Digital Government Authority
هيئة الحكومة الرقمية

Methodology of National Overall Reference Architecture (NORA)

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Contents

1. Introduction

1.1 Document Purpose

The purpose of this document is to describe and elaborate on the National Overall Reference Architecture (NORA) that will be used as a guide for government agencies to develop their own Enterprise Architecture (EA). This document also describes, to some extent, how NORA is linked to the overall National Enterprise Architecture (NEA) Framework.

1.2 National Enterprise Architecture (NEA) Framework

The National Enterprise Architecture (NEA) Framework is a key element for the national Digital envisioned to incorporate a federate approach to enterprise architecture for the Kingdom of Saudi Arabia (KSA). NEA Framework supports the identification of reusable components and services and facilitates a basis for Information Technology (IT) investment optimization. In addition, NEA enables more cost-effective and timely delivery of e-services through a repository of standards, principles, and reference models that assist in the design and delivery of business services to citizens, residents, commercial establishments, and inter-government collaboration.

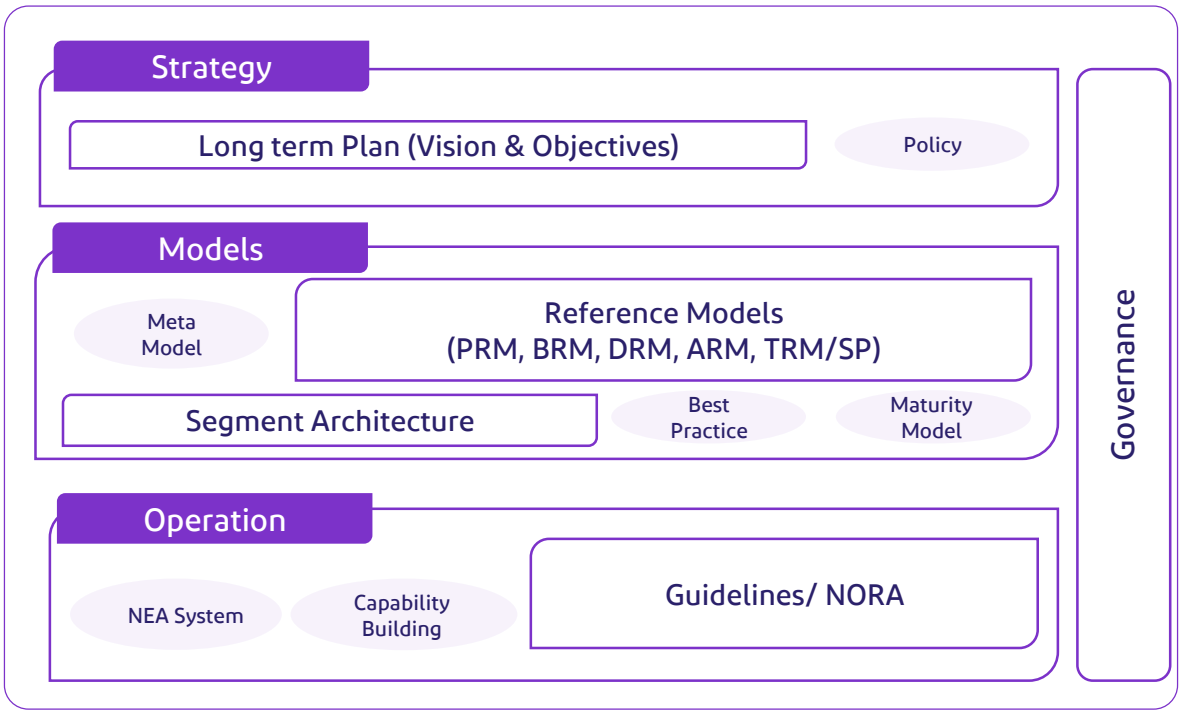

Figure 1 NEA Framework

1.3 Goals of NORA

The goals of NORA are as follows.

- Define the scope and requirements of the EA at the government agencies
- Help government agencies to have a smooth and effective EA implementation
- Ensure quality of government agency's EA through systematic processes and recommendations
- Alignment of agency's EA with Saudi government's national architecture and Digital transformation plans to facilitate whole of government approach
- Facilitate EA utilization, promotion and capability building in government agencies.

1.4 Features of NORA

The main features of NORA are.

- As a guide for EA development, it is written from the government agencies' perspective
- All stages in the EA lifecycle are described in some detail to provide clarity to the government agencies
- Balanced approach in EA development that focuses both on processes and the production of standard artifacts or deliverables
- Examples and example outputs are provided to aid understanding
- Highly customizable to suit the varied requirements of different government agencies.

1.6 Defining A Purpose for Agency EA

Every government agency is expected to have an digital transformation roadmap that would pave the way for the advancement of delivering government services. EA is an excellent tool for planning as well as implementing this digital transformation roadmap.

Government agencies have to find and determine the most important driver or motivation to develop their very own EA. The following table lists the common drivers and the corresponding objectives to develop EA. These common scenarios will influence the use of NORA as a guideline to develop EA for agencies.

Drivers	EA Objectives - Values
Lack of governance and prioritization	Comprehensive understanding of agency-wide perspective, including its problems, challenges, investments and opportunities
Lack of agency-wide information	IT standardization, with detailed information and inter-relationships between business and technologies
No integration among departments	No duplication of investments and systems; integration of work resulting in efficiency and better customer service
Duplicated investments	Prevent investments and work duplication.
Ineffectiveness and inefficiency in public service delivery	Understand agency weaknesses; integrated approach to improve agency's productivity and public service delivery
No standard operations	Implement quality business and service operations.
No technology standards	Interoperability of systems and processes in the agency
Investing capital and procurement costs	Effective investments that align business and IT

While government agencies may have different motivations, there are also common purposes shared among all government agencies. The following are the top reasons for embarking on the EA journey:

- Implementing digital transformation roadmap
- Optimizing IT investments
- Reducing IT costs
- Aligning IT to government business.

As EA is a wide program with an ongoing or continuous journey, it is possible that government agencies will require specific purposes, over time, to review and improve their EAs, such as the following examples:

- Standardization and interoperability of services, IT applications, data, and infrastructure
- Selection and/or prioritization of projects in the government agency for funding and implementation
- Building new capabilities such as improving customer service, making business processes effective, and agency-wide adoption of mobile applications and devices
- Improve and integrate business-critical government services and business functions through Business Process Re-Engineering and automation
- Development of IT Resource Management and IT Portfolio Management.

1.7 NORA Methodology

NORA methodology is based on a lifecycle consisting of ten major stages. The execution of the stages is in sequence, however, it can be tailored to suit the purpose of agency EA. Each stage has its own architectural artifacts or deliverables. In NORA, a continuous set of governance activities are carried out throughout the ten stages. Figure 2 below illustrates the NORA Methodology.

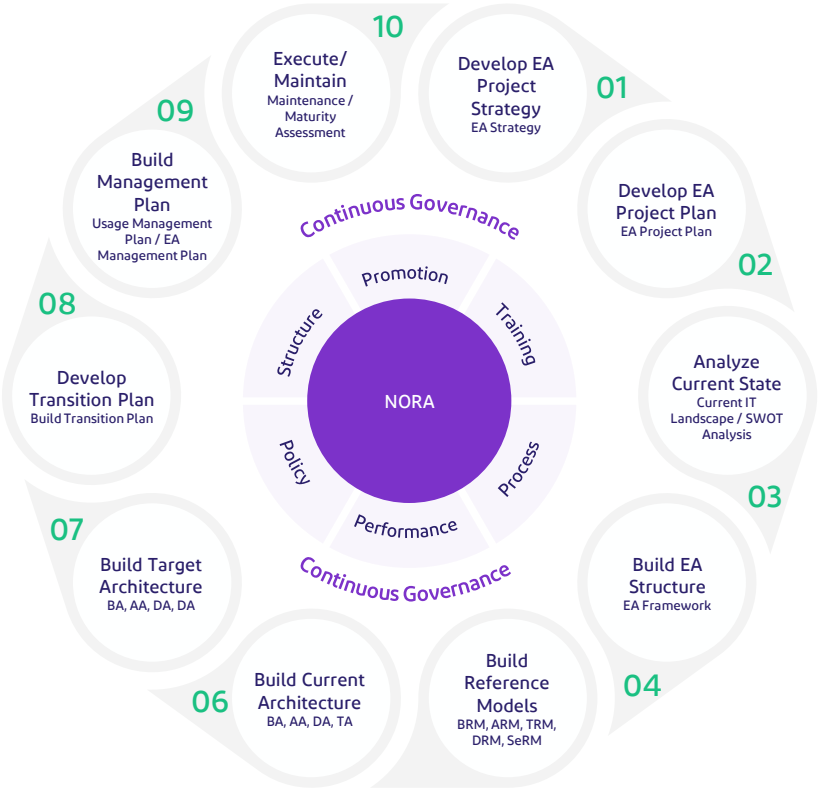

Figure 2 NORA Methodology

Continuous Governance (applicable during all stages)

As EA is a massive and long-term project, there are bound to be many challenges and issues. It is vital, therefore, that the EA governance work is also addressed to ensure the success of the project. The EA governance is continuous - covering activities such as program management, change management (including EA awareness and promotion), capability management (specific training, tools, and new processes), performance management (new KPIs and standards), and policy management.

Stage 1 – Develop EA Project Strategy

This stage describes the key activities to research, plan, and obtain approval to embark on the EA project. Each government agency has to obtain its project funding and either develop its EA internally or outsource.

Stage 2 – Develop EA Project Plan

Having established an approved EA Project Strategy, the government agency has to carry out a detailed plan for the EA project. This stage describes the key activities involved in developing and obtaining approval for the EA project.

Stage 3 – Analyze Current State

With the approved EA project plan in place, the government agency can start the actual work by analyzing its current state – both in terms of business and IT. This stage describes the key activities in reviewing and analyzing the different aspects of the current state of the government agency.

Stage 4 – Build EA Structure EA Framework

This is the stage where a government agency starts to develop its EA. In this stage, the government agency constructs the main pillars such as EA vision & mission, architecture goals & principles, EA Framework, taxonomy, and other related standards that are fundamental to its EA journey. The government agency should focus on building a quality EA framework and other relevant processes.

Stage 5 – Build Reference Models

Based on the EA framework developed previously, this stage is all about building the reference models so that a government agency can have standard views and taxonomies of key organizational assets and processes such as business, application, data, and technology domains.

Stage 6 – Build Current Architectures

The focus of this stage is on capturing the current architectures of the government agency so that the agency can clearly understand its IT and business landscapes. This would allow better visibility of the interconnections among different architectures and components and aid in analyzing the agency's issues, challenges, and opportunities relating to business, information/ data, and technologies.

Stage 7 – Build Target Architectures

With the completion of the government agency's current architectures, this stage develops the target architectures. As a blueprint for the government agency to realize its goals and desired outcomes in 3 to 5 years, the target architecture defines the improved business and IT landscapes.

Stage 8 – Develop Transition Plan

With the completion of the various target architectures in the previous stage, it is now important to plan and manage the transition required from the current landscapes to the desired target landscapes.

Stage 9 – Develop EA Management Plans

This stage is about developing the EA usage and management plans so that EA processes and values become an integral part of the agency's standard operating procedures. To ensure continued EA value delivery to the government agency, it is necessary and important to incorporate EA management plans into the government agency.

Stage 10 – Execute & Maintain

This is the last stage, where a government agency executes and maintains its EA. Having covered many stages in the EA journey, this last stage concerns taking action to make the government agency's EA into a reality.

1.8 NORA and NEA Framework

When government agencies develop their EAs according to NORA, not only do they deliver their own EAs, but they also ensure that all EA development complies with the overall NEA Framework.

NORA allows government agencies to comply with and align with the national digital transformation plan and initiatives, it aids government agencies to share applications and information and to develop highly integrated business functions and services that delight citizens and businesses.

2. Stage 1 - Develop EA Project Strategy

2.1 Stage Summary

This stage describes the key activities to research, plan, and obtain approval to embark on the EA project. Each government agency has to obtain its project funding and either develop its EA internally or outsource.

2.2 Stage Purpose

Lay the foundation of a government agency's EA implementation journey with clear directions and commitments. The following specific expected outcomes from this stage are:

- Increase the government agency's EA awareness – from top management to the operations staff
- Define and communicate EA goals and directions
- Obtain management approval to embark on the EA journey
- Stage Initiation.

2.3 Stage Initiation

DGA will communicate with the e-Transformation Committee in each government agency to initiate the agency EA implementation. Government agencies can also request and discuss with DGA to initiate their EA program.

2.4 Key steps in Stage 1

Preparation is an important stage that requires diligent research and planning. This is the first major step to embark EA in the government agency. The key activities and expected deliverables in Stage 1 are shown in the table below.

No	Description	Deliverable
1	**Develop EA Project Strategy**	**Government Agency's EA Project Strategy**
1.1	Analyze EA trends and case studies (both international and local agencies; also, across the same line of business/business function in BRM)	Document relevant EA trends and case studies relating to the government agency
1.2	Provide EA awareness to government agency's business and IT leaders (Government agencies can invite DGA to brief on NEA)	Understand the importance of EA
1.3	Assess the government agency's e-trans formation maturity (Via Qiyas) and its alignment of IT to the government business	Submit and present the assessment report to the e-Transformation Committee or equivalent. The assessment shall describe the agency's: 1. Maturity of its e-transformation 2. Effectiveness of its business functions 3. Maturity in IT adoption 4. Agency's capability on business productivity and use of IT.
1.4	Document the government agency's EA project strategy	Draft Government Agency's EA Project Strategy
1.5	Present and obtain approval for the EA project strategy	Approved Government Agency's EA Project Strategy by its e-Transformation Committee or equivalent

The EA Project Strategy should focus on strategic and long-term outcomes for the government agency. In the next step, a more detailed EA Project Plan will be created. For this step, the EA Project Strategy should cover the following topics:

1. The EA Value Propositions or Purposes
2. Goals or Objectives of the EA Project
3. Scope and Schedule of the EA Project
4. EA Development Considerations and Approach (including phase/gradual development strategy and sourcing method i.e., In-House or Outsource)
5. Estimated Cost and Resources (Staff) Requirements.

3. Stage 2 - Develop EA Project Plan

3.1 Stage Summary

Having established an approved EA Project Strategy, the government agency has to carry out a detailed plan for the EA project. This stage describes the key activities involved in developing and obtaining approval for the EA project.

3.2 Stage Purpose

The government agency has to structure and form appropriate EA Core team(s) and develop a detailed EA project plan. The following specific expected outcomes from this stage are:

- Clarify the roles and responsibilities of management and the various working teams
- Clarify the governance and management of EA in the government agency
- Obtain management approval and commitment to the goals, schedules, and resources to develop and implement the EA.

3.3 Stage Initiation

This stage begins with the endorsement or approval of the EA Project Strategy in Stage 1.

3.4 Key Steps in Stage 2

Following table summarizes the key steps in stage 2.

No	Description	Deliverable
2	**Develop EA Project Plan**	**Government Agency's EA Project Plan**
2.1	Upon approval of the Project Strategy (Step 1.4), propose and set up the various EA committees and teams such as EA Governance Committee, EA Working Team, Business-Domain Working Team, and the IT Working Team.	Approved EA committees and working teams by the e-Transformation Committee or equivalent
2.2	Finalize the EA development approach, such as scope, budget, schedule, and including outsourcing or insourcing of the Government Agency's EA implementation. Also include the adoption of EA culture into all aspects of business and IT planning and reviews.	Approved EA development approach by e-transformation committee or equivalent
2.3	Upon approval of Steps 2.1 & 2.2, the EA working team will document the detailed EA Project Plan	Draft EA project plan
2.4	Present and obtain approval for the EA project plan	Approved EA project plan by the EA Governance Committee

4. Continuous Governance

4.1 Purpose of Governance

With the approved EA project plan by the EA Governance Committee in the previous stage, the EA Core and working teams can embark on the detailed EA work. As EA is a massive and long-term project, there are bound to be many challenges and issues. It is vital, therefore, that the EA governance work is also addressed to ensure the success of the project.

The previous stage has defined the roles and responsibilities of the EA Governance Committee. Hence, the purpose of the EA governance is very clear, i.e., to steer and direct the EA project to successfully meet the government agency's vision, mission, and strategic goals. Recommended that the EA Governance Committee report to the e-Transformation Committee or one of the e-Transformation Committee members to chair the EA Governance Committee.

4.2 Outcome of Governance

The outcomes of the continuous governance are:

1. Up-to-date project reporting on schedules, budget, progress, and challenges
2. Pro-active and timely review of deliverables and artifacts (instead of reactive management)
3. Top-down transparency in solving challenges and issues across the government agency
4. Effective management of resources in the government agency.

4.3 Governance Initiation

The government agency's e-Transformation Committee started the governance by reviewing and approving the EA Project Strategy in Stage 1. The EA governance officially started with the formation of the EA Governance Committee in Stage 2. Note that EA governance is a continuous activity affecting all stages.

4.4 Key Areas in Governance

Key areas in governance are listed below.

No	Description	Deliverable
All	**Continuous Governance**	**Success of Government Agency's EA Project**
1	Track and monitor the key activities and deliverables of the EA. Highlight to the EA Governance Committee potential delays, changes in scope, and lack of resources.	Program management of Government Agency's EA implementation
2	Manage the introduction and changes to the various activities in the EA. In particular, carry out activities on EA awareness and promotion.	Change management, especially on awareness and promotion of Government Agency's EA
3	Manage the capability requirements for the EA implementation that includes training, changes to job scope, and review of division/department organizational structures.	Capability management on the progression on the government agency's capabilities to carry out the EA Project plans
4	Manage the policies and regulations required to implement the different factors or activities of the EA in the government agency.	Policy management on the policies and regulations relating to the EA execution
5	Manage the performance outcomes of the EA in the government agency	Performance management on the metrics, KPIs, and outcomes of the EA

As EA affects the whole of the government agency's functions, and not merely IT, it is vital that the EA Governance Committee carry out its governance functions throughout the EA lifecycle.

The EA governance covers five areas as summarized in Figure 3 - program management, change management, capability management, policy management, and performance management. Note that these five management areas have to be planned and executed together rather than in sequence. Through program management, which acts as a central management area, specific projects and tasks can be planned, scheduled, and monitored. Details of these governance areas are described below.

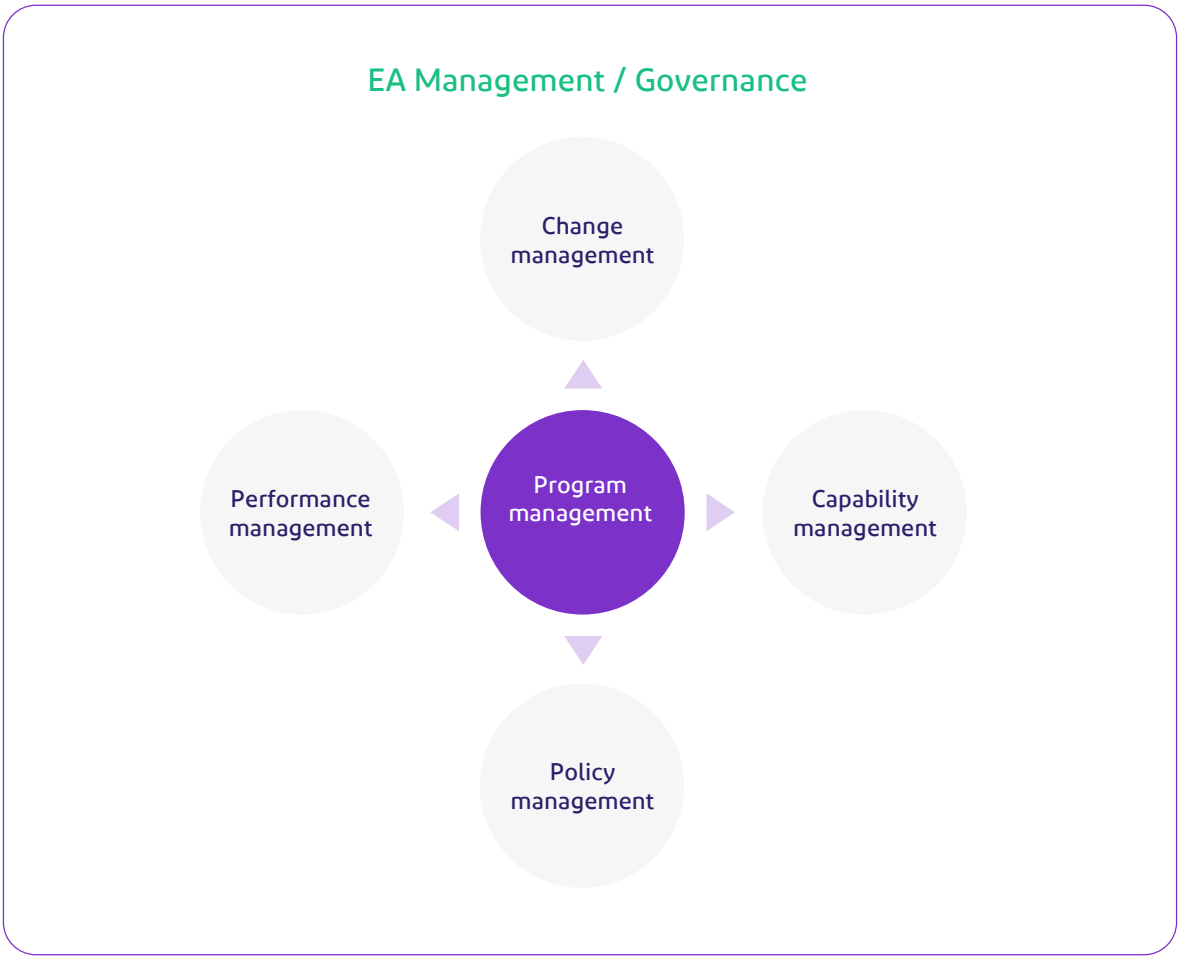

Figure 3 Five Aspects of EA Governance

4.4.1 Program Management

The EA will be a continuous journey with dynamic changes affecting different parts of the architectures and reference models. The EA also recommends initiatives that require time to develop and fully implement.

4.4.2 Change Management

Before EA existed, the government agency had been organizing, planning, and executing projects (both business and IT) in a typical manual and reactive fashion. The introduction of EA requires big changes to the government agency, such as organization review, integrated & strategic planning, and making decisions on digital transformation projects in a structured and timely way. Thus, change management is necessary for the success of the EA execution.

4.4.3 Capability Management

Not only does EA require a big organizational change, but it also requires a commitment of the government agency to continuously improve its capability – i.e., thought processes in executing work, improving skills & experiences in architecting, improving business processes & automation, and in integrated planning & decision-making.

4.4.4 Policy Management

In the development of the EA, the teams would have difficulties identifying things as a standard or a guideline. While this is normal, the EA execution requires policies and regulations to ensure government agency-wide standardization and adoption of the various architectures/reference models.

4.4.5 Performance Management

As a strategic enabler, EA provides the ability to define and measure performance of the government agency. While this can be incorporated into the Performance Architecture (which is optional), the execution of EA nonetheless requires performance metrics to be defined so that management knows whether the EA project has been a success.

5. Stage 3 - Analyze Current Stage

5.1 Stage Summary

With the approved EA project plan in place, the EA Core and working teams can start the actual work by analyzing the current state of the government agency. This stage describes the key activities in reviewing and analyzing the different aspects of the current state of the government agency.

5.2 Stage Purpose

The government agency has to carry out requirements study and detailed analysis of the current state in terms of both business and IT. The following specific expected outcomes from this stage are:

1. Define the government agency's EA requirements (mainly from key stakeholders)
2. Document the government agency's environment analysis report – both internal and external analysis
3. Document the government agency's current strengths, weaknesses, opportunities, and threats (SWOT).

5.3 Stage Initiation

This stage begins with the endorsement or approval of the EA Project Plan from Stage 2.

5.4 Key Steps in Stage 3

This stage kicks off with documenting the government agency's EA requirements and the current business and IT landscapes (through environment analysis). This document will help to steer the EA journey in the following stages. The key steps in Stage 3 are listed in Table below.

No	Description	Deliverable
3	**Analyze Current Stage**	**a. EA Requirements** **b. EA Environment Analysis Reports (Current Business Landscape and Current IT Landscape)** **c. SWOT Analysis Report**
3.1	Gather and document EA requirements from various stakeholders such as the e-Transformation Committee, EA Governance Committee, main business functions' stakeholders, and EA working teams.	Government Agency's EA requirements are viewed by the EA Governance Committee.
3.2	Gather and analyze Government Agency's internal environment, such as organizational capability to plan and execute e-transformation plan, business plan, and IT plan.	Government Agency's EA environment analysis report reviewed by the EA Governance Committee.
3.3	Gather and analyze Government Agency's external environment, such as general trends in EA, United Nations, or similar e-government rankings, including recommendations, prioritized national projects, and new government policies.	Government Agency's EA environment analysis report was reviewed by the EA Governance Committee.
3.4	Present to the EA Governance Committee	EA Governance Committee is informed about the detailed current state of the government agency.

6. Stage 4 - Develop EA Framework

6.1 Stage Summary

This is the stage where a government agency starts to develop its EA. In this stage, the government agency constructs the main pillars such as EA vision & mission, architecture goals & principles, EA Framework, taxonomy, and other related standards that are fundamental to its EA journey. The government agency should focus on building a quality EA framework and other relevant processes.

6.2 Stage Purpose

The previous stage gave the EA requirements and environment analysis reports so that the EA Core team knows what the government agency's EA has to address. The purpose of stage 4 is to architect important EA fundamentals that will steer and guide the EA development in subsequent stages. The following specific expected outcomes from this stage are:

1. Define the government agency's EA vision, mission, architecture goals, and architecture principles.
2. Define EA documentation standard.
3. Define the EA artifact review and approval process.
4. Create the government agency's EA Framework.

6.3 Stage Initiation

This stage begins with the completed EA requirements, environment analysis reports (both current business and current IT landscapes), and the SWOT analysis report from Stage 3. Note that the EA Governance Committee may also provide additional strategic requirements at the end of Stage 3.

6.4 Key Steps in Stage 4

Stage 4 focuses on high-level architecture activities that require experience and vision. The key steps in Stage 4 are listed in the Table below.

No	Description	Deliverable
4	**Develop EA Framework**	**Government Agency's EA Mission, Vision, Architecture Objectives, and Architecture Principle Statements** **Government Agency's EA Framework**
4.1	Define EA's vision and mission statements, & architecture objectives	Draft EA Vision, Mission, and architecture objectives
4.2	Define EA's architecture principles	Draft EA Principles
4.3	Present and obtain approval for EA's vision, mission, and architecture objectives	Approved EA Vision, Mission, Architecture Objectives, and Architecture Principles
4.4	Define EA Framework structure	Draft EA Framework Structure
4.5	Design EA architecture elements	Draft EA Architecture Elements
4.6	Design EA model	Draft EA Model
4.7	Develop EA documentation standard	EA documentation standard
4.8	Develop EA artifacts management processes	Draft EA Artifact management processes
4.9	Present and obtain approval for the EA framework	Approved EA Framework

7. Stage 5 - Build Reference Models

7.1 Stage Summary

The previous section has defined and described the reference models and architectures. Based on the EA framework developed previously, this stage is all about building the reference models so that a government agency can have standard views and taxonomies of key organizational assets and processes such as business, application, data, and technology domains.

7.2 Stage Purpose

The purpose of stage 5 is to architect and build the relevant EA reference models of the government agency. The following specific expected outcomes from this stage are:

1. Performance Reference Model
2. Business Reference Model
3. Application Reference Model
4. Data Reference Model
5. Technology Reference Model.

Note that the above are recommended outcomes. A government agency can have more or less, or even combine, reference models depending on its EA requirements, its EA framework design, and its EA goals. Other examples of reference models are security reference model, service reference model, and infrastructure reference model.

7.3 Stage Initiation

This stage requires the EA vision, mission, architecture goals & principles, and the EA framework from the previous stage. In addition, the government agency needs to refer to DGA's NEA Reference Models. By referring to the NEA reference models, the government agency can develop its own reference models, ensuring alignment with the whole of the government as well as achieving its EA goals.

7.4 About NEA References Models

Since government agencies have to refer to NEA reference models, it is a prerequisite to understand all five reference models and their inter-relationships.
The objectives or goals of the NEA reference models are:

1. To provide whole-of-government structured information on IT and business landscapes
2. To provide effective views or perspectives for different stakeholders in the government – from business to applications to data to IT infrastructure
3. To provide a reference point for government agencies to review and distill relevant information and design for their own use.

Figure 4 illustrates the NEA reference models and their inter-relationships.

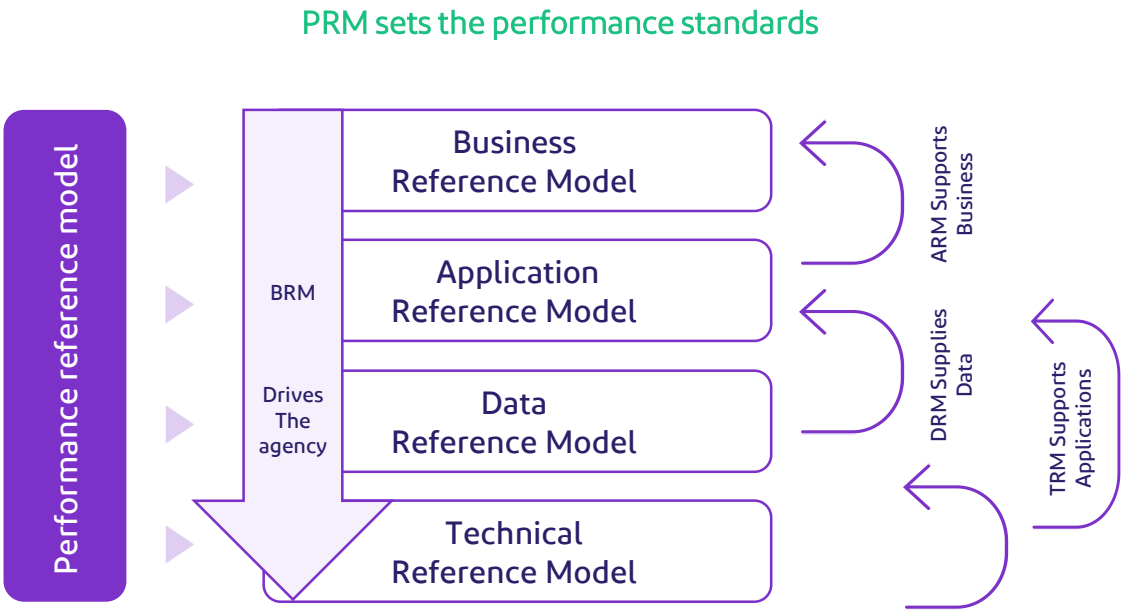

Figure 4 NEA reference models and their inter-relationships

a. Performance Reference Model

The Performance Reference Model (PRM) is an outcome-focused measurement framework that can assist government agencies in the design and implementation of effective business measurement systems and performance architectures. The PRM, through the measurement indicators, sets the performance standards for the government. Hence, from an architectural viewpoint, the PRM sets the performance standards for the other four reference models.

b. Business Reference Model

The Business Reference Model (BRM) is a classification category used to describe the type of business functions for the whole Saudi government. It gives a logical functional view instead of functions by physical government agencies. The functions and requirements in BRM drive the other reference models, i.e., the Application Reference Model, Data Reference Model, and Technology Reference Model.

c. Application Reference Model

The Application Reference Model (ARM) is a categorization of different types of application systems, application components, and interfaces. It is the framework for categorizing national shared IT systems and application components to help identify opportunities for sharing, reuse, and consolidation or renegotiation of software licenses. The ARM supports directly the BRM in delivering business outcomes.

d. Data Reference Model

The DRM (Data Reference Model) is a model that classifies data and defines a standard data structure to support developing data architecture and promoting data standardization/reuse/ management. The DRM supports the ARM directly in delivering business goals by supplying data and information. The various application systems have to use data to provide information to businesses.

e. Technology Reference Model

The Technology Reference Model (TRM) classifies and defines technologies and technology standards/specifications that support businesses and services. Under structured technology classifications, technology standards are defined to promote interoperability among government agencies. The TRM supports the data usage in DRM, supports application systems in ARM through the technology definitions and infrastructure implementations, and supports the agency staff through the use of personal and office technologies.

Please refer to the actual NEA reference models for details.

7.4 Key Steps in Stage 5

Stage 5 is all about building the relevant reference models. The table below lists all the key steps in Stage 5.

No	Description	Deliverable
5	**Document Government Agency's Reference Models**	**Government Agency's Reference Models**
5.1	Develop a model that standardizes performance elements for improving IT projects and their quality. Obtain approval from the EA Governance Committee.	Approved Performance Reference Model
5.2	Develop a model that classifies and defines business functions and related information. Obtain approval from the EA Governance Committee.	Approved Business Reference Model
5.3	Develop a model that classifies and defines shared application systems/components to promote service integration and reuse by identifying redundant or correlated applications. Obtain approval from the EA Governance Committee.	Approved Application Reference Model
5.4	Develop a model that classifies data and defines standard data structures to support data architecture development, data standard, and data reuse. Obtain approval from the EA Governance Committee.	Approved Data Reference Model
5.5	Develop a model that classifies and defines technologies and technology standards/ specifications supporting business and services. Obtain approval from the EA Governance Committee.	Approved Technology Reference Model

In building the various agency's reference models, the EA Core and working teams have to make reference to its EA Framework (developed in Stage 4) and NEA Reference Models.

8. Stage 6 - Build Current Architecture

8.1 Stage Summary

Once the framework and reference models are established and agreed upon, the government agency embarks on one of the most critical steps in its EA journey. The focus of this stage is on capturing the current architectures of the government agency so that the agency can clearly understand its IT and business landscapes. This would allow better visibility of the interconnections among different architectures and components and aid in analyzing the agency's issues, challenges, and opportunities relating to business, information/data, and technologies. The information captured and architectures created in this stage include Business Architecture, Application Architecture, Data Architecture, and Technology Architecture. The government agency may build all the current architectures or select relevant architectures depending on its EA scope and development strategy.

8.2 Stage Purpose

The purpose of this stage is to analyze and document the status of the current government agency's IT and business landscapes. The expected outcomes or deliverables of this stage are:

1. Current Business Architecture
2. Current Application Architecture
3. Current Data Architecture
4. Current Technology Architecture.

Note that the above are recommended outcomes. A government agency can have more or less architectures depending on its EA scope, goals, EA framework design, and development strategy. Other examples not listed above include current security and performance architectures.

8.3 Stage Initiation

With the completion of the previous phases, the EA Core Team and working teams have to ensure that the following deliverables are in place:
1. Performance Reference Model
2. Business Reference Model
3. Application Reference Model
4. Data Reference Model
5. Technology Reference Model.

Again, depending on the EA scope and development strategy, the government agency has to ensure that the corresponding reference models are completed. If the government agency intends to build all architectures, then it needs the five above reference models. However, if the government agency is doing a specific EA scope, such as data and technology consolidation, then it needs to have at least the data and technology reference models in place.

8.4 Key Steps in Stage 6

Table below lists the key activities and expected deliverables for stage 6.

No	Description	Deliverable
6	**Build Government Agency's Current Architectures**	**Government Agency's Relevant Current Architectures**
6.1	Capture current business and IT data	Government Agency's Current Data
6.2	Analyze and build the business architecture that describes the current business functions, sub-business functions, business processes, business activities, and business services	Government Agency's Current Business Architecture
6.3	Analyze and build the application architecture that lists all the current applications (fully automated, partially automated & manual), and the relationships between these applications and the business functions/processes/services	Government Agency's Current Application Architecture
6.4	Analyze and build the data architecture that shows all the current data used by the government agency, the usage of data by applications, including data exchange within and externally	Government Agency's Current Data Architecture
6.5	Analyze and build the technology architecture that illustrates the current IT infrastructure used by the various applications, data, and people	Government Agency's Current Technology Architecture
6.6	Current Architecture Analysis	Summary of Improvement Opportunities

8.4.1 Step 6.1 Capture current Business and IT Data

The first important step is to capture both the current business and IT data in the government agency. Current data is required to understand the actual reality of the agency's business and IT landscapes. Data has to be up-to-date, accurate, and verified. It is always better to have more detailed data than insufficient data.

Depending on the agency's actual EA scope and objectives, the EA Core and working teams have to prepare the relevant means to capture the required data. If the agency is doing the entire EA, then it has to capture information about the business, applications, data/databases, and infrastructure. On the other hand, if the agency is doing only technology architecture, then it has to capture the current IT technologies and infrastructure data.

However, the teams may face difficulty in obtaining the support of the various parties or divisions to capture the current data. As part of change management (please see Continuous Governance – Change Management section), it is recommended to provide clear communications to the relevant departments, divisions or branches in the agency on the need for EA and the data capturing exercise.

The following are the recommended activities to capture current data in the agency:

S/No	Activity
1	Identify data elements and data sources required
2	Design data capturing method(s)
3	Design data-capturing templates.
4	Present to EA Governance Committee on data capturing approach
5	Brief the relevant parties.
6	Capture the relevant current data.
7	Verify and update

8.4.2 Step 6.2 Analyze and build current business architecture

On completion, the current BA will depict the current business landscape of the government agency. Since the BA is an expansion of the agency BRM, the following are the artifacts or deliverables. Note that there are three additional artifacts or deliverables. Collectively, they will provide a comprehensive description of the current BA.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of BA
2	BA Principles	The architectural principles of BA
3	Business Areas (BRM)	The main business areas for the agency
4	Lines of Business (BRM)	The main LoBs (Lines of Business) for the agency within the business areas
5	Business Functions (BRM)	The key business function descriptions within LoBs
6	Sub-Business Functions (BRM)	The sub-business function descriptions within each business function
7	Business Processes	The list of business process descriptions within each sub-business function
8	Organization Chart	The current organization chart for the agency
9	Service Catalogue	The current list of business services

Building the Agency BA

Below table summarizes the main activities for building the agency BA.

No	Activity	Artifact / Deliverable
1	Define the BA purpose or direction	BA purpose/direction statement
2	Define the BA principles	BA principles
3	Document the organization information	Organization chart
4	Define the business functions (BRM)	Reviewed/updated business areas, LoBs, and business functions and created sub-business functions
5	Define the business processes	List of business processes for the agency
6	Document the service catalogue	Service catalogue
7	Document and review	Reviewed draft of current BA
8	Obtain governance approval	Approved agency current BA

The figure below shows the relationships among BA artifacts and the relationships with artifacts from other architectures.

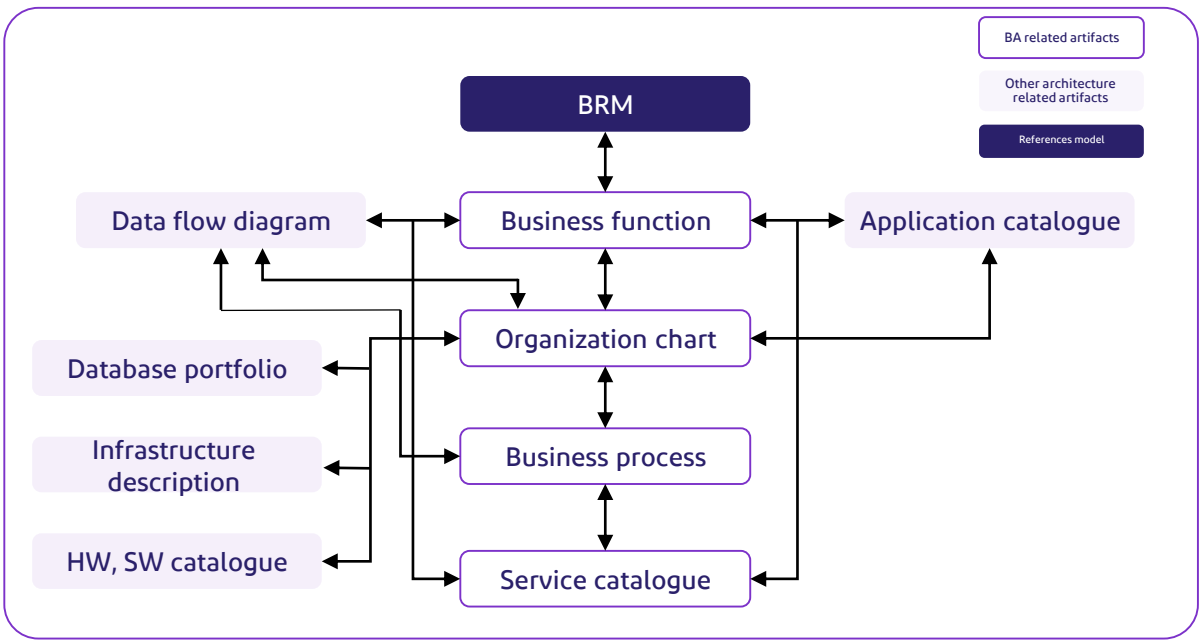

Figure 5 BA artifacts' relationship diagram

8.4.3 Step 6.3 Analyze and build the current application architecture

Below table summarizes the agency BA relationships with other current architectures.

Other Current Architectures	AA Relationship
BA	AA provides application systems to the various business functions in the government agency.
DA	AA requires data models and data elements to be used for decision-making and efficient operations.
TA	AA provides the requirements for technologies to support the hosting and usage of application systems.

Description of the Agency AA

On completion, the current AA will depict the current application landscape of the government agency. Since the AA is an expansion of the agency ARM, it provides a catalogue of current applications. The application catalogue and three other additional artifacts or deliverables provide a comprehensive description of the current AA.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of AA
2	AA Principles	The architectural principles of AA
3	Application Systems (ARM)	The main application systems for the agency
4	Application Components (ARM)	The key application components for the agency
5	Application Interfaces (ARM)	The main application interfaces for the agency
6	Application Catalogue	The list of applications and their attributes
7	Application Functions	The description of the application functions
8	Application Relationships	The description of the application relationships
9	Application Overview	The overview description of the application systems

Building the Agency AA

Below table summarizes the main activities for building the agency AA..

No	Activity	Artifact / Deliverable
1	Define the AA purpose or direction	AA purpose/direction statement
2	Define the AA principles	AA principles
3	Review application systems, application components, and application interfaces (ARM)	Reviewed/updated application systems, application components, and application interfaces
4	Document the application overview	Application overview
5	Document the application catalogue	Application catalogue
6	Document the application functions	Application functions
7	Document the application relationships	Application relationships
8	Document and review	Reviewed draft of current AA
9	Obtain governance approval	Approved agency current AA

The figure below shows the relationships among AA artifacts and the relationships with artifacts from other architectures.

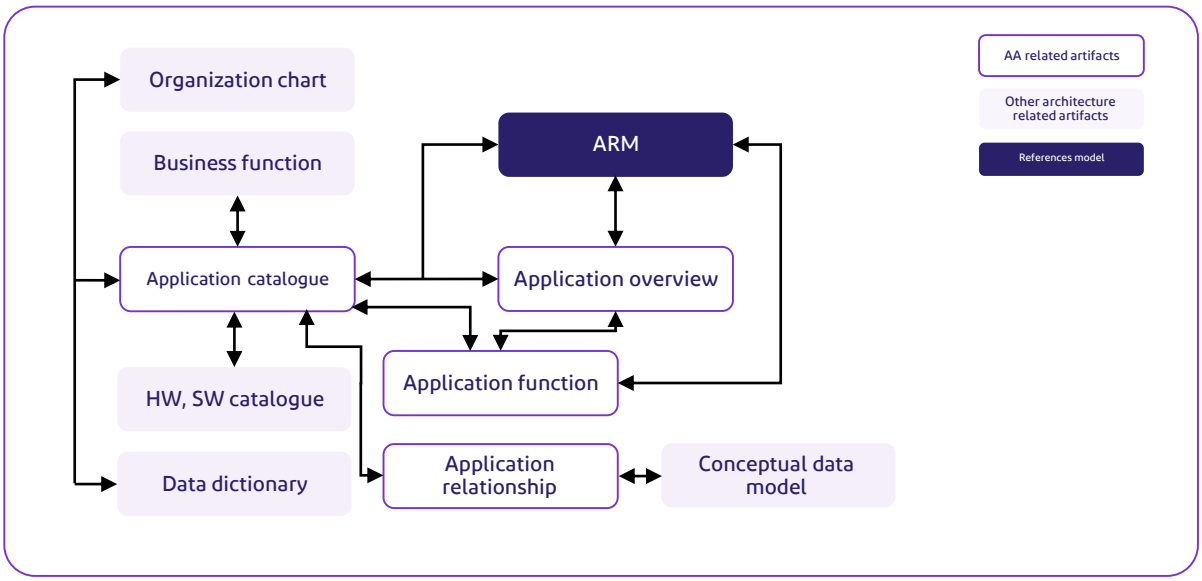

Figure 6 AA artifacts' relationship diagram

8.4.4 Step 6.4 Analyze and build current data architecture

On completion, the current DA will depict the current data landscape of the government agency. Since the DA is an expansion of the agency DRM, it provides a catalogue of data and the data models currently in use. There will be five additional artifacts in the DA. Together, they give a comprehensive description of the current data usage in the government agency.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of DA
2	DA Principles	The architectural principles of DA
3	Data Model (DRM)	The main data model for the agency
4	Data Classifications (DRM)	The key data classifications
5	Data Structure (DRM)	The main data structures for the agency
6	Data Exchange (DRM)	The list of data exchanges for the agency
7	Conceptual Data Model	The pictorial high-level description of the data model for the agency
8	Logical Data Model	The logical data models of the agency
9	Data Flow Diagrams	The various pictorial representations of data flows for the agency
10	Database Portfolio Catalogue	The consolidation of all databases in the agency
11	Data Dictionary	The definitions for common data in the agency

Building the Agency DA

Table below summarizes the main activities for building the agency DA.

No	Activity	Artifact / Deliverable
1	Define the DA purpose or direction	DA purpose/direction statement
2	Define the DA principles	DA principles
3	Review data model, data classifications, and data structures (DRM)	Reviewed/updated data model, data classifications and data structures
4	Create the conceptual data model	Conceptual data model
5	Create the logical data model	Logical data model
6	Document the data flow diagrams	Data flow diagrams
7	Compile the database portfolio catalogue	Database portfolio catalogue
8	Document the data dictionary	Data dictionary
9	Document and review	Reviewed draft of current DA
10	Obtain governance approval	Approved agency current DA

Below table summarizes the agency DA relationships with other current architectures.

Other Current Architectures	DA Relationship
BA	DA provides information on agency-wide data and sources of data from external parties; this aids decisions on data sharing and reuse
AA	DA provides data models, database information, and data elements to be used by application systems
TA	DA provides the requirements for technologies to support the hosting and usage of database systems and data exchanges

The figure below shows the relationships among DA artifacts and the relationships with artifacts from other architectures.

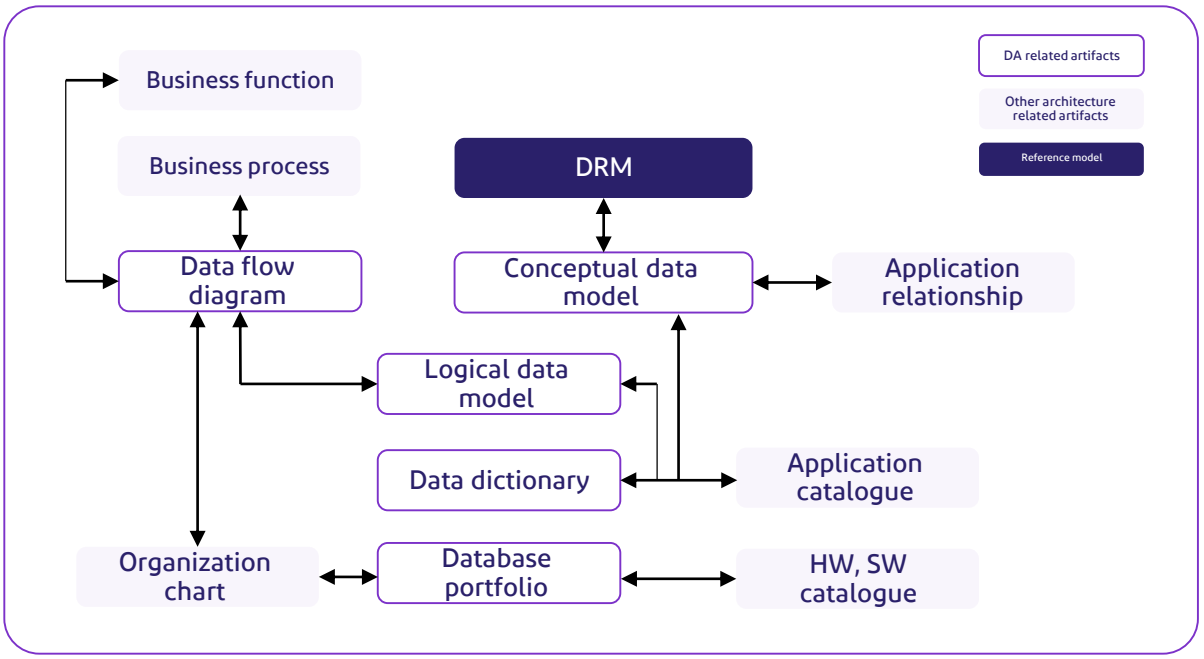

Figure 7 DA artifacts' relationship diagram

8.4.5 Step 6.5 Analyze and build current technology architecture

As the EA Core and working teams have already developed other current architectures, it is important to understand their inter-relationships as summarized in the below table.

Other Current Architectures	TA Relationship
BA	TA provides the client and office technologies such as PCs, mobile devices, printers, and scanners to the agency employees in different branches and divisions
AA	TA provides the infrastructure technologies to host and support application systems and components.
DA	TA provides the infrastructure technologies to enable data transactions and exchanges.

On completion, the current TA will depict the current technology landscape of the government agency. Since the TA is an expansion of the agency TRM, the following are the artifacts or deliverables. Note that there are four additional artifacts or deliverables. Collectively, they will provide a comprehensive description of the current TA.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of TA
2	TRM Principles	The architectural principles of TA
3	Service Area (TRM)	The highest-level technology service area
4	Service Category (TRM)	The technology service category within a service area
5	Service Standard (TRM)	The list of technology service standards in use
6	Infrastructure Overview	The high-level representation of the IT landscape in the government agency (normally in diagrammatic form)
7	Infrastructure Description	The descriptions of the main infrastructure technologies in use
8	Hardware Catalogue	The current list of hardware
9	Software Catalogue	The current list of software

Below table summarizes the main activities for building the agency TA.

No	Activity	Artifact / Deliverable
1	Define the TA purpose or direction	TA purpose/direction statement
2	Define the TA principles	TA principles
3	Review the service areas and service categories (TRM)	Reviewed service categories within service areas for the agency
4	Review the service standards (TRM)	Reviewed service standards within each service category relevant to agency
5	Analyze the data collected	Nil
6	Describe the infrastructure overview	High-level representation of the IT landscape in agency
7	Provide the infrastructure descriptions	List of infrastructure technology descriptions in use
8	Develop the hardware catalogue	List of hardware in use
9	Develop the software catalogue	List of software in use
10	Document and review	Reviewed draft of current TA
11	Obtain governance approval	Approved agency current TA

The figure below shows the relationships between TA artifacts and the relationships with artifacts from other architectures.

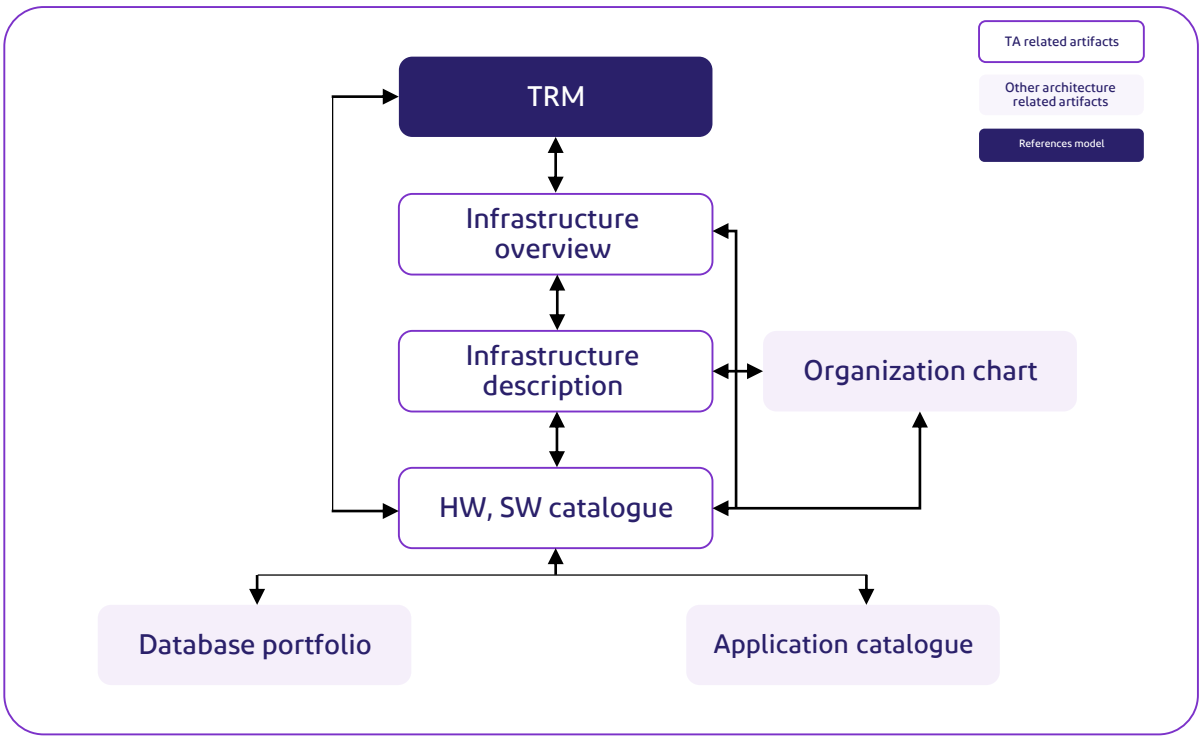

Figure 8 Relationship TA artifacts

8.4.6 Step 6.6 Current architecture analysis

It is a major accomplishment milestone on the completion of capturing the current architectures. With the information and pictorial representations, the EA Core and working teams can have different perspectives about the government agency on the business, applications, data, and infrastructure. These current architectures also allow the discovery of not-so-obvious linkages, dependencies, and even synergies or integrated components. On the other hand, it is a milestone unlike any; this is because it performs many important aspects, including but not limited to the following. The advantage of viewing the whole enterprise cutting across silos, establishing the obvious and not-so-obvious linkages and dependencies, capturing synergies etc., facilitates the identification of opportunities for the progress of the agency as well as the issues that are hindering its future growth.

The current architecture analysis is an activity to understand current issues and challenges of the government agency on the one hand and to explore ideas for improvement and integration on the other hand.

The following describes important activities for this step.

No	Activity	Artifact / Deliverable
1	Analyze BA	BA improvement opportunities
2	Analyze AA	AA improvement opportunities
3	Analyze DA	DA improvement opportunities
4	Analyze TA	TA improvement opportunities
5	Document and review	Reviewed draft summary of improvement opportunities
6	Obtain governance approval	Approved agency summary of improvements

1. Analyze BA

Review the current BA.

A recommended method is to compare the BA artifacts against the agency's mission and vision statements, strategic goals/objectives, the agency annual plans, digital transformation Plan, and the agency PRM .The EA Core and working teams can also use analysis tools such as Value Chain analysis, 7S analysis, SWOT analysis, and business process simulation. Carry out the following activities:

a. List the main issues and challenges faced in BA
b. Analyze the business functions and services by logical and physical dimensions
c. List the prioritized strategic business outcomes
d. List the key business work activities or functions and how they have to improve based on (a) and (c)
e. Using the BA principles as a guide, define specific improvement opportunities for the list in (d).

2. Analyze AA

Review the current AA.

A recommended method is to compare the AA artifacts against the strategic goals/objectives, the agency annual plans, digital transformation Plan, the agency PRM, and the prioritized application list (from agency ARM). The EA Core and working teams can also use SWOT analysis. Carry out the following activities:

a. List the main issues and challenges faced by AA
b. Identify some of the global trends in application systems
c. Analyze the application systems by categories and departments/branches; also analyze the required application systems to support the BA improvement opportunities
d. List the prioritized application systems, components, and interfaces for development, replacement, amendment, and retirement
e. Using the AA principles as a guide, define specific improvement opportunities for the list in (d).

3. Analyze DA

Review the current DA.

A recommended method is to compare the DA artifacts against the agency annual plans, digital transformation Plan, and the agency PRM. The EA Core and working teams can also use analysis tools such as data dependency and SWOT analysis. Carry out the following activities:

a. List the main issues and challenges faced in DA
b. Identify some of the global trends in data management and data usage
c. Analyze the data represented by logical and physical dimensions; also analyze the required data to support the AA improvement opportunities
d. List the prioritized strategic data models, data elements, and databases
e. Using the DA principles as a guide, define specific improvement opportunities for the list in (d).

4. Analyze TA

Review the current TA.

A recommended method is to compare the TA artifacts against the agency annual plans, digital transformation Plan, and the agency PRM. The EA Core and working teams can also use analysis tools such as data dependency and SWOT analysis. Carry out the following activities:

a. List the main issues and challenges faced in DA
b. Identify some of the global technology trends and technology standards
c. Analyze the infrastructure and other technologies; also analyze the required technologies required to support the BA, AA, and DA improvement opportunities
d. List the prioritized strategic technologies for development; also include technologies that require to be replaced or retired
e. Using the TA principles as a guide, define specific improvement opportunities for the list in (d).

5. Document and review

After completing all the analysis, consolidate all the improvement areas and document them into a structured information base on the agency's documentation standards. Perform a cross-domain analysis (BA, AA, DA, TA), to identify and document more opportunities for improvement. Do an internal review and updates. It is also advisable to get other parties – business owners, application developers, DBAs and data owners, and the infrastructure team - to carry out a final review.

6. Obtain governance approval

With the completion of the deliverables with the other above related contents, present to the EA Governance Committee. The Chief Architect should front this presentation. From the comments from the committee, make the necessary changes to obtain their final approval.

9. Stage 7 - Build Target Architecture

9.1 Stage Summary

With the completion of the government agency's current architectures, this stage develops the target architectures. As a blueprint for the government agency to realize its goals and desired outcomes in 3 to 5 years, the target architecture defines the improved business and IT landscapes. The detailed analysis will lead to the development of target architectures that include Business Architecture, Application Architecture, Data Architecture, and Technology Architecture. The government agency may build all the target architectures or select relevant architectures depending on its EA scope and development strategy.

9.2 Stage Purpose

The purpose of this stage is to analyze, design, and document the target government agency's IT and business landscapes. The expected outcomes or deliverables of this stage are:

1. Target Business Architecture
2. Target Application Architecture
3. Target Data Architecture
4. Target Technology Architecture.

Note that the above are recommended outcomes. A government agency can have more or less architectures depending on its EA scope, goals, EA framework design, and development strategy. Other examples not listed above include target security and performance architectures.

9.3 Stage Initiation

With the completion of the previous stages, the EA Core Team and working teams have to ensure that the following deliverables are in place:

1. Summary of Improvement Opportunities
2. Current Business Architecture
3. Current Application Architecture
4. Current Data Architecture
5. Current Technology Architecture.

As mentioned above, depending on the EA scope and development strategy, the government agency has to ensure that the corresponding current architectures are completed. If the government agency intends to build all architectures, then it needs the five above current architectures. However, if the government agency is doing a specific EA scope, such as data and technology consolidation, then it needs to have at least the data and technology architectures in place.

9.4 Key Steps in Stage 7

Below table lists the key activities and expected deliverables for stage 7.

No	Description	Deliverable
7	**Build Government Agency's Target Architectures**	
7.1	Define directions for developing target architecture by analyzing environmental factors such as agency's vision/principles, current architectures etc.	Target Architecture direction
7.2	Analyze and build the target business architecture based on architecture principles, current business architecture's analysis results, and current business architecture deliverables.	Government Agency's target Business Architecture
7.3	Analyze and build the target application architecture based on architecture principles, current application architecture's analysis result, and current application architecture deliverables.	Government Agency's target Application Architecture
7.4	Analyze and build the target data architecture based on architecture principles, current data architecture's analysis results, and current data architecture deliverables.	Government Agency's target Data Architecture
7.5	Analyze and build the target technology architecture based on architecture principles, current technology architecture's analysis result, and current technology architecture deliverables.	Government Agency's target Technology Architecture

9.4.1 Step 7.1 Define directions for developing target architecture

In the previous stage, the team built or documented the current architecture and analyzed current architecture issues. One of the outputs from the previous stage is the Summary of Improvement Opportunities. The EA Core and working teams have also previously analyzed agency's vision/purposes & other environmental factors, and then, based on them, we can define target architecture's directions. The table below lists the activities in defining directions for target architecture.

No	Activity	Artifact / Deliverable
1	Review agency EA vision and principles	Reviewed agency EA vision and principles
2	Review environment and requirements analysis	Nil
3	Review current improvement opportunities	Nil
4	Summarize target architecture directions	Target architecture directions
5	Document and review	Reviewed draft target architecture directions
6	Obtain governance approval	Approved target architecture directions

9.4.2 Step 7.2 Build target business architecture

Description about the agency target BA

On completion, the target BA will depict the future business landscape of the government agency. Since the target BA is the future version of the current BA, both have the same artifacts or deliverables. The main difference is that the target BA describes the future scenarios – i.e., providing solutions to the current issues and challenges.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of BA
2	BA Principles	The architectural principles of BA
3	Business Areas (BRM)	The main business areas for the agency
4	Lines of Business (BRM)	The main LoBs for the agency within the business areas
5	Business Functions (BRM)	The key business function descriptions within LoBs
6	Sub-Business Functions (BRM)	The sub-business function descriptions within each business function
7	Business Processes	The target list of business process descriptions within each sub-business function highlights new, improved, and deleted processes.
8	Organization Chart	The target organization chart for the agency
9	Service Catalogue	The target list of business services; highlight new, improved or deleted services

Building the agency target BA

Table below summarizes the main activities for building the agency target BA.

No	Activity	Artifact / Deliverable
1	Review the BA purpose or direction and BA principles	Reviewed/updated BA purpose or direction statement
2	Review the BA principles	Reviewed/updated BA principles
3	Define the target business functions (BRM)	Reviewed/updated business areas, LoBs, business functions, and sub-business functions
4	Define the target business processes	List of target improved business processes for the agency
5	Define the target service catalogue	Target service catalogue
6	Document the target organization information	Target organization chart
7	Document and review	Reviewed draft target BA
8	Obtain governance approval	Approved agency target BA

9.4.3 Step 7.3 Build target application architecture

Description of the agency target AA

On completion, the target AA will depict the future application landscape of the government agency. Since the target AA is the future version of the current AA, both have the same artifacts or deliverables. The main difference is that the target AA describes the future scenarios – i.e., providing solutions to the current issues and challenges, such as new application systems.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of AA
2	AA Principles	The architectural principles of AA
3	Application Systems (ARM)	The main target application systems for the agency
4	Application Components (ARM)	The key target application components for the agency
5	Application Interfaces (ARM)	The main target application interfaces for the agency
6	Application Catalogue	The target list of applications and their attributes
7	Application Functions	The target description of the application functions
8	Application Relationships	The target description of the application relationships
9	Application Overview	The target overview description of the application systems

Building the agency target AA

Below table summarizes the main activities for building the agency target AA.

No	Activity	Artifact / Deliverable
1	Define the AA purpose or direction	Reviewed/updated AA purpose or direction statement
2	Review the AA principles	Reviewed/updated AA principles
3	Define the target application systems, application components, and application interfaces (ARM)	Target application systems, application components, and application interfaces
4	Document the target application overview	Target application overview
5	Document the target application catalogue	Target application catalogue
6	Document the target application functions and relationships	Target application functions and application relationships
7	Document and review	Reviewed draft target AA
8	Obtain governance approval	Approved agency target AA

9.4.4 Step 7.4 Build target data architecture

Description of the agency target DA

On completion, the target DA will depict the future data landscape of the government agency. Since the target DA is the future version of the current DA, both have the same artifacts or deliverables. The main difference is that the target DA describes the future scenarios – i.e., providing solutions to the current issues and challenges in terms of data usage and data exchange.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of DA
2	DA Principles	The architectural principles of DA
3	Data Model	The main target data model for the agency
4	Data Classifications (DRM)	The key target data classifications
5	Data Structure (DRM)	The main target data structures for the agency
6	Data Exchange (DRM)	The list of target data exchanges for the agency
7	Conceptual Data Model	The target pictorial high-level description of the data model for the agency
8	Logical Data Model	The target logical data models of the agency
9	Data Flow Diagrams	The various target pictorial representations of data flows for the agency
10	Database Portfolio Catalogue	The target consolidation of all databases in the agency
11	Data Dictionary	The target definitions for common data in the agency

Building the agency target DA

Below table summarizes the main activities for building the agency target DA.

No	Activity	Artifact / Deliverable
1	Define the DA purpose or direction	Reviewed/updated DA purpose or direction statement
2	Review the DA principles	Reviewed/updated DA principles
3	Update data model, data classifications, data structures, and data exchanges (DRM)	Updated target data model, data classifications, data structures, and data exchanges
4	Document the target conceptual and logical data models	Target conceptual data model and target logical data model
5	Document the target data flow diagrams	Target data flow diagrams
6	Compile the target database portfolio catalogue	Target database portfolio catalogue
7	Document the target data dictionary	Target Data dictionary
8	Document and review	Reviewed draft target DA
9	Obtain governance approval	Approved agency target DA

9.4.5 Step 7.5 Build target technology architecture

Description about the agency target TA

On completion, the target TA will depict the future infrastructure landscape of the government agency. Since the target TA is the future version of the current TA, both have the same artifacts or deliverables. The main difference is that the target TA describes the future scenarios – i.e., providing technology solutions to the current issues and challenges.

No	Artifact / Deliverable	Description
1	Purpose / Direction	The purpose of TA
2	TRM Principles	The architectural principles of TA
3	Service Area (TRM)	The highest-level technology service area
4	Service Category (TRM)	The technology service category within a service area
5	Service Standard (TRM)	The target list of technology service standards
6	Infrastructure Overview	The target high-level representation of the IT landscape in the government agency (normally in diagrammatic form)
7	Infrastructure Description	The target descriptions of the main infrastructure technologies for the future
8	Hardware Catalogue The	The list of hardware (no change; only when actual implementation)
9	Software Catalogue	The list of software (no change; only when actual implementation)

Building the agency target TA

Below table summarizes the main activities for building the agency target TA.

No	Activity	Artifact / Deliverable
1	Define the TA purpose or direction	Reviewed/updated TA purpose or direction statement
2	Review the TA principles	Reviewed/updated TA principles
3	Review the service areas and service categories (TRM)	Reviewed service categories within service areas for the agency
4	Define the target service standards	Target service standards within each service category relevant to agency
5	Describe the target infrastructure overview	High-level representation of the target IT landscape in agency
6	Update the target infrastructure descriptions	Target infrastructure technology descriptions and diagrams
7	Document and review	Reviewed draft target TA
8	Obtain governance approval	Approved agency target TA

10. Stage 8 – Develop Transition Plan

10.1 Stage Summary

With the completion of the various target architectures in the previous stage, it is now important to plan and manage the transition required from the current landscapes to the desired target landscapes. There is a big gap between current and target architectures. If these are not managed through the transition plan, it is typical that the target architecture will not be realized.

The transition plan is about defining and prioritizing intermediate activities, systems, and projects in order to implement the future state of the target architectures. The major focus of this stage is to develop a detailed transition plan consisting of projects or activities, required resources, timeline, and budget. Techniques such as ABC Analysis, Priority Analysis, ROI Analysis can be utilized in this stage.

10.2 Stage Purpose

The purpose of this stage is to manage the transition between the current state to the target state. The expected outcomes or deliverables of this stage are:
1. Transition Plan.

10.3 Stage Initiation

With the completion of the previous stage, the EA Core and working teams have to ensure that the following deliverables are in place:
1. Target Business Architecture
2. Target Application Architecture
3. Target Data Architecture
4. Target Technology Architecture.

Depending on the EA scope and development strategy, the government agency has to ensure that the corresponding target architectures are completed. If the government agency intends to build all architectures, then it needs the four above target architectures. However, if the government agency is doing a specific EA scope, such as data and technology consolidation, then it needs to have at least the target data and technology architectures in place.

10.4 Key Steps in Stage 8

Below table lists the key activities and expected deliverables for stage 7.

No	Description	Deliverable
8	**Develop Transition Plan**	**Transition Plan**
8.1	Define transition projects	Transition project list
8.2	Prioritize transition projects	Prioritized transition project list
8.3	Create transition roadmap	Transition roadmap
8.4	Analyze and document the required resources and outcomes	Transition resource plan
8.5	Obtaining governance approval	Approved transition roadmap and resource plan

10.4.1 Step 8.1 Define transition projects

This activity is about defining and prioritizing transition projects.

No	Activity	Description
1	Define Ideas for Improvement	Improvement ideas are defined by classifying them into business/application sectors or with agency's core business functions.
2	Define Transition Projects	Transition projects are defined by listing up ideas for improvement, a target architecture, and each architecture area. List transition projects from the current and target architecture gap analysis and complete the project list by adjusting and organizing them while considering priority, sequence, etc.

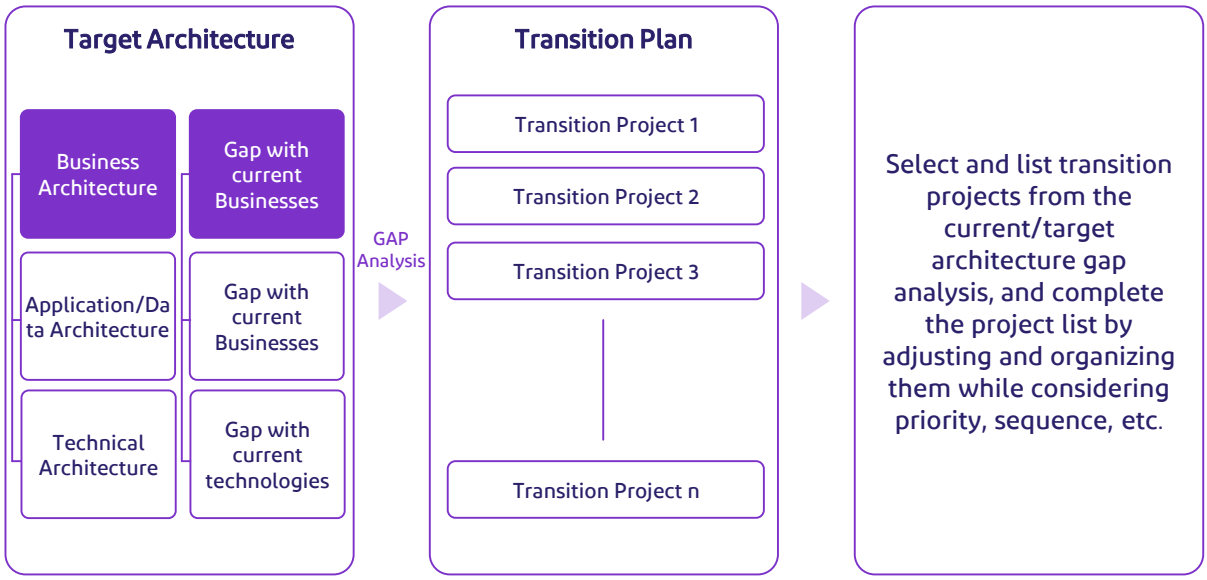

Figure 9 Example selection method for the transition plan

11. Stage 9 – Develop Management Plan

11.1 Stage Summary

This stage is about developing the EA usage and management plans so that EA processes and values become an integral part of the agency's standard operating procedures. To ensure continued EA value delivery to the government agency, it is necessary and important to incorporate EA management plans into the government agency.

11.2 Stage Purpose

The purpose of this stage is to analyze and document the plan to ensure the EA deliverables are accepted and use by the different stakeholders in the government agency. The expected outcomes or deliverables of this stage are:

1. EA usage plan
2. EA management plan

11.3 Stage Initiation

With the completion of the previous stage, the EA Core and working teams have to ensure that the following deliverables are in place:

1. Transition Roadmap
2. Transition Resource Plan.

This stage is also a follow-up on important policies or direction statements previously defined under the Continuous Governance section – on particular, on EA usage and EA management directions.

11.4 Key Steps in Stage 9

The table below lists the key activities and expected deliverables for stage 9.

No	Description	Deliverable
9	**Develop Management Plan**	**EA Usage and Management Plans**
9.1	Develop an EA usage plan	EA usage plan
9.2	Develop an EA management plan	EA management plan
9.3	Obtaining Governance Approval	Approved EA usage and management plans

Management and Governance

Under the Continuous Governance section, the EA Governance Committee has set up clear directions on the EA usage and management plans. This stage will focus on the development of these plans.

12. Stage 10 – Execute and Maintain

12.1 Stage Summary

This is the last stage, where a government agency executes and maintains its EA. Having covered many stages in the EA journey, this last stage concerns taking action to make the government agency's EA a reality.

12.2 Stage Purpose

The purpose of this stage is to finally implement the EA artifacts that were documented in the previous stages. The following are the expected outcomes of this stage:

1. Promote or market the government agency's EA so that government employees are aware of the usefulness of EA
2. Train some employees on using and maintaining the various information related to EA
3. Execute or implement the EA, including the management of the transition activities

12.3 Stage Initiation

With the completion of the previous stages, the EA Core Team and working teams have to ensure that the following deliverables, in addition to the target architectures, are in place:

1. EA Management Plan
2. EA Usage Plan
3. EA Transition Plan

With all the above plans, the EA Core Team and working teams can start the execution phase.

12.4 Key Steps in Stage 10

The last stage is the final challenge for the EA Core team and working team members to materialize their previous efforts. The key steps in Stage 10 are shown in Table below.

No	Description	Deliverable
10	Execute and Maintain	
10.1	Implement the EA Usage & Management Plan	Project/Program Management Deliverables
10.2	Implement the EA Transition Roadmap	Project/Program Management Deliverables

For more details, visit the National Enterprise Architecture Program page

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