.2.A

Identify Datasets of Interest and Initiate Sharing Inquiry: Before establishing a formal Data Sharing Agreement (DSA), the requesting Entity must first identify the datasets it wishes to request and inquire with the source entity about the possibility of sharing them.

- i. The requesting entity should review the National Data Catalog to explore available datasets and identify those relevant to its operational, analytical, or strategic needs.
- ii. Use the catalog to locate metadata, classification levels, and designated Data Owners or Stewards responsible for each dataset.
- iii. The requesting entity must then submit an inquiry to the Data Owner or Steward, providing clear details such as the following:
 - Requesting Department within the Entity
 - Requestor Name
 - Purpose of Request
 - Dataset Required
 - Attributes Required
 - Data Classification Level
 - Data Sharing Method (e.g., Government Network (GDX, SFTP, Database-to-database integration))
 - Intended Duration of Access
 - Basis for Access
- iv. This inquiry helps determine whether the dataset can be shared based on technical feasibility, data sensitivity, and legal constraints. If the source entity confirms feasibility, the requesting entity should proceed with drafting the DSA (detailed in step 5.2.C).

**Key Message / Information**

This preliminary inquiry helps avoid unnecessary administrative effort by ensuring the requested data is eligible for sharing and aligns with both parties' capabilities and governance requirements.

5.2.B

Receive and Register Data Sharing Request: Upon receiving the formal inquiry from the requesting entity, the source Entity must log and register the data-sharing request for tracking and internal review.

The internal Data Office or designated team must record the request details, including the purpose, dataset(s) requested, data classification, and duration of access.

- Assign a unique request identifier to the submission and initiate the internal review workflow.
- Evaluate the request to verify alignment with internal policies, business needs, legal justifications, and access protocols.
- Maintain complete documentation and track request status to support timely decision-making, compliance, and audit readiness.

Asset Guidance

The **Data Sharing Request Template** can be leveraged by the Entity's internal data office to evaluate and process data sharing requests. Illustrative

Data Sharing Request Template								
The following table can be used as a record for the internal data office to evaluate and process data sharing requests.								
Field	Description							
Request ID	A unique identifier for each data sharing request.							
Request Date	The date the request was submitted.							
Requesting Entity	The name of the external entity requesting the data.							
Requesting Department	The department within the Entity that is submitting the request.							
Requestor Name	Name of the individual or team submitting the request.							
DSA Status	Indicates the status of the DSA with the requesting entity: Yes, No, or In Progress (being drafted)							
Purpose of Request	A description of why the data is needed and how it will be used.							
Dataset Required	The name of the requested dataset.							
Attributes Required	The name(s) of the requested attribute(s) within the dataset.							
Data Classification Level	The classification of the requested data (e.g., Top Secret, Secret, Restricted, Internal, Public).							
Data Sharing Method	Mode of data access (e.g., Government Network (GD), SFTP, DB Link).							
Intended Duration of Access	Duration for which the data is needed (e.g., One-time, Ongoing).							
Basis for Access	The legal or practical justification for accessing the data.							
Request Status	The status of the request (e.g., Under Review, Approved, Denied, Returned).							
Business Data Steward	Name of the Business Data Steward responsible for evaluating, processing, and coordinating approvals.							
Reviewer/Approver	The name of the individual (executive business data steward) and/or team responsible for approving the request.							
Notes	Additional comments or clarifications related to the request.							

Request ID	Request Date	Requesting Entity	Requesting Department	Requestor Name	DSA Status	Purpose of Request	Dataset Required	Attributes Required

Data Classification Level	Data Sharing Method	Intended Duration of Access	Basis for Access	Request Status	Business Data Steward	Reviewer/Approver	Notes

5.2.C
(1/2)

Establish the Data Sharing Agreement (DSA): Before initiating any dataset-specific requests, the requesting Entity must prepare a formal DSA to define the overarching legal and operational framework for data exchange with the external source entity.

- Begin by populating the DSA Template to collect all necessary information, including participating entities, roles and responsibilities, signatories, legal basis for sharing, access methods, and governance controls.
- Based on the completed template, draft the DSA document, ensuring it accurately reflects the collected inputs and expectations of both parties.
- Submit the draft DSA to the source entity for review and allow time for feedback or suggested refinements.

5.2.C
Cont.
(2/2)

- iv. Once consensus is reached, finalize the DSA and obtain formal signatures from both parties. The DSA must be in place before any dataset-level approval documents or data-sharing activities proceed.



Key Message / Information

The DSA is a foundational, one-time agreement that must be signed before requesting or exchanging specific datasets. All future exchanges are governed at the dataset level through other templates depending on the data sharing delivery method.



Asset Guidance

The **Data Sharing Agreement Template** can be leveraged as an illustrative example of what the Entity can include in its version.

Illustrative

وثيقة مشروع تبادل البيانات للحصول على البيانات الأولية والبيانات المعالجة بين (اسم الجهة الطالبة) و(اسم الجهة المصدرة) Data Exchange Project Document Between the (name of the requesting entity) and (name of the source entity) for Obtaining Primary Data and Processed Data	
In line with [Requesting entity mandate or other objectives]	انطلاقاً [التفويض القانوني الخاص بالجهة الطالبة أو أهدافها الأخرى]
In order [Requesting Entity Business Requirement]	وحرصاً على [متطلبات الأعمال للجهة الطالبة]
And in affirmation of the bonds of cooperation for the general benefit of society;	وتأكيداً على أواصر التعاون بينهما بما يعود بالنفع العام على المجتمع، فقد اتفقا على إبرام هذه الوثيقة في يوم ----- بتاريخ ----- الموافق ----- بين كل من:
It has been agreed to conclude this Document on (day) -----, --/--/----, corresponding to --/--/---- AH between:	
1.[Name of Requesting Government Entity], represented by: Mr/s. -----, In his/her capacity as: -----, Address: -----, "First Party/-----"	1. [اسم الجهة الحكومية الطالبة]، ويمثله/ها: السيد/ة -----، بصفته/ بصفتها: -----، وعنوانه: -----، "الطرف الأول /-----"
2.[Name of Source Government Entity], represented by: Mr/s. -----, In his/her capacity as: -----, Address: -----, "Second Party/-----" Collectively, the "Parties".	2. [اسم الجهة الحكومية المصدرة]، ويمثله/ها: السيد/ة -----، بصفته/ بصفتها: -----، وعنوانه: -----، "الطرف الثاني /-----" ويشار إليهما مجتمعين بـ "الطرفان أو الطرفين".

5.2.D

Assign Roles and Responsibilities: The source entity's data office forwards the request to the Business Data Steward, who is responsible for evaluating, processing, and coordinating approvals. Relevant stakeholders, such as IT teams, compliance officers, and legal representatives, are engaged if needed.

5.2.E

Verify Data Classification Level: The Business Data Steward confirms that the classification level of the requested data (e.g., Top Secret, Secret, Restricted, Internal, Public) is accurately reflected in the National Data Catalog and verifies whether it remains current or has changed since it was originally posted. This validation ensures that sharing is permissible and helps determine whether additional approvals or security measures are required.

5.2.F

Assess Data Sharing Principles: The request is evaluated against the Entity's established data-sharing principles to ensure that the proposed exchange aligns with legal, ethical, and operational expectations. The assessment must check against the following principles:

- **Data Sharing Culture:** The Entity shall share the master data it produces to support data-sharing and integration across government entities. It must adopt the Single Source of Truth (SSOT) principle to ensure that data is shared from its proper authoritative source, avoiding duplication, inconsistency, and multiple versions.
- **Legitimate Purpose:** Data must only be shared for legally grounded or justified practical needs that aim to deliver public value without compromising national interests, operational integrity, personal privacy, or environmental safety.
- **Authorized Access:** Only users or systems with appropriate authority may access, receive, or use the data being shared.
- **Transparency:** All necessary details about the data, including scope, structure, and usage, must be made available to support a transparent sharing process.
- **Accountability:** The Entity must uphold full responsibility for the data it shares, ensuring that all required security measures and governance protocols are followed in line with national laws and policies.
- **Ethical Data Use:** All shared data must be used fairly and responsibly, respecting principles of trust, integrity, and equity in its application and distribution.

5.2.G

Decision and Feedback Process: If the request aligns with data-sharing principles and classification requirements, the Business Data Steward provides feedback on pre-approval status. If requirements are not met, the request is either returned or denied, with justifications provided.

5.2.H

Obtain Business Data Executive Approval: Once the Business Data Steward confirms that all data-sharing principles are fully satisfied, the request is escalated to the Business Data Executive for final approval. This ensures that data-sharing activities align with governance policies, regulatory requirements, and operational objectives before execution. No data-sharing request may proceed without this approval, reinforcing accountability and oversight at the executive level.

5.2.I

Define and Implement Data Sharing Controls: The Business Data Steward sets controls to ensure secure and compliant data-sharing, including:

- Legal basis for sharing
- Authorization levels
- Data type and format
- Data-sharing means (e.g., Government Network (GDX, SFTP, Database-to-database integration))
- Usage restrictions and data protection measures
- Duration and frequency of access

5.2J
(1/4)

Populate the Relevant Data Sharing Template: Depending on the data sharing method, there are various types of templates that need to be completed. All government data exchange must take place within the Government Network (GN), and each method (e.g., GDX, SFTP, Database-to-database integration) has specific technical and procedural templates that must be filled out. The following considerations apply to each type:

- i. **Option A: Data Sharing via the Government Data Exchange Platform (GDX).** If either the requesting or providing entity has not previously established access to the Government Data Exchange (GDX) platform, the following steps must be completed before any data exchange can occur:
 - a. **Complete the GN Change Request Form:** The entity without GDX access must fill out the Government Network (GN) Change Request form to initiate platform access.

Asset Guidance

The source and requesting entities must both populate the Government Network Change Request Template to gain access to the GDX platform.

Illustrative

Change Request (Initiated by Customer)			
Originator General Information		Priority Level	☐ P1 ☐ P2 ☐ P3
Date*	Agency Code / Name*		Requester Name*
Phone*	Email*		Fax
Change details *		☐ Add ☐ Unidirectional ☐ Site-to-Site ☐ permanent ☐ Delete ☐ Bidirectional ☐ Internet ☐ Temp. For Days	
please enter the remote site code/name* for internet connection, select internet		National Planning Council - NPC	
Site-to-Site Requirements			
Description – Please add the necessary details in order to fulfill the raised request for site-to-site connectivity			
➤ (Only) If NAT (Network Address Translation) or PAT (Port Address Translation) on GN Firewall			
Local IP / Subnet ❶	NAT or PAT IP / Subnet ❷	Local IP / Subnet	NAT or PAT IP / Subnet
❶ : Local IP should be selected from the Agency LAN network ❷ : NAT IP should be part of the GN subnet assigned to the Agency			
Access-Lists (ACLs)			
From (Source IP/Subnet) ❸*	To (Destination IP/Subnet) ❹*	Destination Port(s) ❺*	Services description *

- b. **Submit the Form to the GN Team:** Submit the completed form to the Government Network team, who will validate the information.
- c. **Await GN Team Approval:** The GN team will review the submission and, if approved, authorize GDX access for the entity. Once approved, the entity can connect to and use the GDX platform for secure data exchange.

5.2.J
(2/4)

Key Message / Information

Steps A–C are only required if it is the entity's first time using the GDX platform and no prior access request has been submitted. If the entity already has access to GDX, steps A-C can be skipped.

d. The source entity must complete the API Template to document the technical specifications of the data service. This includes the following:

- Endpoint URLs
- Authentication requirements
- Request and response structures
- Data fields frequency
- Any additional metadata needed to enable API integration via GDX



Asset Guidance

The source entity must populate the **API Template** for data shared via the Government Data Exchange Platform.

Illustrative

وزارة الإتصالات وتكنولوجيا المعلومات Ministry of Communications and Information Technology دولة قطر • State of Qatar	
 منصة تبادل البيانات الحكومية Government Data Exchange	
GDX Integration [Provider Service Name]	
Technical Area :	
Provider Service name :	
Status :	
Version :	
Version Date :	

e. The finalized template is shared with the GDX team to facilitate configuration and eventual subscription to the data via the GDX platform.

5.2J
(3/4)

ii. Option B: Data Sharing via SFTP and Database-to-database Integration

- a. The source entity populates the Data Contract Template with all relevant details. This includes the following:
 - Data contract title
 - Data contract description
 - Data contract owner
 - Data contract terms (usage, limitations, and validity period)
 - Data definitions
 - Data types
 - Data format
 - Data structure
 - Data constraints
 - Data classification.
- b. Input should be coordinated with the Data Owner, Compliance Specialist, and Technical Leads to ensure completeness and accuracy. The contract is then shared with the requesting entity for review and signing.

 Asset Guidance

The **Data Contract Template** can be utilized to capture the agreement between the source and requesting entity for data sharing via SFTP and Database-to-database integration. Illustrative

Data Contract Template							
The following table can be utilized during data products sharing within the Entity or with other external Entities.							
Field	Description						
Data Contract Title	The title of the data contract.						
Data Contract Description	Brief overview of the data contract, summarizing its purpose and scope.						
Data Contract Owner	The individual or entity responsible for managing and overseeing the data contract.						
Terminology Definition	Definition of terminology used throughout the contract.						
Data Contract Usage	Description of how the data can be used by the requesting party, including any constraints related to analysis, publication, or third-party sharing.						
Data Contract Limitation	Any restrictions on data access, scope of use, redistribution, or combination with other datasets.						
Data Contract Validity Period	The start and end dates (or duration) during which the contract remains valid and enforceable.						
Dataset Name	The name of the specific dataset being shared under this contract.						
Data Classification	The categorization of data based on its sensitivity and confidentiality, such as Top Secret, Secret, Restricted, Internal, Public.						
Data Format	The format in which the data is provided, such as CSV, JSON, XML, or RDF.						
Method of Sharing	The method used for data exchange, such as SFTP, or DB Link.						
Frequency of Updates	How often the dataset is refreshed or updated for the consuming entity (e.g., Daily, Weekly, Monthly).						
Attributes	A list of the dataset's key fields or attributes being shared.						
Data Types	The data types associated with each attribute (e.g., String, Integer, Date, Boolean), ensuring compatibility and accurate interpretation.						
Source Entity Signature	The formal signature of the authorized representative from the source (data-providing) entity, confirming their approval and commitment to the terms of the contract.						
Requesting Entity Signature	The formal signature of the authorized representative from the requesting (data-consuming) entity, confirming their acceptance and agreement to the data usage terms outlined in the contract.						

Data Contract Title	Data Contract Description	Data Contract Owner	Terminology Definition	Data Contract Usage	Data Contract Limitation	Data Contract Validity Period	Dataset Name

Data Classification	Data Format	Method of Sharing	Frequency of Updates	Attributes	Data Types	Source Entity Signature	Requesting Entity Signature

- c. Once both entities review, refine, and finalize the terms, the Data Contract is signed by the authorized signatories of the source and requesting Entities. The signed contract becomes the binding agreement governing the data-sharing instance and must be archived in the centralized documentation repository for future audits, compliance, and renewal tracking.

5.2J
(4/4)

- d. After both entities sign the data contracts, the requesting entity must initiate the GN Change Request process by completing the required form. To do this, the requesting entity must acquire the necessary details from the source entity's IT team, including IP addresses, ports, and protocols related to the selected data-sharing method (SFTP or Database-to-database integration).

Asset Guidance

The requesting entity must populate the Government Network Change Request Template to facilitate the data sharing process via SFTP or Database-to-database integration.

Illustrative

Change Request (Initiated by Customer)			
Originator General Information		Priority Level	☐ P1 ☐ P2 ☐ P3
Date*	Agency Code / Name*		Requester Name*
Phone*	Email*		Fax
Change details *	☐ Add ☐ Delete	☐ Unidirectional ☐ Bidirectional	☐ Site-to-Site ☐ Internet ☐ permanent ☐ Temp. For Days
please enter the remote site code/name* for internet connection, select internet		National Planning Council - NPC	
Site-to-Site Requirements			
Description – Please add the necessary details in order to fulfill the raised request for site-to-site connectivity			
➤ (Only) If NAT (Network Address Translation) or PAT (Port Address Translation) on GN Firewall			
Local IP / Subnet ❶	NAT or PAT IP / Subnet ❷	Local IP / Subnet	NAT or PAT IP / Subnet
❶ : Local IP should be selected from the Agency LAN network ❷ : NAT IP should be part of the GN subnet assigned to the Agency			
Access-Lists (ACLs)			
From (Source IP/Subnet) ❸*	To (Destination IP/Subnet) ❹*	Destination Port(s) ❺*	Services description *

- e. Once completed, the requesting entity submits the GN Change Request form to the Government Network team for processing.
- f. The GN team forwards the submitted form to the source entity for review. The source entity's IT must review the request and provide approval before proceeding.
- g. After approval, the Government Network team opens the necessary network channels to enable secure data exchange.

5.2.K

Share Data: The source entity shares data with the requesting entity as per the following:

i. **Government Data Exchange Platform:**

- a. The requesting entity subscribes to the published data service through the Government Data Exchange (GDX) platform.
- b. The source entity then approves the subscription request within the GDX platform, ensuring that only authorized entities gain access to the shared data. This approval enables secure, controlled access to the API as per the API Template.



Key Message / Information

Before approving a subscription, the source entity must verify that a valid DSA is in place. If a subscription request is received from another government entity without a DSA, it must be rejected, and the requesting entity should be informed that formal agreements are required prior to approval.

ii. **SFTP and Database-to-database integration:**

- a. The requesting and source entity's IT teams verify that the data contract has been signed and confirm that the Government Network Team has opened the necessary network channels to enable secure data exchange.
- b. The IT teams coordinate to execute the data exchange based on the agreed method (e.g., SFTP or Database-to-database integration).
- c. The source entity shares the data in accordance with the terms outlined in the data contract.
- d. The requesting entity begins consuming the shared data, adhering to all agreed-upon usage conditions, including access controls, data handling procedures, and security measures. Ongoing usage must comply with defined retention, privacy, and reporting requirements to ensure responsible and accountable use of the data.

RACI Matrix – Data Sharing Principles & Process

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	IT Section Head	Business Data Executive	Data Governance Specialist	Data Compliance Specialist	Business Data Steward	Metadata Specialist	IT Team	Business User	Legal Team
5.2.A	Identify Datasets of Interest and Initiate Sharing Inquiry		A			R			R		R	
5.2.B	Receive and Register Data Sharing Request		A			R			C			
5.2.C	Establish the Data Sharing Agreement (DSA)	I	A/C				R					C
5.2.D	Assign Roles and Responsibilities		A			R	I	I	I	I		
5.2.E	Verify Data Classification Level:		A			C	C	R	C			
5.2.F	Assess Data Sharing Principles		A			C	C	R	C			C
5.2.G	Decision and Feedback Process		A					R				
5.2.H	Obtain Business Data Executive Approval		A		R			R				
5.2.I	Define and Implement Data Sharing Controls		A				C	R		C	C	C
5.2.J	Populate the Relevant Data Sharing Template	A	C	R	R	C		R		R		C
5.2.K	Share Data	I	I	A	I	I		I		R	I	

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Identify, request, and share datasets with other Entities

5.3 Data Integration & Interoperability Architecture

This section outlines the structured steps to build, standardize, and maintain integration solutions while ensuring alignment with existing data models.

Process - Data Integration & Interoperability Architecture

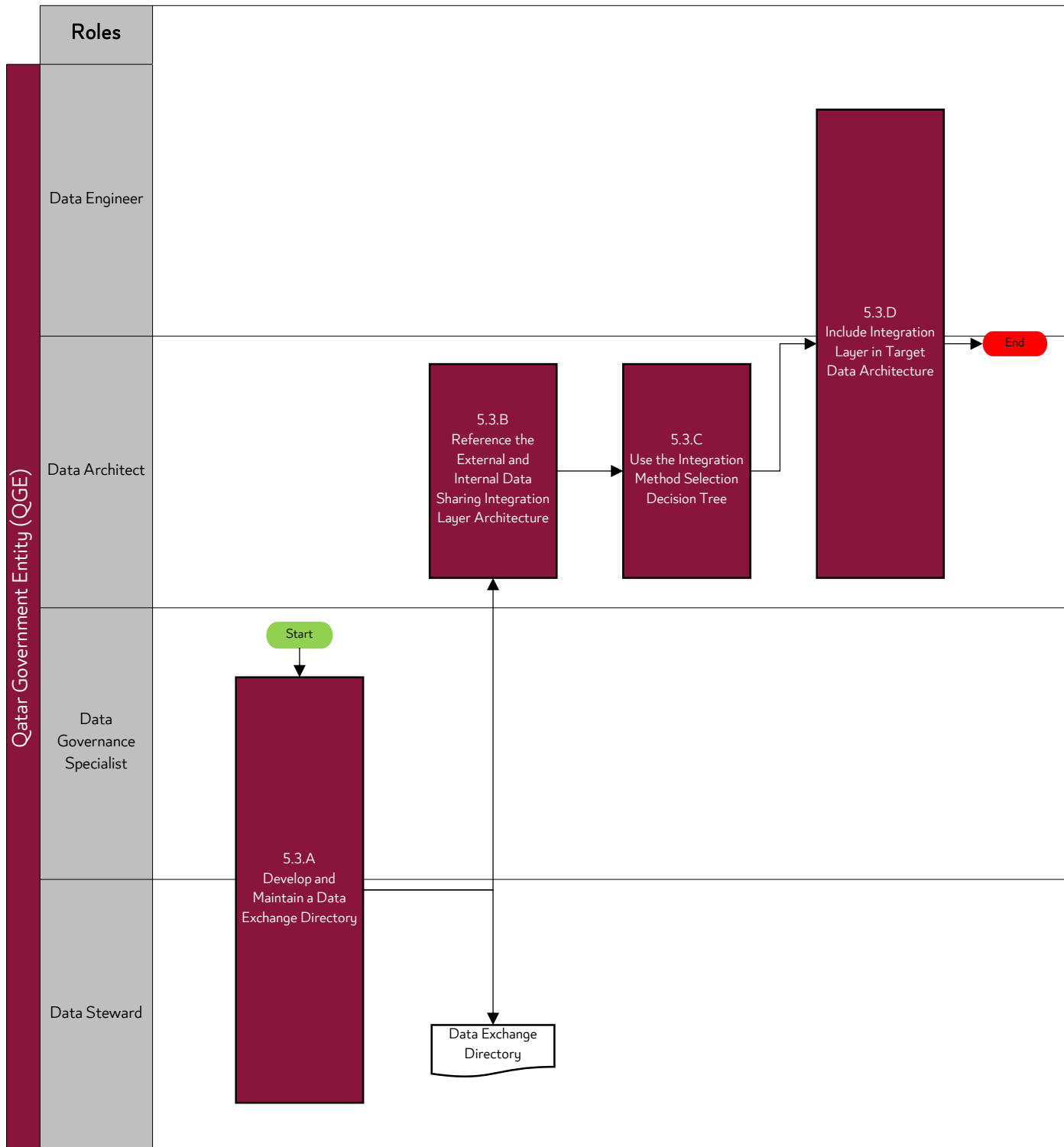


Figure 12: Data Integration & Interoperability Architecture Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

5.3.A

Develop and Maintain a Data Exchange Directory. Establish a centralized record of all data exchanges to ensure transparency, accountability, and governance across the Entity's data-sharing activities.

- Document key details for each exchange, including the source and requesting entities, data purpose, exchange medium, and frequency of data transfer.
- Define minimum acceptable data quality levels to ensure that shared data meets the receiving entity's business needs and priorities. Implement a data change control process to notify consumers of modifications to underlying datasets or formats, preventing inconsistencies and disruptions.
- Track the status of each data exchange (e.g., Active, Stopped, Planned) and define SLA monitoring frequency to assess compliance with performance and availability standards. Maintaining this directory enables efficient oversight, improved coordination, and continuous optimization of data-sharing processes.

Asset Guidance

The **Data Exchange Directory** can be leveraged by the Entity to register all its existing data sharing and exchange internally and externally.

Illustrative

 Data Exchange Directory	
The following table can be utilized by the Entity to register all its existing data sharing and exchange internally and externally, including information on which sources are being requested, by whom, how often and for what purpose.	

Field	Description
Data Exchange ID	Each data exchange must have unique identifier that start with "DX" as prefix , followed by a number.
Provider Name	The name of the Entity that provide (source) the Data.
Provider Type	The data provider entity type; Council of ministers, ministries, supreme councils, or other government bodies
Data Exchanged Description	Brief description about the exchanged data (e.g., what is it, why is it needed, etc.).
Consumer Name	The name of the entity that consumes (receives) the data.
Consumer Type	The data provider entity type; Council of ministers, ministries, supreme councils, or other government bodies
Estimated Record Volume	Approximate number of records transferred per exchange instance (e.g., 10,000; 200,000).
Average Payload Size	Estimated size of each exchange payload in megabytes (MB), or total size per transfer session.
Exchange Medium	The data exchange medium used (e.g., SFTP, database-to-database link, GDX, etc.).
Data Purpose	The overall intent for why the data should be shared and exchanged.
Data Exchange Frequency	The frequency at which the data is shared (e.g., real-time, daily, weekly, etc.).
Acceptable Data Quality Level	Minimum level of acceptable data quality according to the entity's business needs and proprieties.
Data change control process	The mechanism of informing data consumers of changes to the underlying data sets or data formats.
SLA monitoring frequency	The frequency at which the service level shall be measured.
Status	Current status of the data exchange; Active, Stopped, Planned.
Notes	Any notes or comments related to this data exchange.

Data Exchange ID	Provider Name	Provider Type	Data Exchanged Description	Consumer Name	Consumer Type	Estimated Record Volume	Average Payload Size

Exchange Medium	Data Purpose	Data Exchange Frequency	Data Quality	Data Change control process	SLA Monitoring Frequency	Status	Notes

5.3.B
(1/2)

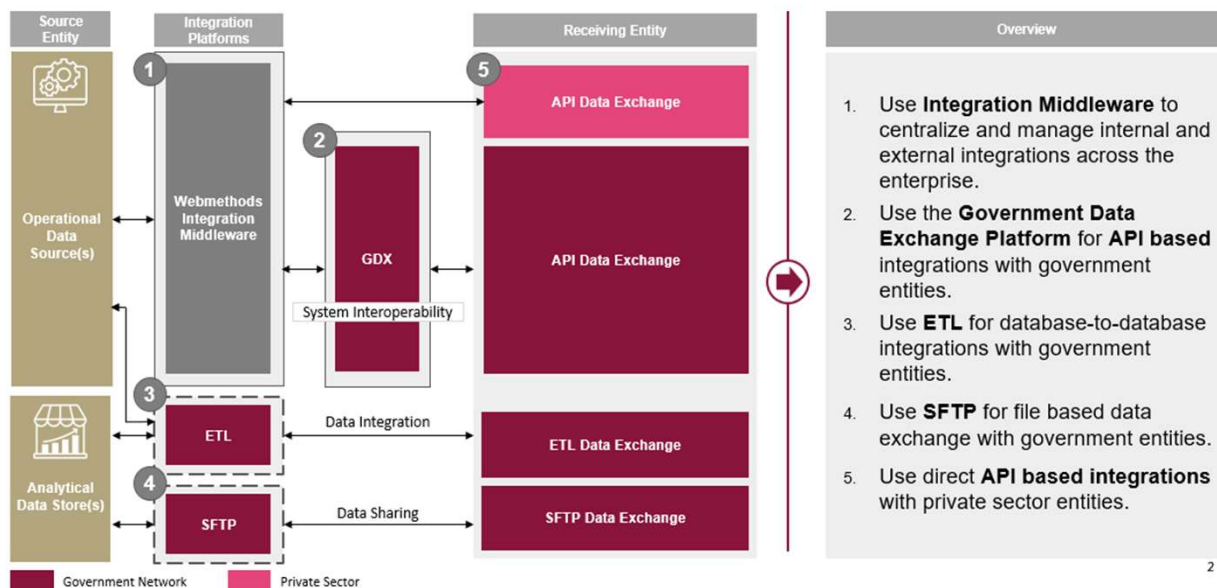
Reference the External and Internal Data Sharing Integration Layer Architecture: The Entity must reference the appropriate standardized integration architecture based on the type of data exchange (external or internal).

- i. **External data sharing:** For any cross-entity data sharing activities, the Entity should refer to the Centralized Enterprise Integration Platform – External Data Sharing architecture in the Enterprise Integration Platform Template. This diagram outlines integration methods including API-based exchanges via GDX, database sharing via ETL, and file-based transfers via SFTP. Use this reference to select the appropriate integration mechanism based on the receiving entity's platform and network capabilities.

Asset Guidance

The **Enterprise Integration Platform Template** contains the external data sharing integration layer architecture design.

Centralized Enterprise Integration Platform - External Data Sharing



- ii. **Internal Data Sharing:** For data exchange between internal departments or units within the same entity, refer to the Centralized Enterprise Integration Platform – Internal Data Sharing architecture in the Enterprise Integration Platform Template. This diagram outlines the mechanisms for intra-entity data sharing using integration middleware, ETL, and SFTP. This ensures internal data flows are consistent and governed.

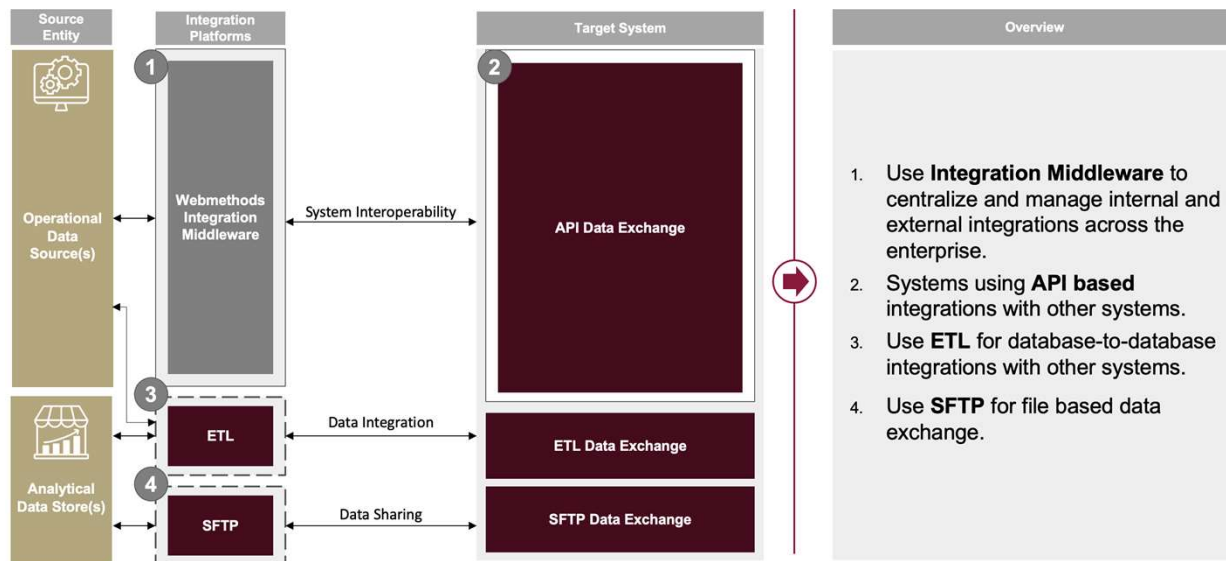
5.3.B
(2/2)

 Asset Guidance

The **Enterprise Integration Platform Template** contains the internal data sharing integration layer architecture design.

Centralized Enterprise Integration Platform - Internal Data Sharing

Illustrative



5.3.C
(1/2)

Use the Integration Method Selection Decision Tree: To determine the most appropriate integration approach, the Entity should refer to the Application and Data Integration decision tree in the Enterprise Integration Platform Template. This decision tree helps identify whether data should be exchanged using APIs or ETL based on factors such as record count, payload size, and source/target system types. Use this decision tree to make evidence-based decisions on the integration path that aligns with performance, scalability, and technical constraints.

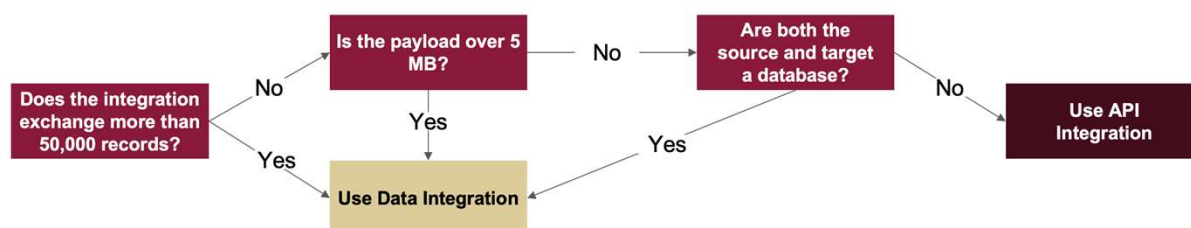
 Asset Guidance

The **Enterprise Integration Platform Template** contains the Application and Data Integration Decision Tree.

Application and Data Integration

**Application
vs Data
Integration**

ETL is better suited to data integrations, while application integrations run better on APIs. The following decision tree assists in determining which workloads are application integrations or data integrations:



5.3.D

Include Integration Layer in Target Data Architecture: The Entity must embed the integration mechanisms into its target data architecture. This includes clearly defining where integration middleware, ETL processes, and SFTP workflows fit within the architecture. Ensure the integration layer supports data orchestration and source-to-target transformation rules and that it is aligned with the overall data model and technical infrastructure.

RACI Matrix – Data Integration & Interoperability Architecture

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	Data Architecture and Analytics Section Head	Data Architect	Data Governance Specialist	Data Compliance Specialist	Data Stewards	Data Engineer
5.3.A	Develop and Maintain a Data Exchange Directory	I	A			R		R	
5.3.B	Reference the External and Internal Data Sharing Integration Layer Architecture		I	A	R	I		I	
5.3.C	Use the Integration Method Selection Decision Tree		I	A	R	C		I	
5.3.D	Include Integration Layer in Target Data Architecture	I	I	A	R	C		I	R

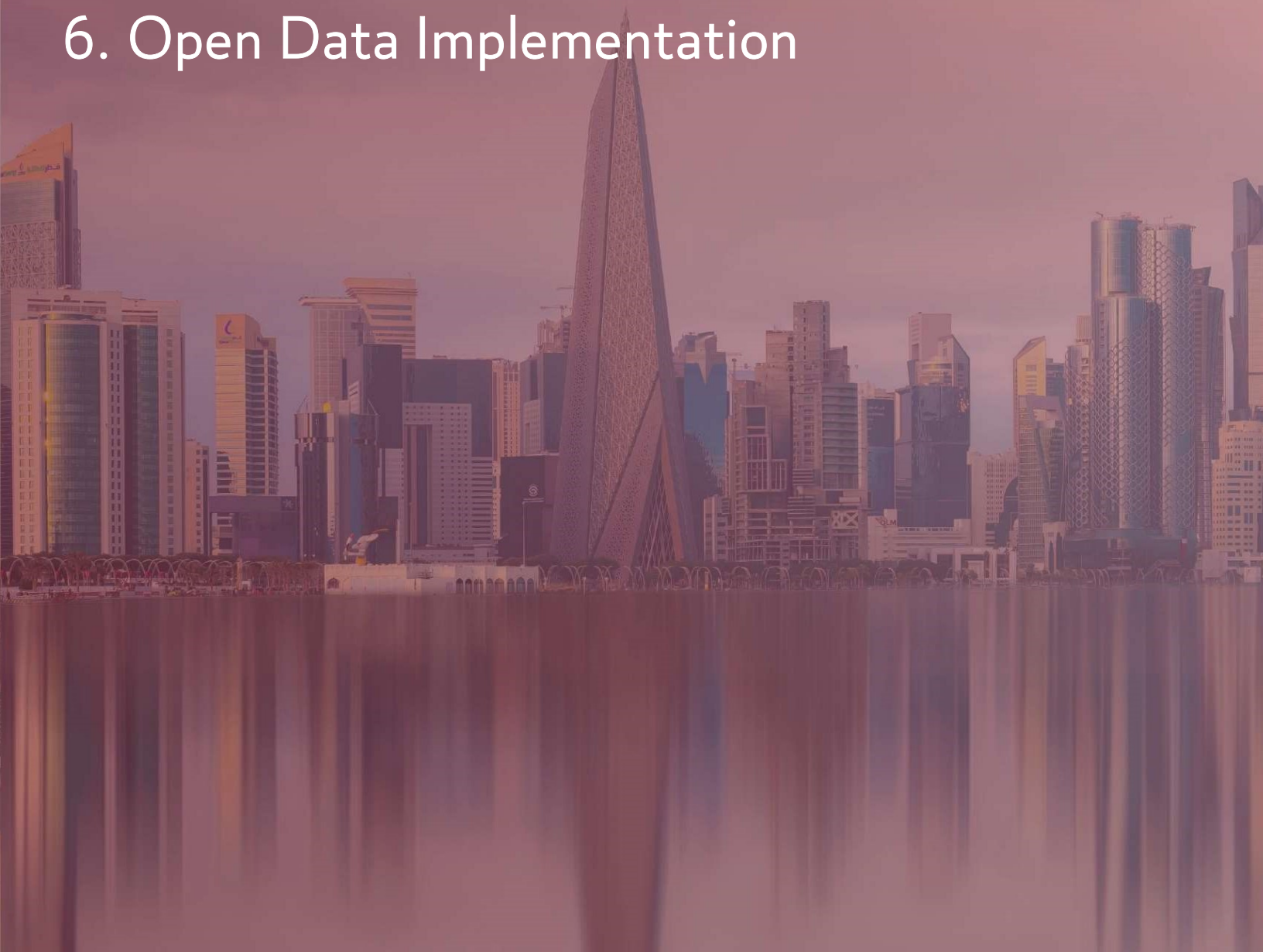
RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Develop and Integrate the Integration Layer Architecture

6. Open Data Implementation



6. Open Data Implementation

What is Open Data Implementation and why does the Entity need it?

Open Data Implementation ensures the structured execution of open data processes, publication standards, and governance mechanisms to make data accessible, usable, and compliant with national policies. It establishes clear processes for dataset identification, evaluation, and risk assessment, ensuring that only high-quality, non-sensitive data is published while maintaining security and privacy standards.

This implementation process ensures that datasets are properly formatted, metadata is standardized, and accessibility requirements are met. It supports continuous monitoring, feedback collection, and dataset updates to enhance the quality, relevance, and impact of open data initiatives. Additionally, it enforces machine-readable data formats, such as CSV, JSON, and XML, ensuring datasets are searchable, structured, and interoperable.

A well-executed Open Data Implementation improves data transparency, public engagement, and national data-driven innovation, ensuring that published datasets align with regulatory requirements and strategic objectives.

The remaining sections of this chapter will detail the activities of the below process that will guide the Entity on executing Open Data Implementation:



Guiding Principles for Open Data Implementation:

1. **Prioritize Public Benefit:** Focus on publishing datasets that maximize innovation, and value for businesses, researchers, and the public.
2. **Conduct QDTI Assessment:** Evaluate the data quality of open datasets by performing the Qatar Data Trust Index (QDTI) assessment. This ensures that datasets meet the minimum quality threshold before publication.
3. **Standardize Metadata for Discoverability:** Use structured, well-defined metadata to enhance searchability, classification, and accessibility on the Qatar Open Data Portal.
4. **Adopt Machine-Readable Formats:** Publish datasets in CSV, JSON, XML, and RDF to ensure interoperability, ease of use, and automation-friendly access.
5. **Maintain Data Security and Privacy:** Implement risk assessments, anonymization techniques, and classification controls to prevent unauthorized disclosure of sensitive information.
6. **Enable Continuous Improvement:** Establish regular review cycles, feedback mechanisms, and dataset updates to enhance data relevance and usability over time.

6.1 Open Data Processes

This section outlines the steps for executing the processes required throughout the Open Data lifecycle, starting from amending and republishing current open datasets to identifying and assessing new datasets, and gathering feedback and analyzing their performance on the Open Data Portal.

Process - Open Data Processes

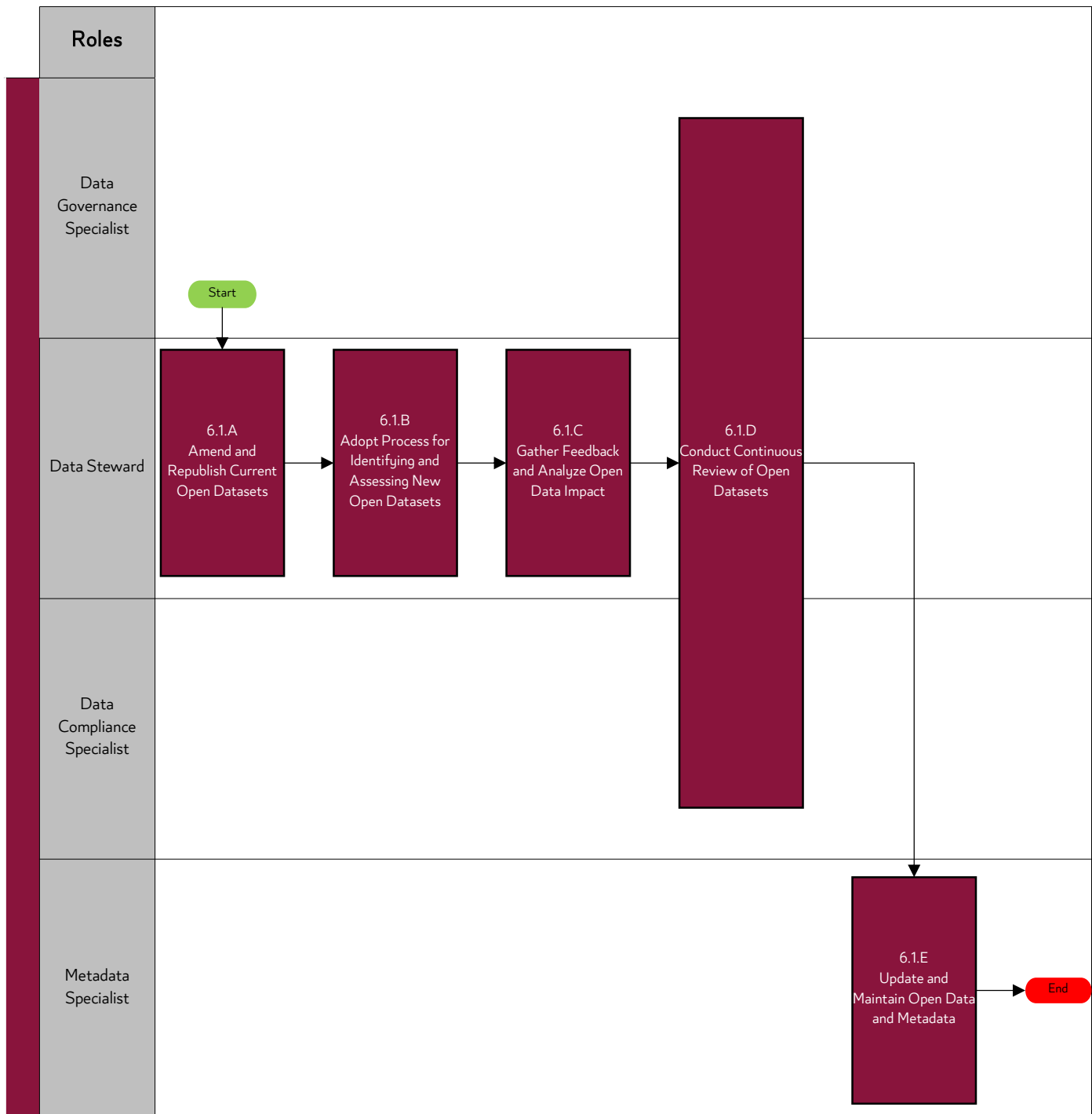


Figure 13: Process Map for Open Data Processes

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

6.1.A

Amend and Republish Current Open Datasets. The Entity shall adopt the following process to amend and republish existing open datasets that score below 85 on the QDTI:

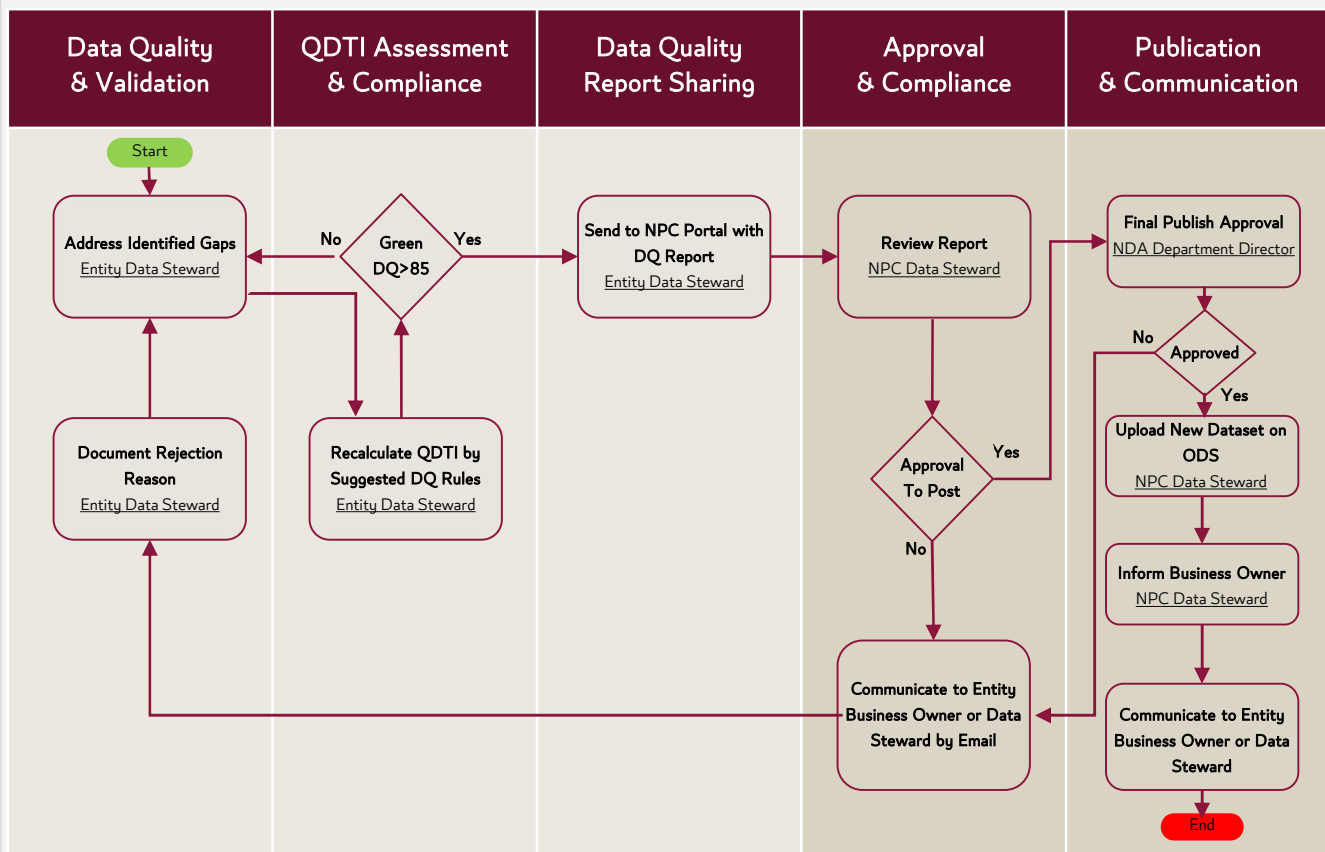


Figure 14: Open Data Process

Entity NPC

- i. **Address Identified Gaps:** Implement the initiatives identified during the open data planning phase to address the necessary gaps and raise the respective dataset's QDTI score to 85 or above.
- ii. **Recalculate QDTI Score:** Recalculate the QDTI score of the improved dataset using the same process outlined in Section 4.1.
- iii. **Submit to NPC for review:** If the dataset's QDTI score is 85 or higher, the Entity Data Steward submits the dataset, the DQ report, and Dataset Metadata to NPC for review through the designated portal. If the QDTI score is less than 85, the Entity Data Steward must address the identified data gaps and recalculate the QDTI score to verify if the new score is now 85 or higher.
- iv. **NPC Review and Approval Process.** NPC reviews the submitted DQ report and metadata:
 - a. If approved, NPC circulates the dataset internally for final publishing approval.
 - b. Once approved for publishing, NPC uploads the dataset on the National Open Data Portal and notifies the Entity Business Owner and/or Data Steward of successful publication.
 - c. If rejected, NPC communicates the decision to the Publishing Entity's Business Owner and/or Data Steward by email.
 - d. The entity must document the rejection reason and take corrective actions to address data quality or metadata issues before resubmission.

6.1.B
(1/5)

Adopt Process for Identifying and Assessing New Open Datasets: The Entity shall adopt the following open data process to identify, assess, and publish open datasets on Qatar's Open Data Portal:

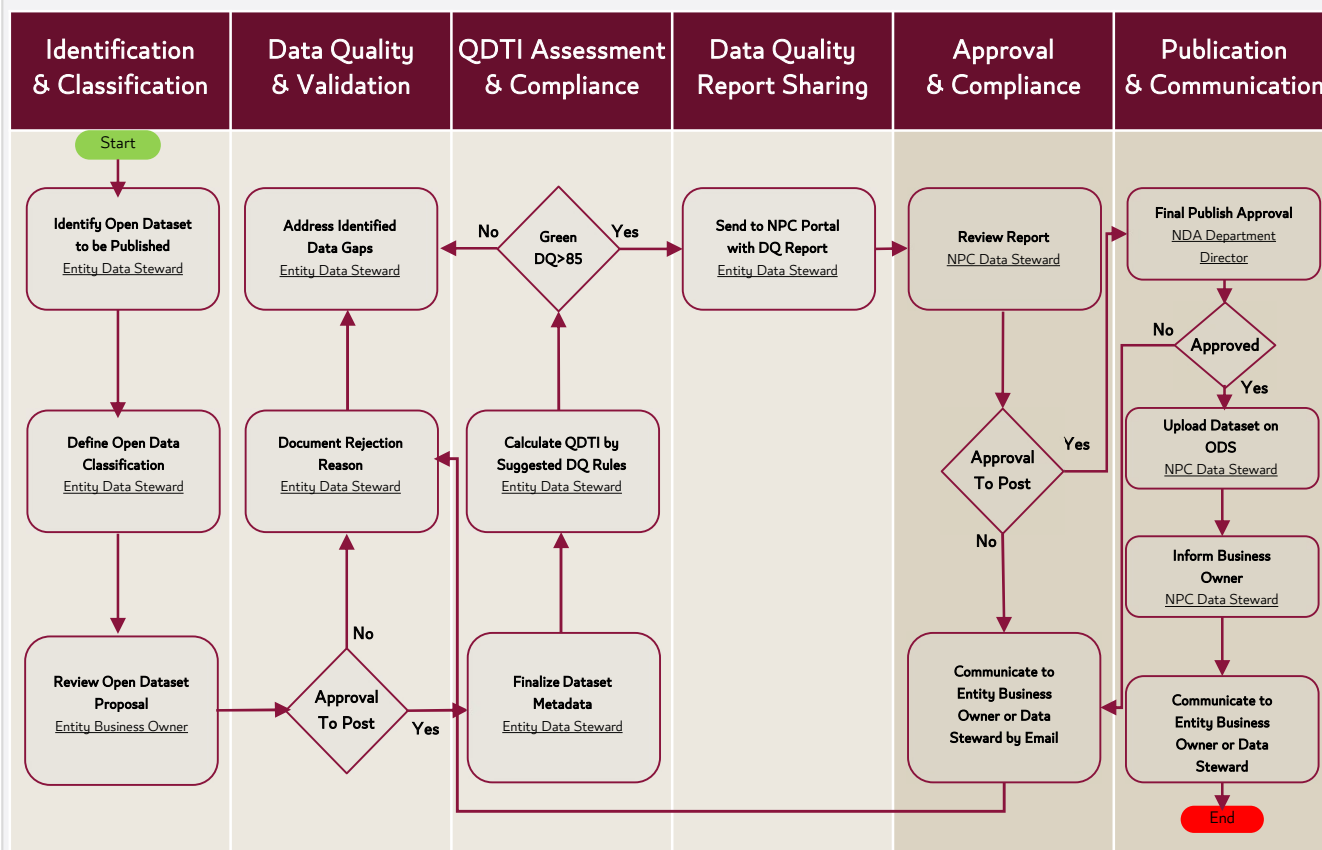


Figure 15: Process for New Open Datasets

Entity NPC

- i. **Identify Open Dataset to be published:** The Entity Data Steward identifies datasets suitable for open data publication based on their public value, relevance, and compliance with the National Open Data Policy. This may include datasets previously requested by the public or aligned with transparency goals.
- ii. **Define Open Data Classification:** The Entity Data Steward references the Entity Dataset Inventory to identify datasets classified as Public based on predefined classification categories (Top Secret, Secret, Restricted, Internal, Public).
- iii. **Review Open Dataset Proposal:** The Entity Data Steward evaluates the proposed dataset and determines whether it is suitable for open data publication by performing the following:
 - Conducts a valuation assessment to determine if publishing the dataset will add public value, enhance transparency, support innovation, or inform public decision-making.
 - Conducts a privacy and security risk analysis to assess whether combining publicly available datasets with internal data could result in unauthorized disclosures, or security threats.
 - Based on these assessments, the Data Steward either approves the dataset for further processing or denies the proposal. If denied, the decision and rationale must be documented, and necessary adjustments should be made before resubmission (if possible).

6.1.B
Cont.
(2/5)

- iv. **Finalize Dataset Metadata:** Upon approval, the Entity Data Steward finalizes metadata for the dataset, ensuring all required fields are completed according to the national data standards (this activity will be detailed in the next section).
- v. **Calculate QDTI Using Suggested DQ Rules:** The Entity Data Steward calculates the QDTI score of the Open Dataset which consists of a Data Quality Score (80% weight) and a Data Compliance Score (20% weight).

Components		Government Entities	National Indicators	Open Datasets	Data Products
 1. Data Quality Score (DQS)	<i>Data Quality Governance</i>	15%	Not applicable	Not applicable	Not applicable
	<i>Data Quality Quantitative Assessment</i>	50%	100%	80%	80%
 2. Data Compliance Score (DCS)	<i>Data Strategy & Governance</i>	10%	Not applicable	Not applicable	Not applicable
	<i>Data Enablement</i>	10%	Not applicable	Not applicable	Not applicable
	<i>Data Value Harvesting</i>	10%	Not applicable	20%	20%
	<i>Data Protection & Privacy</i>	5%	Not applicable	Not applicable	Not applicable

Figure 16: Open Data QDTI Score Breakdown

6.1.B
Cont.
(3/5)

- a. **Data Quality Score (DQS):** Open data quality is assessed through a specific set of data quality rules, which are aligned with the seven main dimensions of data quality and their sub-dimensions.

DQ Dimension	Open Data Quality Checklist (illustrative)*	Evaluation method
1. Accuracy	1. Do the values in the key and reference fields follow the expected pattern?	Percentage of records that follow an expected structure or pattern: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	2. Do the numerical values fall within specific logical and statistical ranges?	Percentage of records that fall within expected logical or statistical ranges: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
2. Completeness	3. Do all fields contain non-empty data?	Percentage of fields containing data: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	4. Is all metadata available and complete?	Percentage of metadata that is fully filled out: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
3. Consistency	5. Are fields stored in a uniform and consistent format?	Percentage of records that adhere to a standardized format: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	6. Do the values match approved reference lists such as ISO Country Codes?	Percentage of records that match an approved reference data list: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
4. Uniqueness	7. Are the values in the key fields unique without duplication?	Percentage of records that contain a unique primary key: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
5. Timeliness	8. Does the data reflect the latest available values according to the specified update cycle?	Percentage of records that fall within the specified time frame: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
6. Validity	9. Does the data match the data type specified for each field (e.g., numbers, dates)?	Percentage of records that match the specified data type for each field: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
	10. Does the data comply with business rules?	Percentage of records that comply with the specified rules: Grade 3: More than 85% Grade 2: Between 60-85% Grade 1: Less than 60%
7. Accessibility	11. Are there multiple ways to access the data (APIs, SQL queries, downloading CSV files)?	Grade 3: Provides diverse access methods (e.g., APIs, CSV/Excel) Grade 2: Limited access methods (e.g., CSV/Excel) Grade 1: Access is restricted and complex (data not available for extraction)



Key Message / Information

The score is calculated by dividing the total of the achieved scores (grades) by the maximum possible total (33, as there are 11 checklist items, each with a maximum of 3 points). The quality checklist questions are illustrative and can be adjusted as needed, as long as the data quality rules remain aligned with the main dimensions.

6.1.B
Cont.
(4/5)

- b. **Data Compliance Score:** Open datasets compliance is assessed through a checklist aligned with the specifications and sub-specifications of the Data Sharing, Integration and Interoperability domain, which falls under the Data Value Realization component.

Main dimension	Sub-dimension	Is the entity compliant?	
		Yes	no
1. Open Data Administration	1. Has a designated senior official been formally appointed within the Entity for overseeing the administration and implementation of the Open Data initiatives?		
	2. Has the Entity developed an inventory of all datasets eligible for open data publication (i.e.: Open Data Catalogue), including details about their sources, formats, and current usage?		
	3. Is the Open Data regularly updated according to a documented predefined, agreed upon frequency?		
	4. Has the Entity developed and documented a process for the regular review and identification of datasets for public release?		
2. Open Data Webpage & Plan	5. Does the Entity have a dedicated Open Data webpage that is updated regularly according to a documented predefined, agreed upon frequency?		
	6. Is the Entity's Open Data webpage linked to the National Open Data portal (if applicable)?		
	7. Has the Entity developed and published an Open Data plan on its official Open Data webpage?		
	8. Does the published plan include a "Terms of Use" statement? (terms of use for adaptation and distribution, and that explicitly allows public reuse of data at no fee)		
	9. Does the plan include specific datasets targeted for release along with a concrete roadmap/ schedule for each dataset?		
3. Data Privacy & Classification	10. Has the data that has been identified as "Public" been strictly anonymized and cleansed of any single or composite information referencing an individual residing in Qatar or outside Qatar, or a Company operating in Qatar or outside Qatar?		
4. Open Data Licensing	11. Has the Open Data been published under the Creative Commons Attribution 4.0 International License?		
	12. Is third-party data published on the Entity's Open Data webpage republished only when its original terms permit it and under the same license as the originating data (if applicable)? (e.g.: if an Entity publishes data taken from the World Bank, the Entity must use the same license the World Bank applies to its own data)		
5. Open Data Format & Metadata	13. Are all datasets made available in an open format that is platform-independent, machine-processable (e.g., CSV), and free for public reuse?		
	14. Are the datasets provided in their raw and as granular a form as possible?		
	15. Is metadata for each dataset created and published to enable effective internet search and retrieval by the public?		
6. Public Feedback/ Requests	16. Is there an active online forum on the Entity's Open Data webpage for the public to submit feedback and engage in discussions regarding Open Data?		
	17. Does the Entity's Open Data webpage provide a clearly visible, functional form or interface for submitting Information Requests online?		



Key Message / Information

The score is calculated by dividing the number of questions the entity is compliant with by the total number of questions (17 in this case).

6.1.B
Cont.
(5/5)

- c. After conducting the data quality and data compliance assessments, the overall QDTI is calculated by combining the scores of each of these two assessments and using their respective weights.

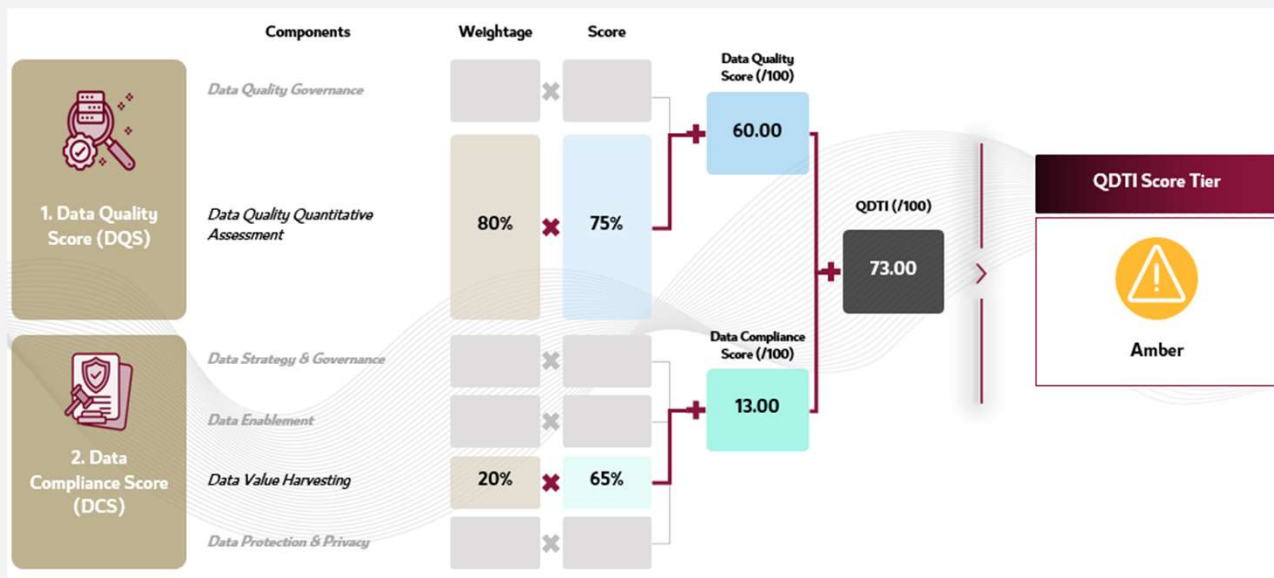


Figure 17: Illustrative QDTI Score Calculation

- vi. **Submit to NPC for review:** If the dataset's QDTI score is 85 or higher, the Entity Data Steward submits the dataset, the DQ report, and Dataset Metadata to NPC for review through the designated portal. If the QDTI score is less than 85, the Entity Data Steward must address the identified data gaps and recalculate the QDTI score to verify if the new score is now 85 or higher.



Key Message / Information

Ensure that datasets are submitted to NPC in machine-readable formats - such as CSV, JSON, XML, or RDF - to support usability and interoperability, and exclude any restricted or sensitive data.

- vii. **NPC Review and Approval Process:** NPC reviews the submitted DQ report and metadata:

- If approved, NPC circulates the dataset internally for final publishing approval.
- Once approved for publishing, NPC uploads the dataset on the National Open Data Portal and notifies the Entity Business Owner and/or Data Steward of successful publication.
- If rejected, NPC communicates the decision to the Publishing Entity's Business Owner and/or Data Steward by email.
- The entity must document the rejection reason and take corrective actions to address data quality or metadata issues before resubmission.

6.1.C

Gather Feedback and Analyze Open Data Impact: To continuously improve Open Data availability and usability, the Entity should:

- Collect user feedback and engagement metrics from the Open Data platform to understand demand and usage patterns.
- Monitor dataset access trends, including download statistics, API usage rates, and stakeholder inquiries.
- Identify gaps in published datasets by analyzing user requests and industry benchmarks to expand the Open Data offering.
- Engage with the data user community, including businesses, researchers, and government agencies, to assess how Open Data is contributing to decision-making and innovation.

6.1.D

Conduct Continuous Review of Open Datasets: To ensure datasets meet regulatory requirements and remain relevant, the Entity should:

- Regularly audit published datasets to confirm compliance with the Open Data Policy.
- Verify security compliance by reassessing published data for any potential privacy risks or emerging vulnerabilities.
- Update datasets to reflect changes in data collection methods, governance policies, or regulatory requirements.

6.1.E

Update and Maintain Open Data and Metadata: To keep Open Data valuable and up to date, the Entity should:

- Regularly refresh datasets based on predefined update cycles (e.g., real-time, daily, weekly, monthly, or annually).
- Ensure metadata updates when dataset structure, classification, or descriptions change.
- Implement change management processes to document and communicate updates, ensuring data users are informed of modifications.

RACI Matrix – Open Data Processes

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	Data Governance Specialist	Data Compliance Specialist	Metadata Specialist	Data Owner	Data Steward	Data Quality Specialist
6.1.A	Amend and Republish Current Open Datasets	I	A				C	R	C
6.1.B	Adopt Process for Identifying and Assessing New Open Datasets	I	A	C	C	C	C	R	
6.1.C	Gather Feedback and Analyze Open Data Impact		A	C	C	C	C	R	
6.1.D	Conduct Continuous Review of Open Datasets		A	R	R	I	I	R	
6.1.E	Update and Maintain Open Data and Metadata		A	I	I	R	I	C	

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Develop and Document Open Data Processes

6.2 Open Data Format & Metadata

This section outlines the structured steps to identify and document the metadata necessary within the Open Dataset to easily identify, describe and search for them once published and to standardize formats in which the datasets are published.

Process - Open Data Format & Metadata

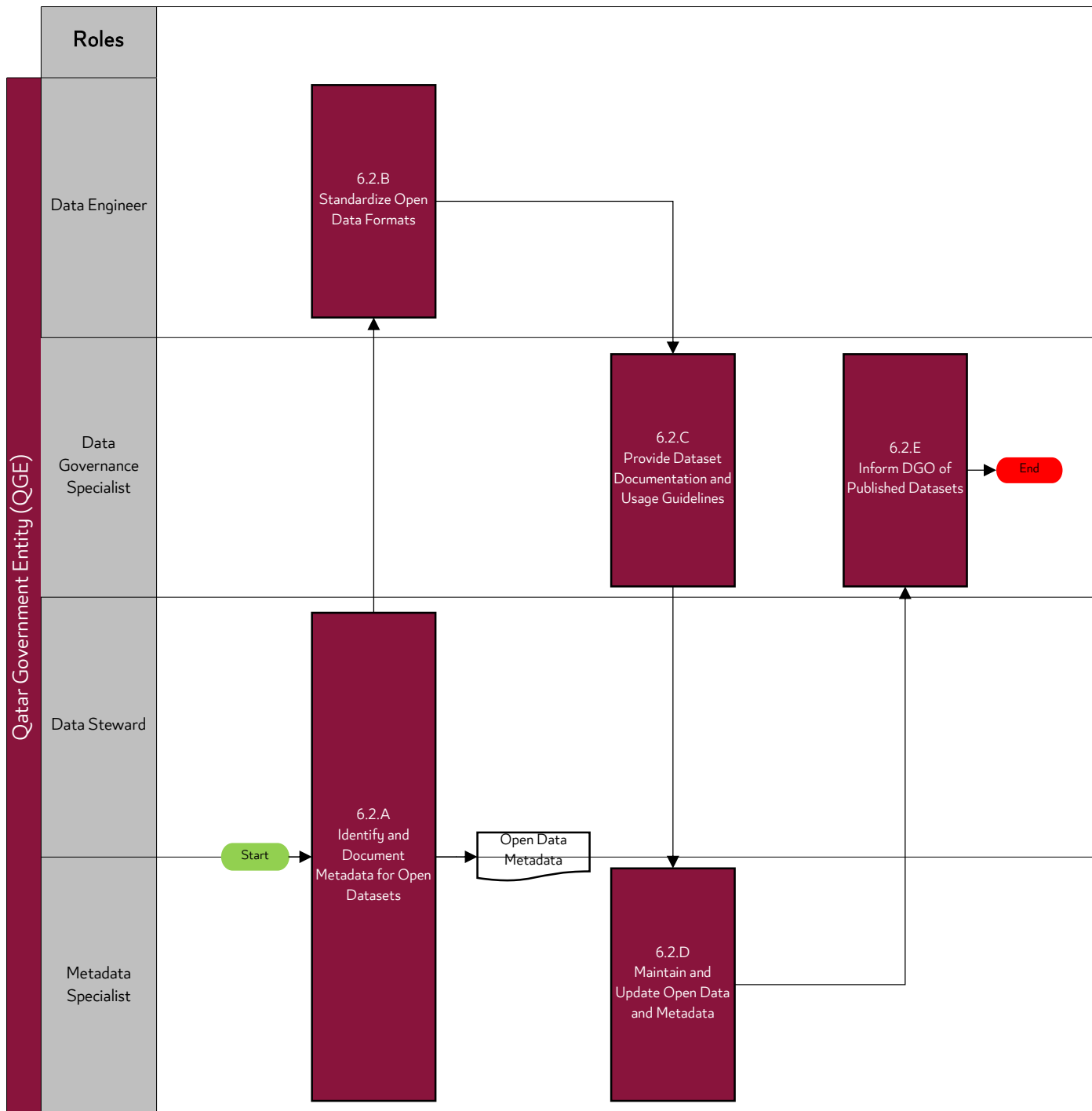


Figure 18: Open Data Format & Metadata Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

6.2.A

Identify and Document Metadata for Open Datasets. Ensure that all published datasets contain comprehensive metadata to facilitate searchability, classification, and accessibility by populating the Open Data Metadata Template for all current and future Open Datasets.

Asset Guidance

The **Open Data Metadata Template** includes the Open Dataset Metadata Template Sheet and the Attributes Metadata Template Sheet, which the Entity can use to document the required metadata and provide Open Data Platform users with the necessary information to effectively utilize the datasets.

Illustrative

 Open Dataset Metadata	
The following table enables the Entity to register and manage metadata for its open datasets.	

Field	Description
Dataset ID	A unique identifier for the dataset, used to link metadata and attribute information.
Dataset Name	The internal name or code of the dataset, used for identification and referencing.
Title	The readable title of the dataset that describes its contents at a glance.
Description	A brief narrative explaining the purpose, content, and coverage of the dataset.
Themes	Categories or subject areas the dataset relates to (e.g., Health, Finance, Education).
Keywords	A list of searchable tags or terms that improve discoverability of the dataset.
Publisher	The official name of the entity responsible for publishing the dataset.
Contact Information	The name, email, or phone number of the department responsible for the dataset.
Geographical Coverage	The geographical area(s) covered by the dataset (e.g., State of Qatar).
Temporal Coverage	The time period the dataset spans, expressed as a range (e.g., 2008–2019).
Update Frequency	How often the dataset is updated (e.g., Annual, Monthly, Real-Time).
Data Source	The URL or reference that indicates the original source system or portal from which the dataset originates.

Dataset ID	Dataset Name	Title	Description	Themes	Keywords

Publisher	Contact Information	Geographical Coverage	Temporal Coverage	Update Frequency	Data Source

Illustrative

 Attribute Metadata	
The following table enables the Entity to register and manage metadata for the attributes within each open dataset.	

Field	Description
Dataset ID	The unique identifier of the dataset this attribute belongs to (links to the Open Dataset Metadata Template).
Attribute Name	The name of the individual data field or column within the dataset.
Description	A brief explanation of what the attribute represents and its significance.
Data Type	The type of data the attribute contains (e.g., String, Integer, Decimal, Date).

Dataset ID	Attribute Name	Description	Data Type

6.2.B

Standardize Open Data Formats: To ensure interoperability and ease of use, datasets must be published in structured, machine-readable formats. The Entity should:

- Ensure datasets are available in standardized formats such as CSV, JSON, XML, and RDF.
- Implement naming conventions for datasets and attributes to prevent inconsistencies.
- Support multi-format downloads where applicable, enabling access data in various formats.

6.2.C

Provide Dataset Documentation and Usage Guidelines: Each published dataset must be accompanied by clear documentation to guide users on data interpretation, application, and integration. This includes:

- i. Structuring documentation through core metadata fields.
- ii. Ensuring attribute names and descriptions are properly defined for end users.
- iii. Providing a dataset usage guide with examples, context, and recommended use cases.

6.2.D

Maintain and Update Open Data and Metadata: To ensure Open Data remains accurate and relevant, the Entity must establish a structured process for metadata and dataset updates. This involves:

- i. Regularly reviewing and updating dataset metadata to reflect any changes.
- ii. Tracking dataset publication and update history for version control.
- iii. Ensuring alignment between dataset updates and metadata revisions, particularly for fields such as “Date Last Updated” and “Update Frequency”.

6.2.E

Inform DGO of Published Datasets: After updating datasets, the Entity must inform the Data Governance Office (DGO) to ensure oversight, and compliance by providing a summary of newly published or updated datasets, including metadata updates.

RACI Matrix – Open Data Format & Metadata

Indicative

Sr No.	Activity	DGO	Data Management and Security Director	Data Management and Governance Section Head	Data Governance Specialist	Data Compliance Specialist	Metadata Specialist	Data Owner	Data Steward	Data Engineer
6.2.A	Identify and Document Metadata for Open Datasets		I	A	C		R	C	R	
6.2.B	Standardize Open Data Formats		I	A	I		C			R
6.2.C	Provide Dataset Documentation and Usage Guidelines		I	A	R				C	
6.2.D	Maintain and Update Open Data and Metadata		I	A			R	C	C	
6.2.E	Inform DGO of Published Datasets	I	I	A	R		C		C	

RACI Matrix Legend: R: Responsible A: Accountable C: Consulted I: Informed

Based on this Activity, the Entity can



Document and Update Open Data Metadata

A city skyline at sunset, featuring a prominent, modern building with a sharp, triangular peak in the center. The sky is a mix of orange, pink, and purple hues, and the city lights are visible in the foreground. The text "7. Data Sharing, Integration & Interoperability Performance Management" is overlaid in white.

7. Data Sharing, Integration & Interoperability Performance Management

7. Data Sharing, Integration & Interoperability Performance Management

What is Data Sharing, Integration & Interoperability Performance Management, and why does the Entity need it?

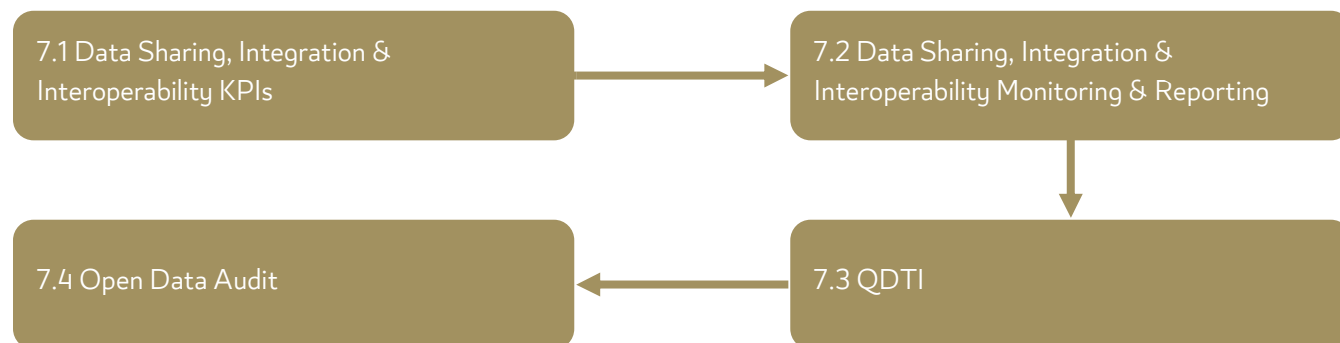
Data Sharing, Integration & Interoperability Performance Management is the process of establishing and monitoring Key Performance Indicators (KPIs) to assess the efficiency, reliability, and effectiveness of data sharing, integration, and interoperability initiatives within the Entity. This includes tracking data-sharing request volumes, processing times, system performance metrics, and the overall impact of data-sharing agreements.

The goal is to ensure seamless and efficient data exchange, monitor performance bottlenecks, and enhance troubleshooting capabilities to support continuous improvement. By monitoring latency and transfer rates, the Entity can assess the effectiveness of its data integration efforts and make data-driven improvements to optimize workflows and decision-making processes.

Performance management also involves automated alerts for troubleshooting data pipeline issues, ensuring that data flows smoothly across systems. Additionally, open data auditing ensures that data published as open data complies with legal, contractual, and governance requirements.

Data Sharing, Integration & Interoperability Performance Management is essential because it Improves efficiency by tracking performance metrics and identifying areas for optimization, Ensures compliance with national data policies and internal governance frameworks, Enhances transparency by monitoring data-sharing activity and reporting on key indicators, Supports proactive troubleshooting with automated alerts to prevent data pipeline failures, and Facilitates informed decision-making through continuous evaluation of data-sharing performance.

The remaining sections of this chapter will detail the activities of the below processes that will guide the Entity in executing Data Sharing, Integration & Interoperability Performance Management:



Guiding Principles for Data Sharing, Integration & Interoperability Performance Management:

1. **Define and Monitor Key Performance Indicators (KPIs):** Track data-sharing efficiency, reliability, and effectiveness through KPIs like transfer rates, latency, and request processing times to drive continuous improvements.
2. **Ensure Real-Time Monitoring, Reporting & Alerts:** Implement dashboards and automated alerts to detect inefficiencies, failures, and bottlenecks, ensuring seamless data integration.
3. **Enhance Troubleshooting with Automated Alerts:** Configure real-time alerting mechanisms to detect failures or performance issues in data pipelines and integration workflows, ensuring uninterrupted data sharing.
4. **Maintain Compliance, Audit & Data Quality:** Implement audits, validation rules, and metadata checks to meet legal, policy, and quality standards for consistent and trustworthy data sharing.

7.1 Data Sharing, Integration & Interoperability KPIs

As part of the Data Sharing, Integration & Interoperability KPIs specification, the Entity shall establish Key Performance Indicators (KPIs) to measure and report on the efficiency, reliability, and effectiveness of data-sharing, integration, and interoperability initiatives. At a minimum, the following KPIs shall be tracked:

- Data transfer rate between systems/applications
- Latency between data sources and data targets
- Number of data-sharing requests received
- Number of data-sharing requests accepted/denied
- Number of data-sharing requests sent
- Number of ongoing data-sharing agreements
- Average duration of the data-sharing request evaluation process (days)

7.1.A

Establish Key Performance Indicators (KPIs) for Data Sharing, Integration & Interoperability:

Identify and define KPIs that will measure the performance and impact of data-sharing and integration activities in line with the National Data Standards. Once KPIs are defined, the Entity shall set target values for each KPI then develop reports to track performance over time, and continuously refine KPIs to align with evolving data-sharing needs and system capabilities.

Asset Guidance

The **Data Management KPIs Register Template** includes a table that provides a brief overview of identified KPIs. The Entity can use this template to define each KPI, along with its calculation methodology, target value, and current status.

Illustrative

Data Management KPIs Register Template								
The following table is a template containing what is needed to provide a brief overview of the performance of data management initiatives								
Field	Description							
KPI ID	A unique identifier assigned to each Key Performance Indicator (KPI)							
KPI Name	A short, descriptive name that summarizes what the KPI measures							
KPI Type	Operational or Strategic KPI (if applicable)							
Calculation Methodology	The formula / approach (if any) used to calculate the KPI value							
Target Value	The predefined value or benchmark to achieve for the KPI							
Last Updated Date	The date when the KPI's current value was last recorded or updated							
Status	On Track/Off Track							
Comments	Additional notes or explanations regarding the KPI's performance							
Owner	Outlines whether the business or IT is the owner of the KPI							
KPI ID	KPI Name	KPI Type (if applicable)	Calculation Methodology	Target Value	Last Updated Date	Status	Comments	Owner



Key Message / Information

The Entity must establish a clear process for reviewing and updating Data Sharing & Integration KPIs to ensure they remain relevant, measurable, and aligned with strategic goals. This process should include regular KPI evaluations, stakeholder feedback integration, and assessing effectiveness in tracking data-sharing efficiency. By periodically refining these KPIs, the Entity can enhance interoperability, improve decision-making, and support continuous improvement in data-sharing processes.

RACI Matrix – Data Sharing, Integration & Interoperability KPIs

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	Data Governance Specialist	Data Owner	Data Steward
7.1.A	Establish Key Performance Indicators (KPIs) for Data Sharing, Integration & Interoperability	I	A	R	C	C

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Establish Data Sharing Integration & Interoperability KPIs

7.2 DSII Monitoring & Reporting

This activity will guide the Entity through the steps to establish monitoring and reporting mechanisms for Data Sharing, Integration and Interoperability, ensuring compliance with governance standards and performance objectives. The Entity will implement continuous monitoring mechanisms to track key performance indicators (KPIs) on a quarterly basis, enabling consistent oversight of Data Sharing, Integration and Interoperability effectiveness.

Process – DSII Monitoring & Reporting

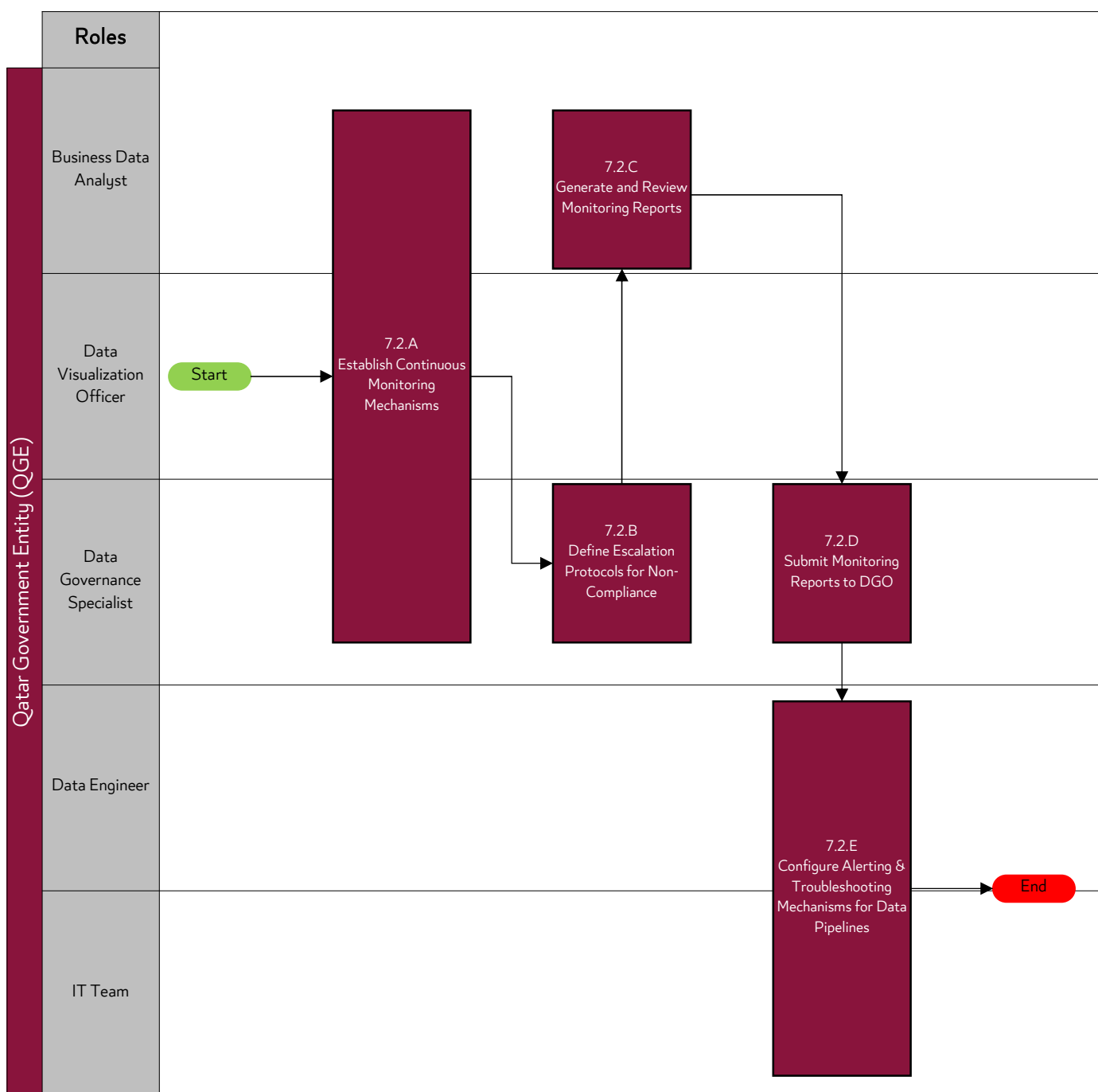


Figure 19: DSII Monitoring & Reporting Monitoring and Reporting Process Map

Legend: Process Step Decision Process Start Process End Document Off-Page Reference

7.2.A

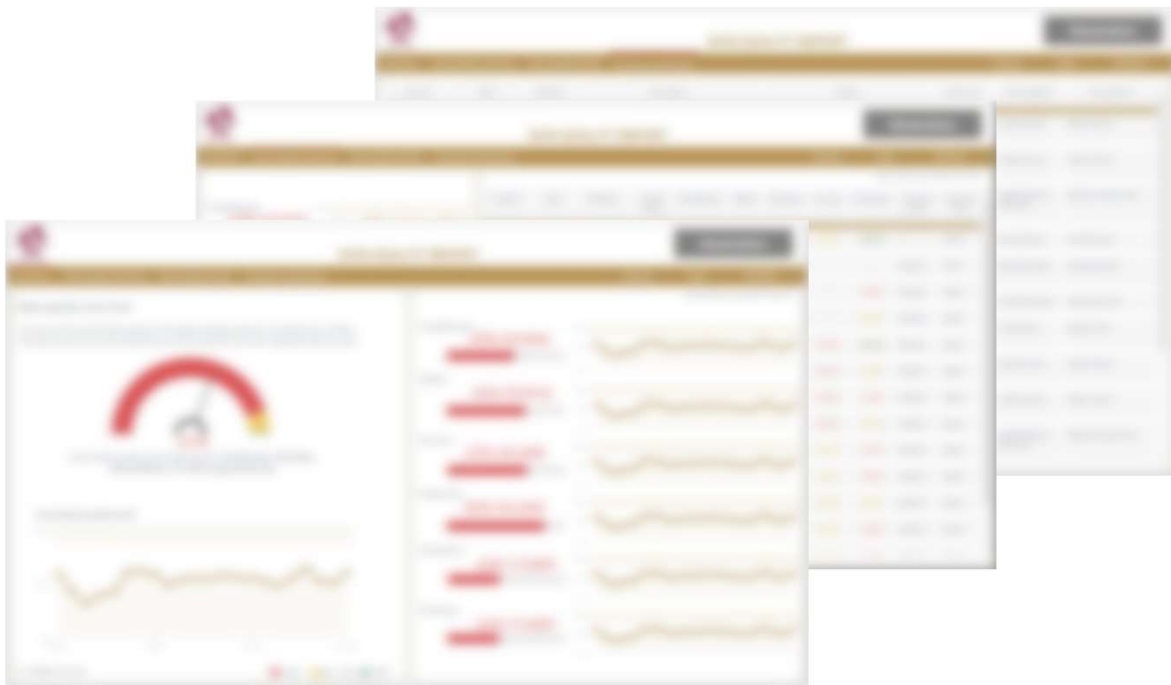
Establish Continuous Monitoring Mechanisms: The Entity must implement systematic monitoring processes to track the performance and compliance of data sharing, integration, and interoperability activities. The Entity should:

- Set up a quarterly monitoring schedule, ensuring that the data sharing, integration, and interoperability KPIs are reviewed regularly to determine progress.
- Leverage dashboards and reports to visualize trends, highlight deviations, and track progress over time.
- Ensure monitoring mechanisms align with the Entity's governance frameworks, supporting data-driven decision-making

 Asset Guidance

A **Data Sharing, Integration, and Interoperability Monitoring Dashboard** provides visibility into the performance, quality, and compliance of data exchange processes. This illustrative example can guide Entities in designing dashboards that monitor the ongoing effectiveness and alignment of data sharing and integration practices with governance and operational expectations.

Illustrative



7.2.B

Define Escalation Protocols for Non-Compliance: To maintain governance and accountability, the Entity must develop structured escalation procedures to address performance deviations and non-compliance issues. The Entity should:

- i. Define clear thresholds for acceptable performance, ensuring that deviations from data sharing, integration, and interoperability standards trigger corrective actions.
- ii. Establish a tiered escalation framework, specifying who is responsible for reviewing, investigating, and resolving issues at each level.
- iii. Assign the Data Committee as the oversight body, ensuring that all escalations related to data sharing, integration, and interoperability compliance are reviewed and addressed.
- iv. Integrate escalation workflows into governance processes, ensuring that corrective actions are documented and monitored.

7.2.C

Generate Monitoring Reports: To provide insights into data sharing, integration, and interoperability performance, the Entity must generate structured monitoring reports that summarize KPIs, compliance status, and governance adherence. The Entity should:

- Compile monitoring reports on a quarterly basis, summarizing KPI performance.
- Include trend analysis to assess performance improvements or risks
- Highlight compliance violations, unresolved gaps, or areas requiring immediate intervention, enabling proactive decision-making.
- Ensure transparency in reporting, making reports accessible to leadership, data governance teams, and IT leadership.

7.2.D

Submit Monitoring Reports to DGO: The Entity shall submit data-sharing and integration monitoring reports to the National Data Governance Office (DGO) to ensure transparency, accountability, and alignment with national data standards. Reports must be submitted on a quarterly basis using standardized formats and should highlight key performance indicators, trends, and issues identified through ongoing monitoring efforts. All submissions must be logged and tracked to support governance oversight, compliance verification, and audit readiness.

7.2.E
(1/2)

Configure Alerting & Troubleshooting Mechanisms for Data Pipelines: The Entity shall implement a structured alerting and troubleshooting framework to monitor, detect, and resolve failures across data-sharing and integration pipelines. This ensures continuous data flow, system stability, and compliance with governance requirements.

i. **Automated Alerts & Monitoring**

- a. Configure real-time alerting mechanisms to detect pipeline failures, anomalies, or threshold breaches related to latency, request drops, or security violations.
- b. Set up automated notifications to immediately inform IT teams and governance stakeholders of critical issues requiring attention.
- c. Maintain a centralized alert log to support incident tracking, resolution status, and compliance monitoring.

A

7.2.E
Cont.
(2/2)

A

ii. Troubleshooting & Root Cause Analysis (RCA)

- Establish a formal process for diagnosing root causes of pipeline issues using structured techniques such as Five Whys or Fault Tree Analysis.
- Document recurring failure patterns and system vulnerabilities to support proactive remediation.
- Implement corrective and preventive actions (CAPA) to resolve underlying issues and optimize pipeline performance over time.

RACI Matrix - DSII Monitoring & Reporting

Indicative

Sr No.	Activity	DGO	Data Committee	Data Management and Security Director	Data Management and Governance Section Head	Data Architect	Business Data Analyst	Data Visualization Officer	Data Governance Specialist	Data Engineer	IT Team
7.2.A	Establish Continuous Monitoring Mechanisms		I	I	A	C	R	R	R		
7.2.B	Define Escalation Protocols for Non-Compliance		I	I	A	C			R		
7.2.C	Generate Monitoring Reports			I	A	C	R		C		
7.2.D	Submit Monitoring Reports to DGO	C		I	A	C			R		
7.2.E	Configure Alerting & Troubleshooting Mechanisms for Data Pipelines			I	A	C				R	R

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Generate KPI Dashboards



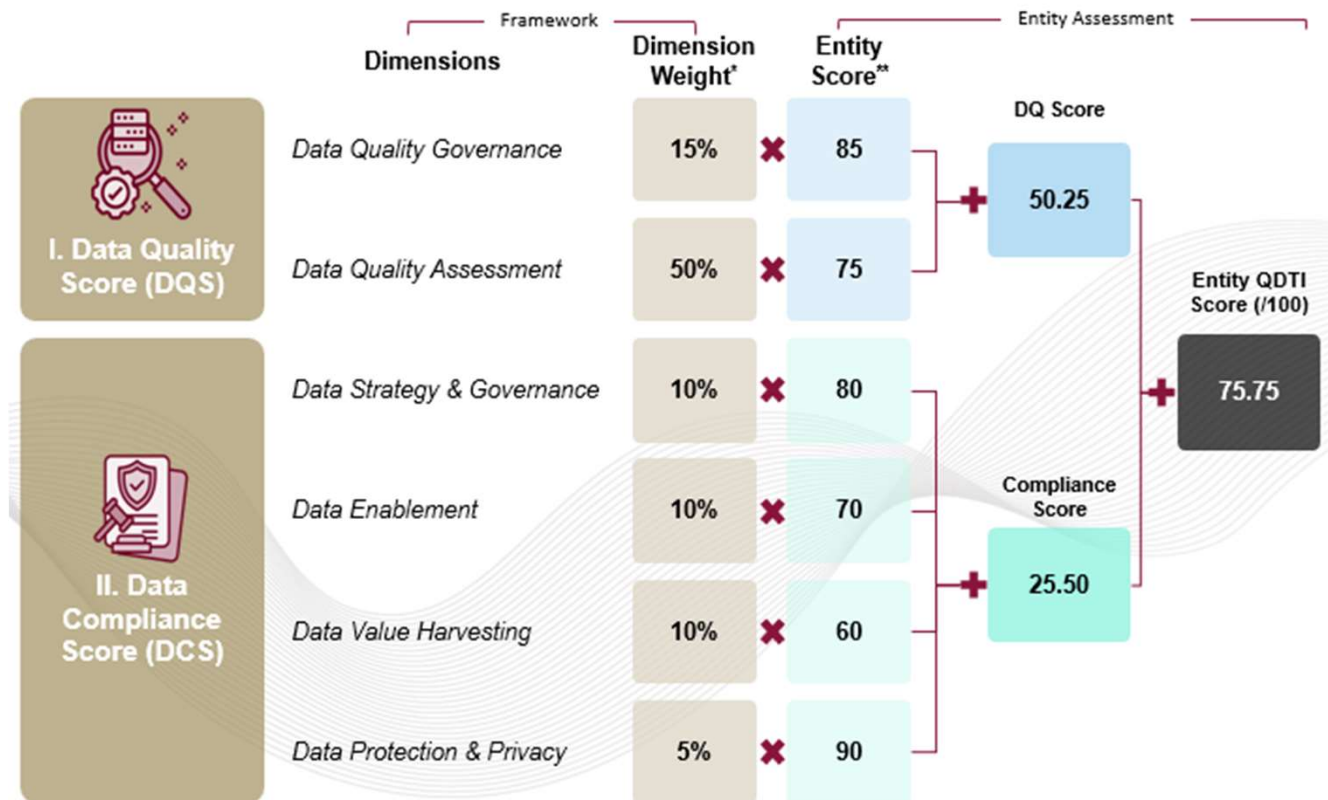
Generate Monitoring Reports

Legend: Capability Level **A** Advanced

7.3 QDTI

The Qatar Data Trust Index (QDTI) is designed to measure and enhance data integrity across national entities by promoting adherence to governance standards and ensuring the accuracy, reliability, and responsible management of data. This initiative aims to build trust and support a robust digital economy. The overall QDTI score is derived from two dimensions: the Data Quality Score (DQS) and the Data Compliance Score (DCS), which together combine to determine the Entity's QDTI score.

This section outlines the steps needed to gather the necessary information for calculating the DCS.



***Note:** The sum of the weights across all dimensions should add up to 100%

****Note:** This score is calculated by computing the weighted average score of all the sub-dimensions under each respective Dimension (scores are on a scale of 0 to 100)

Figure 20: Illustrative QDTI Scoring Methodology for an Entity

7.3.A

Initiate Data Sharing Integration & Interoperability Compliance Assessment: The Data Management and Governance Section Head assigns the Data Compliance Specialist to oversee the assessment process. The specialist is responsible for managing the evaluation of the Entity's adherence to the National Data Sharing, Integration & Interoperability Standards.



Key Message / Information

The Data Sharing, Integration & Interoperability Domain falls under the Data Impact Realization Dimension in the National Data Management Framework and, consequently, within the QDTI Dimension.

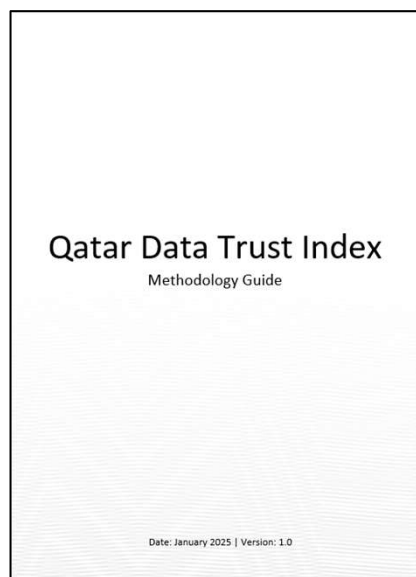
7.3.B

Conduct Data Sharing, Integration & Interoperability Assessment: Initiate the self-assessment to evaluate adherence to the National Data Sharing, Integration & Interoperability Domain Standards. This assessment will ensure compliance and accountability while identifying areas for improvement.

Asset Guidance

The **Qatar Data Trust Index Methodology Guide** can be leveraged to guide the Entity through the steps required to conduct the self-assessment.

Illustrative



Asset Guidance

The **QDTI Assessment Template** can be used to document compliance with the National Data Standards. This template is intended for use prior to the DGO launching the self-assessment on its platform to calculate the overall QDTI Score.

Illustrative

Domain	Control	Control Description
DQM	DQM.1.1.1 Data Quality Policy	As part of the Data Quality Policy control, the Entity shall create and maintain an enterprise-wide Data Quality Management Policy...
DQM	DQM.1.1.2 Data Quality Policy	As part of the Data Quality Policy control, the Entity shall publish and distribute a Data Quality Management Policy...
DQM	DQM.1.1.3 Data Quality Planning	As part of the Data Quality Planning control, the Entity shall perform initial data quality profiling for the identified Critical Data Elements (CDEs)...
DQM	DQM.1.1.4 Data Quality Planning	As part of the Data Quality Planning control, the Entity shall develop a data quality plan aligned with its data strategy and profiling results...

Specification	Control Specification	Capability Level	Compliance
DQM.1.1.1.1 Data Quality Policy Creation	The Entity shall create a data quality policy in alignment with the NDQAF published by the NPC...	Foundational	Compliant
DQM.1.1.2.1 Data Quality Policy Publication	The Entity shall publish a data quality policy....	Foundational	Compliant
DQM.1.1.3.1 Initial Data Quality Profiling	The Entity shall identify CDEs and perform initial data quality profiling for the identified CDEs....	Foundational	Compliant
DQM.1.1.4.1 Data Quality Plan Design	Based on the initial data profiling results, the Entity shall develop a data quality plan in alignment with the Entity's data strategy...	Foundational	Compliant



Key Message / Information

The DGO will launch the self-assessment on its platform and will provide toolkits and host workshops to guide entities through the self-assessment process during the first year.

7.3.C

Submit Data Sharing, Integration & Interoperability Score to DGO: Submit the Data Sharing, Integration & Interoperability Compliance Score to the DGO for evaluation



Key Message / Information

The DGO will calculate the Entity's overall Qatar Data Trust Index (QDTI) score only after the Entity has completed both the Data Quality Score (DQS) assessment and the required self-assessments for all other data management domains to determine the Data Compliance Score (DCS). Once all assessments are completed, the DGO will aggregate the compliance scores across domains to finalize the DCS, which will then be combined with the DQS to determine the Entity's overall QDTI score.

RACI Matrix - QDTI

Indicative

Sr No.	Activity	DGO	Data Management & Security Director	Data Management and Governance Section Head	Data Compliance Specialist	Data Governance Specialist
7.3.A	Initiate Data Sharing, Integration & Interoperability Compliance Assessment		I	A	R	
7.3.B	Conduct Data Sharing, Integration & Interoperability Assessment		I	A	R	C
7.3.C	Submit Data Sharing, Integration & Interoperability Score to DGO	I	I	A	R	I

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Calculate DSII Compliance Score

7.4 Open Data Audit

The Open Data Audit ensures that publicly available datasets comply with legal, policy, and contractual obligations as defined in the National Data Standards. The Entity must conduct systematic and periodic audits to verify that open data aligns with governance policies, remains secure, and is accessible while maintaining transparency.

Through this process, the Entity shall:

- Verify dataset compliance with the Open Data Policy (2014) and national data-sharing regulations.
- Ensure that no legal, policy, or contractual restrictions exist before data is made publicly available.
- Assess and document data accessibility, quality, and integrity for continuous improvement.

The Open Data Audit provides a structured approach to reviewing the publication, maintenance, and governance of open datasets, ensuring ongoing alignment with national data standards.

Process - Open Data Audit

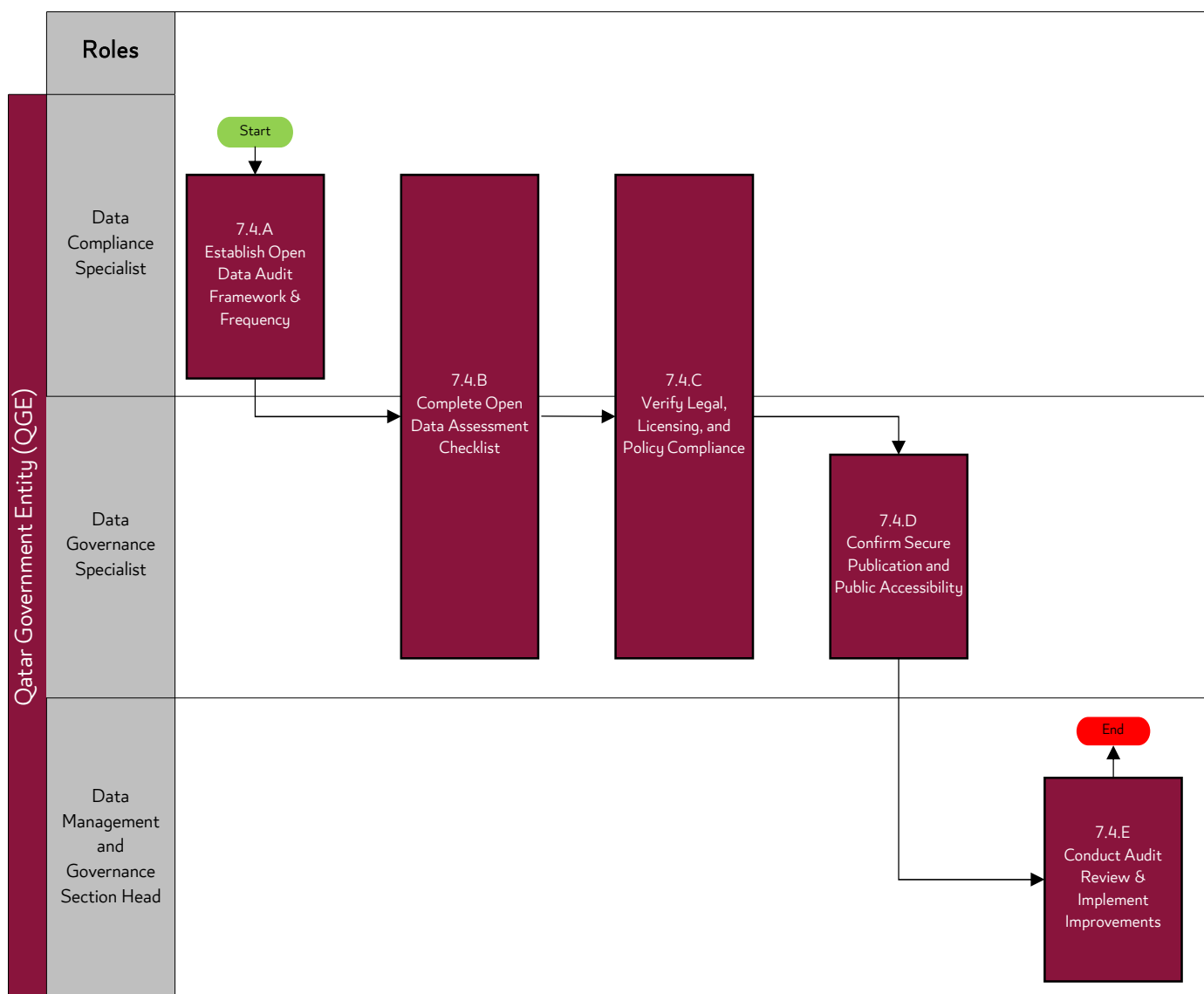


Figure 21: Open Data Audit Process Map

7.4.A

Establish Open Data Audit Framework & Frequency: The Entity shall define a structured audit approach, ensuring compliance with the Qatar National Open Data Policy. This involves determining the scope, frequency, and methodology of audits to ensure that published datasets remain aligned with legal and regulatory requirements. Responsibilities and governance structures are established to oversee the auditing process.

7.4.B

Complete Open Data Assessment Checklist: Before publishing any dataset:

- i. Complete the Open Data Assessment Checklist as defined by the Qatar Open Data Policy (2014).
- ii. Evaluate the dataset against quality, accessibility, legal, and security criteria.
- iii. Confirm that the dataset does not contain any restricted, personal, or sensitive information.

**Key Message / Information**

A signed and approved copy of the completed checklist must be maintained for future reference or audits.

7.4.C

Verify Legal, Licensing, and Policy Compliance: Review each dataset to ensure compliance with applicable privacy laws, licensing terms, and contractual obligations and confirm the following:

- i. Proper open data licensing is applied.
- ii. No personally identifiable information (PII) is included.
- iii. All governance and usage restrictions are clearly documented.

7.4.D

Confirm Secure Publication and Public Accessibility: The Entity ensures that datasets are securely published, machine-readable, and accessible to the public. This involves verifying that metadata is properly defined, datasets are available in open formats, and appropriate security controls are in place to prevent unauthorized modifications.

7.4.E

Conduct Audit Review & Implement Improvements: Regular audits are conducted to assess the quality, compliance, and accessibility of published datasets. Findings from these audits are documented, and corrective actions are implemented to improve data governance, publication processes, and open data management. Continuous monitoring ensures alignment with national standards and evolving best practices.

RACI Matrix – Open Data Audit

Indicative

Sr No.	Activity	Data Management and Security Director	Data Management and Governance Section Head	Data Compliance Specialist	Data Governance Specialist	Data Quality Specialist	Metadata Specialist	Data Steward	Data Owner
7.4.A	Establish Open Data Audit Framework & Frequency	I	A	R	C				C
7.4.B	Complete Open Data Assessment Checklist	I	A	R	R	C	C		C
7.4.C	Verify Legal, Licensing, and Policy Compliance	I	A	R	R				
7.4.D	Confirm Secure Publication and Public Accessibility	I	A	C	R			C	
7.4.E	Conduct Audit Review & Implement Improvements	A	R	C	C				

RACI Matrix Legend: **R:** Responsible **A:** Accountable **C:** Consulted **I:** Informed

Based on this Activity, the Entity can



Establish Open Data Audit

8. Appendix



8.1 Templates and Frameworks

Asset No.	Asset Name	Description	File Name
1	Data Sharing, Integration & Interoperability Policy Template	Template containing a sample table of contents the Entity can refer to when drafting its policy.	NPC_DGO_QDKC_DSII_Data Sharing, Integration & Interoperability Policy Template
2	Data Management Policy Communication Email Template	Template containing a sample email the Entity can use to announce the publishing of its new policy.	NPC_DGO_QDKC_General_Data Management Policy Communication Email Template
3	DSII Requirements Template	Template that provides a structured approach for documenting, assessing, and addressing the Entity's data sharing, integration, and interoperability needs.	NPC_DGO_QDKC_DSII_DSII Requirements Template
4	Data Integration & Interoperability Gap Assessment Template	Template used to document, and manage integration and interoperability gaps across systems.	NPC_DGO_QDKC_DSII_Data Integration & Interoperability Gap Assessment Template
5	Initiative Card Template	Template used to outline key details of a specific initiative.	NPC_DGO_QDKC_General_Initiative Card Template
6	Data Management Domain Plan Template	Template that helps the Entity capture an overview of identified initiatives, detail their sub-activities, owners, stakeholders, and activity timeframe.	NPC_DGO_QDKC_General_Data Management Domain Plan Template
7	Open Data Requirements Template	Template used to help Entities systematically document and assess the requirements, datasets, and data quality dimensions necessary for effective open data management.	NPC_DGO_QDKC_DSII_Open Data Requirements Template
8	Data Sharing Agreement Template	Template that can be leveraged as an illustrative example of what the Entity can include in its Data Sharing Agreement.	NPC_DGO_QDKC_DSII_Data Sharing Agreement Template
9	API Template	Template that can be used as a contract for all data exchanges conducted through the Government Data Exchange (GDX) Platform.	As specified by the GN Team

Asset No.	Asset Name	Description	File Name
10	Data Contract Template	Template used to provide a structured and standardized format for documenting agreements related to data sharing via SFTP and Database-to-database integrations.	NPC_DGO_QDKC_DSII_Data Contract Template
11	Data Sharing Request Template	Template used to standardize the process of requesting and documenting data sharing activities.	NPC_DGO_QDKC_DSII_Data Sharing Request Template
12	Government Network Change Request Template	Template required by the GN team to open the required channels to enable data sharing.	As specified by the GN Team
13	Data Exchange Directory	Template used to document and manage all data-sharing and exchange activities within and across entities.	NPC_DGO_QDKC_DSII_Data Exchange Directory
14	Enterprise Integration Platform Template	Template that provides the external data sharing integration layer architecture design and the Application and Data Integration Decision Tree.	NPC_DGO_QDKC_DSII_Enterprise Integration Platform Template
15	Open Data Metadata Template	Template used for cataloging and managing datasets in a standardized and easily accessible format.	NPC_DGO_QDKC_DSII_Open Data Metadata Template
16	Data Management KPIs Register Template	Template used to provide a standardized approach for documenting, tracking, and managing Key Performance Indicators (KPIs) related to data management activities.	NPC_DGO_QDKC_General_Data Management KPIs Register Template
18	Qatar Data Trust Index Methodology Guide	The Qatar Data Trust Index Methodology Guide can be leveraged to guide the Entity through the compliance self-assessment.	22012025_NPC_QDTI Methodology Guide_V1.0
19	QDTI Assessment Template	The QDTI Assessment Template can be used to document compliance with the National Data Standards.	23012025_NPC_QDTI Assessment Template_V1.0



المجلس الوطني للتخطيط
National Planning Council

دولة قطر • State of Qatar