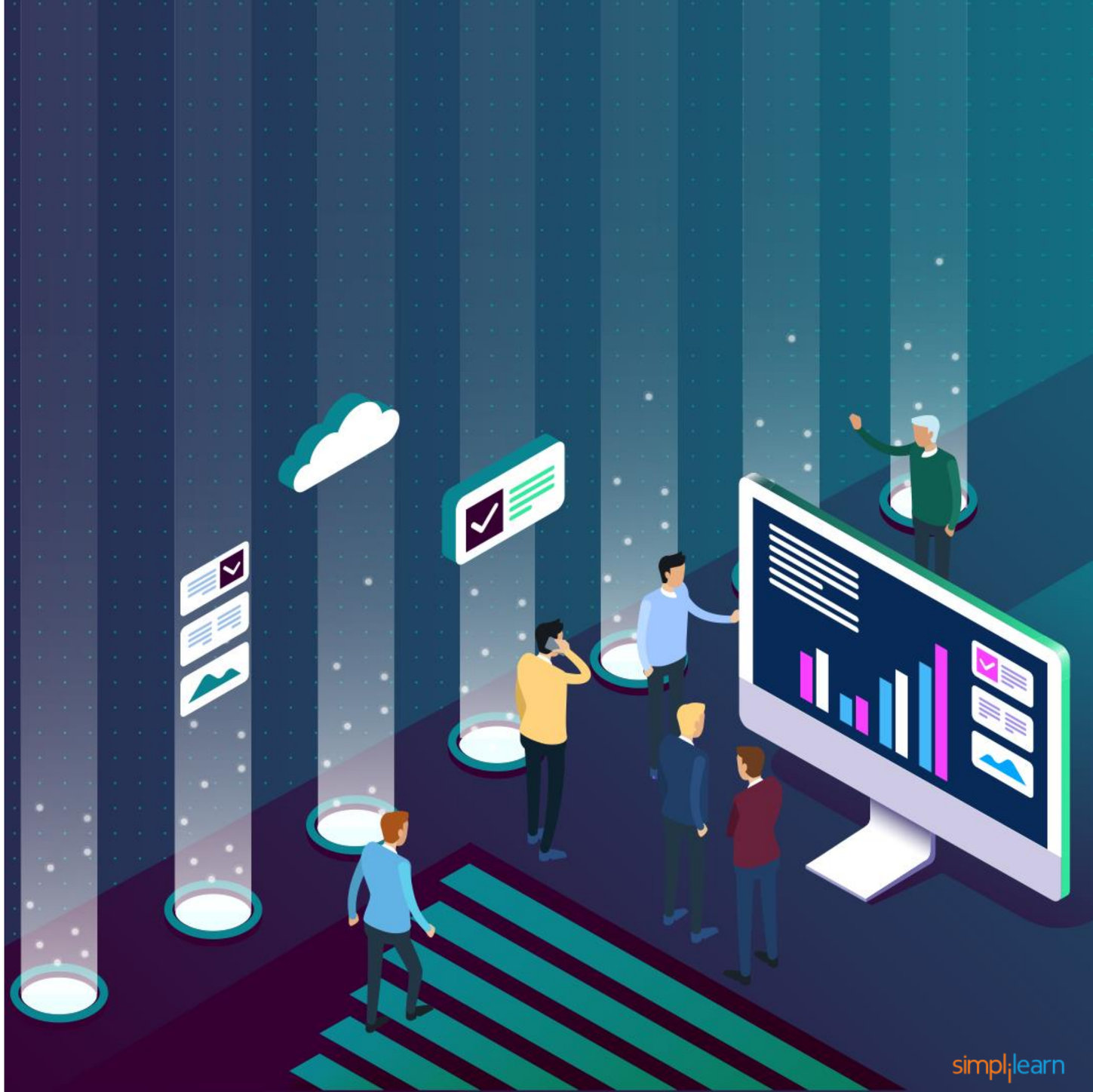
TOGAF® Enterprise Architecture Training Course (Foundation)



Unit 3 - Introduction to the ADM

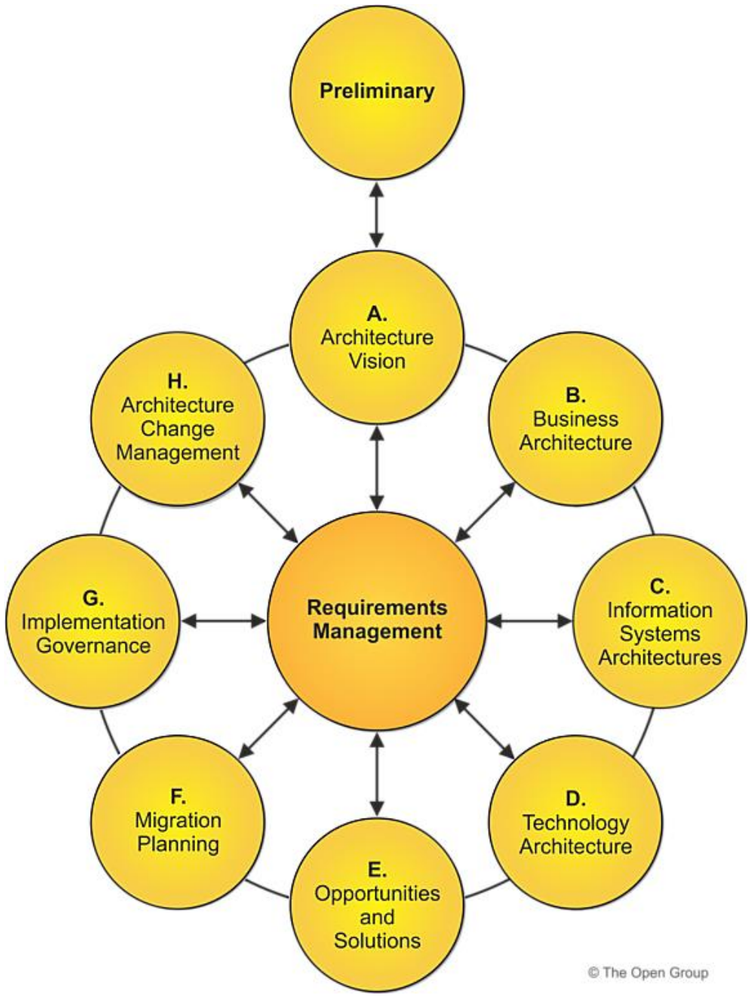
Unit Objectives

Understanding the Architecture Development Method (ADM), the purpose and objectives of each phase, including how to adapt and scope the ADM for use. Topics include:

- The ADM and its phases
- Draft and Approved status for deliverables
- The iterative approach of the ADM
- The need to govern Enterprise Architecture
- How to scope an architecture
- Architecture alternatives and trade-offs
- The purpose and objectives of each of the ADM phases
- How architecture can be applied to support Agile software development

3.1 The TOGAF® ADM and its Phases

The TOGAF® ADM



- The ADM is a tested and repeatable process for developing architectures.
- All of these activities are carried out within an iterative cycle of continuous architecture definition and realization that allows organizations to transform their enterprises in a controlled manner in response to Business Goals and opportunities.

ADM Phases Summary

The Preliminary Phase: The preparation and initiation activities required to create an Architecture Capability including customization of the TOGAF framework and definition of Architecture Principles

- **Phase A: Architecture Vision:** The initial phase of an architecture development cycle It includes information about defining the scope of the architecture development initiative, identifying the stakeholders, creating the Architecture Vision, and obtaining approval to proceed with the architecture development.
- **Phase B: Business Architecture:** Development of a Business Architecture to support the agreed Architecture Vision
- **Phase C: Information Systems Architectures:** Development of Information Systems Architectures to support the agreed Architecture Vision
- **Phase D: Technology Architecture:** Development of the Technology Architecture to support the agreed Architecture Vision

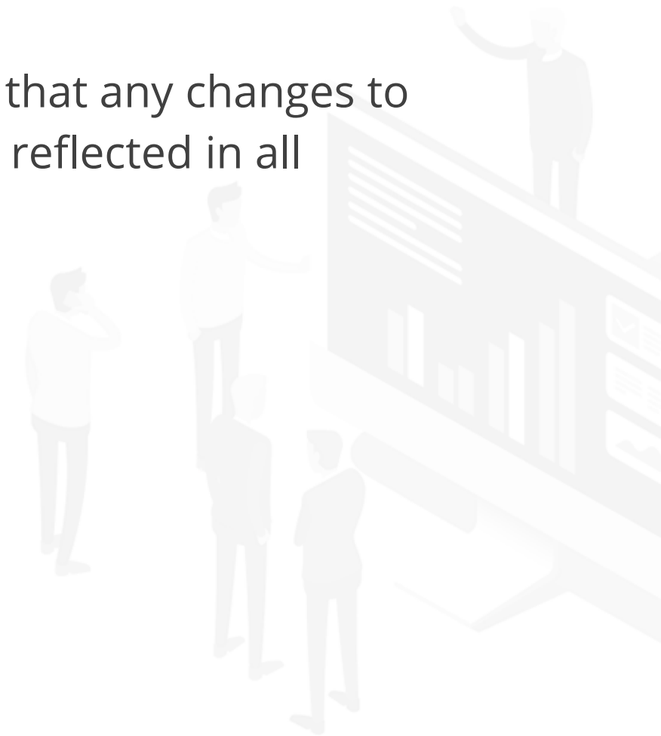
ADM Phases Summary

- **Phase E: Opportunities & Solutions:** Initial implementation planning and the identification of delivery vehicles for the architecture defined in the previous phases
- **Phase F: Migration Planning:** How to move from the Baseline to the Target Architectures by finalizing a detailed Implementation and Migration Plan
- **Phase G: Implementation Governance:** Architectural oversight of the implementation
- **Phase H: Architecture Change Management:** Procedures for managing change to the new architecture
- **Requirements Management:** Operates the process of managing architecture requirements throughout the ADM

ADM Phases

- The phases of the ADM cycle are further divided into steps, which are defined in the detailed description of each phase.

- The Requirements Management phase is a continuous phase that ensures that any changes to requirements are handled through appropriate governance processes and reflected in all other phases.



3.2 “Draft” and “Approved” Deliverables

“Draft” versus “Approved” Status

- In the ADM, documents which are under development and have not undergone any formal review and approval process are designated “draft”.

- In the ADM, documents which have been reviewed and approved are designated “approved” in accordance with the organization’s governance practices. Approved does not necessarily mean finalized.

3.3 Iteration and the ADM

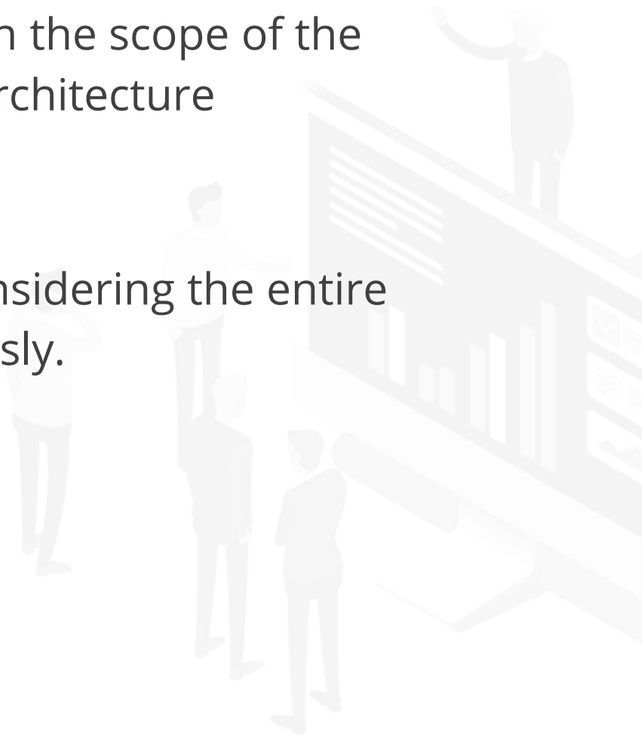
Iteration and the ADM

The ADM is iterative, over the whole process, between phases, and within phases.

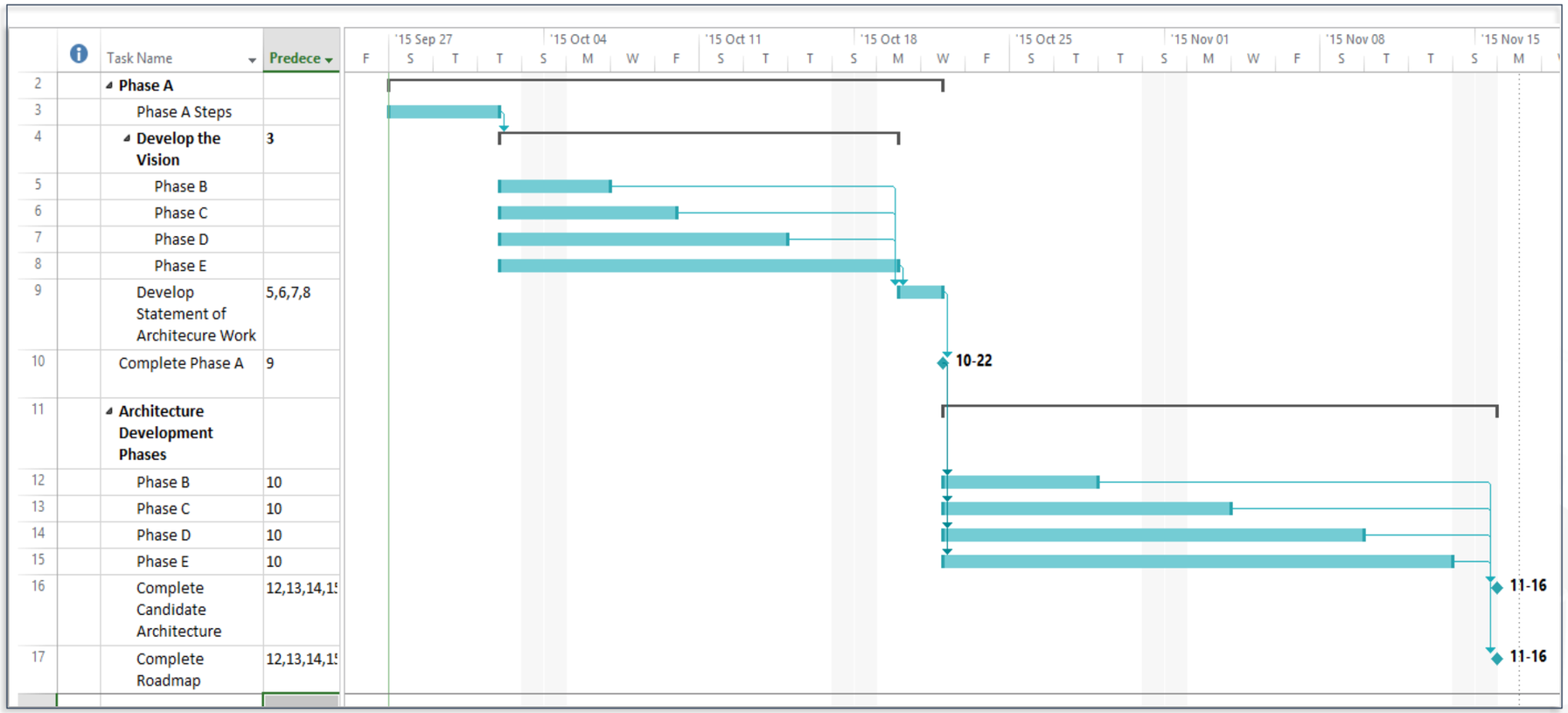
- For each iteration of the ADM, a fresh decision must be taken as to:
- The breadth of coverage of the enterprise to be defined
- The level of detail to be defined
- The extent of the time period aimed at, including the number and extent of any intermediate time periods
- The architectural assets to be leveraged

Essential Information Flows

- Information flows also result in iteration.
- Every time the Enterprise Architecture team is undertaking any activity within the scope of the ADM it is executing a phase and developing the contents of the Enterprise Architecture Landscape.
- The inter-dependent nature of developing a Target Architecture requires considering the entire architecture, resulting gaps, and resulting work to clear the gap simultaneously.



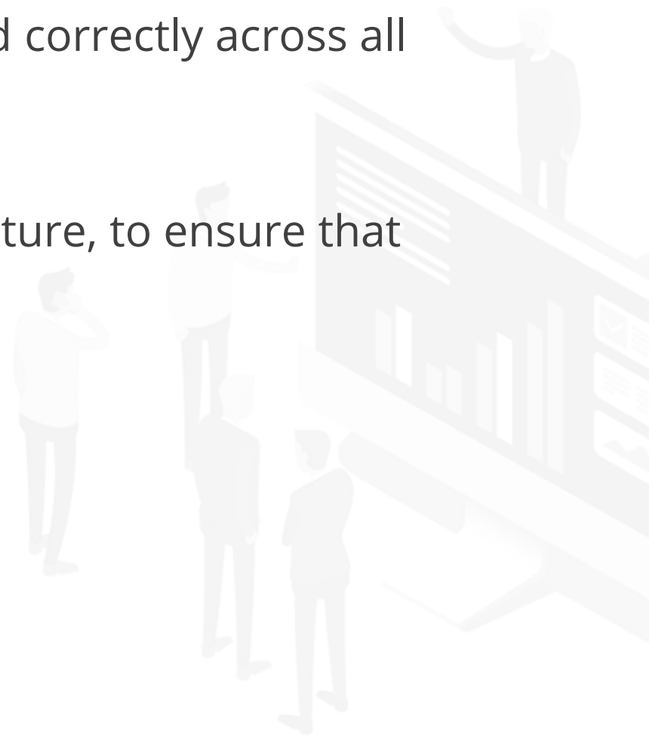
Iteration via Information Flow



3.4 Governing the Creation, Development, and Maintenance of Enterprise Architecture

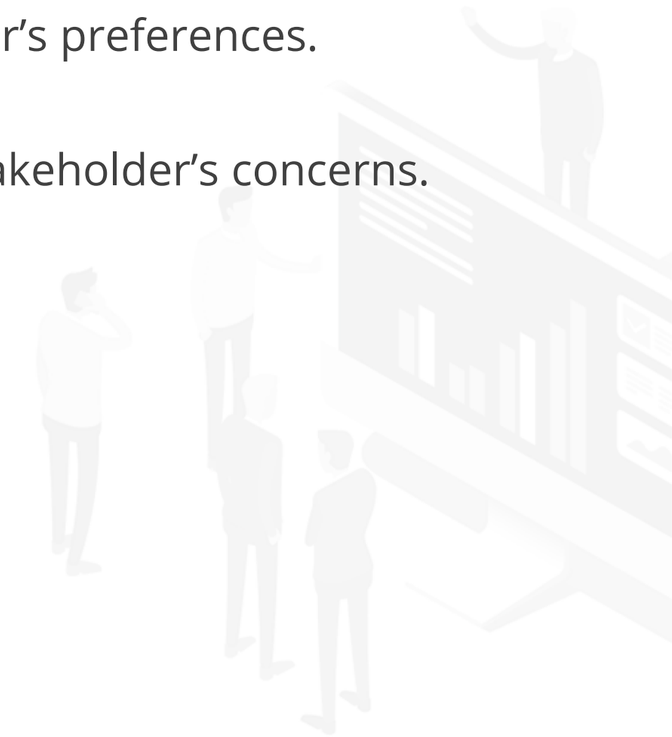
Governing the ADM

- The ADM is a key process to be managed in the same manner as other architecture artifacts.
- The Architecture Board should be satisfied that the method is being applied correctly across all phases of an architecture development iteration.
- Compliance with the ADM is fundamental to the governance of the architecture, to ensure that all considerations are made and all required deliverables are produced.



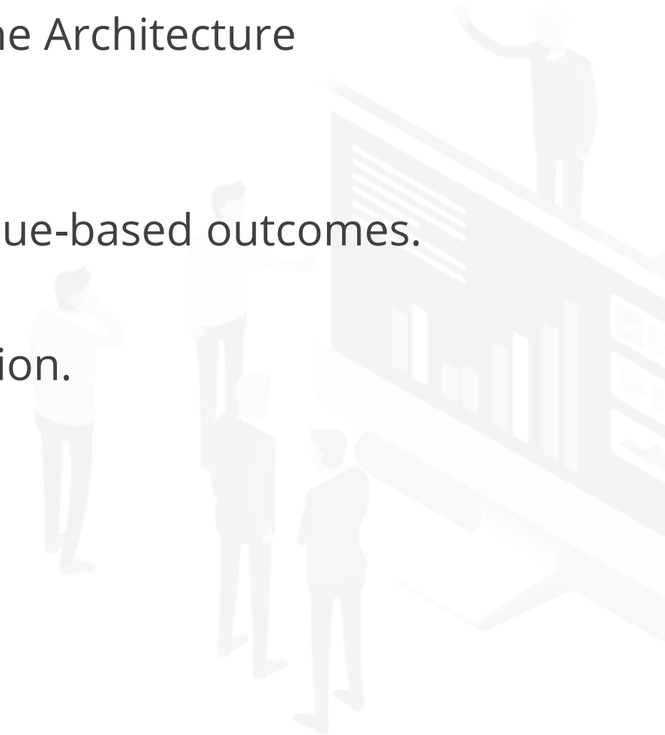
Governing the Architecture

- The practitioner is directed to develop an architecture within a controlled scope.
- Within that controlled scope, the practitioner is directed to the stakeholder's preferences.
- The governance test will ask whether the practitioner is addressing the stakeholder's concerns.



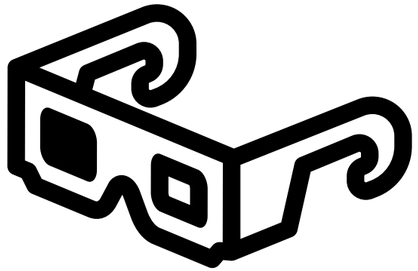
Governing Change

- Every Architecture Requirements Specification enables control of the implementation team.
- Design, implementation, and other change choices can be tested against the Architecture Requirements Specification.
- The implementation team is directed to create changes with intentional value-based outcomes.
- Best practice governance enables the organization to control value realization.



Target Checklist

An example of a target checklist to execute Architecture Governance is included in the handouts.

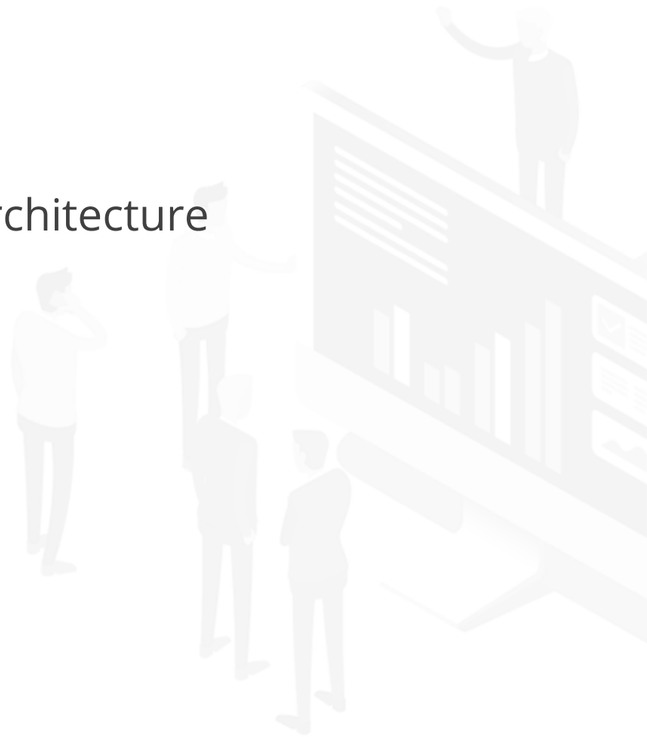


3.5 How to Scope an Architecture

Why Constrain the Scope of Architectural Activity?

There are many reasons to constrain (or restrict) the scope of the architectural activity to be undertaken, most of which relate to limits in:

- The organizational authority of the team producing the architecture
- The objectives and stakeholder concerns to be addressed within the architecture
- The availability of people, finance, and other resources



Scoping Dimensions

Typically, the scope of an architecture is first expressed in terms of breadth, depth, and time.

Once these dimensions are understood, a suitable combination of architecture domains can be selected that are appropriate to the problem being addressed.

Dimensions: Breadth & Depth

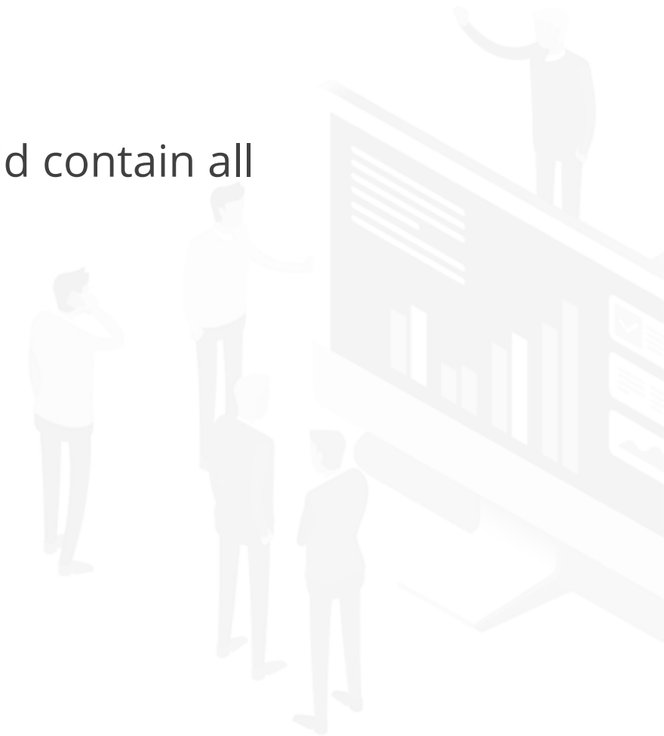
Breadth: what is the full extent of the enterprise, and what part of that extent will this architecting effort deal with?

Depth: to what level of detail should the architecting effort go?

Dimensions: Time Period and Architecture Domains

Time Period: what is the time period that needs to be articulated for the Architecture Vision, and does it make sense for the same period to be covered in the detailed Architecture Description?

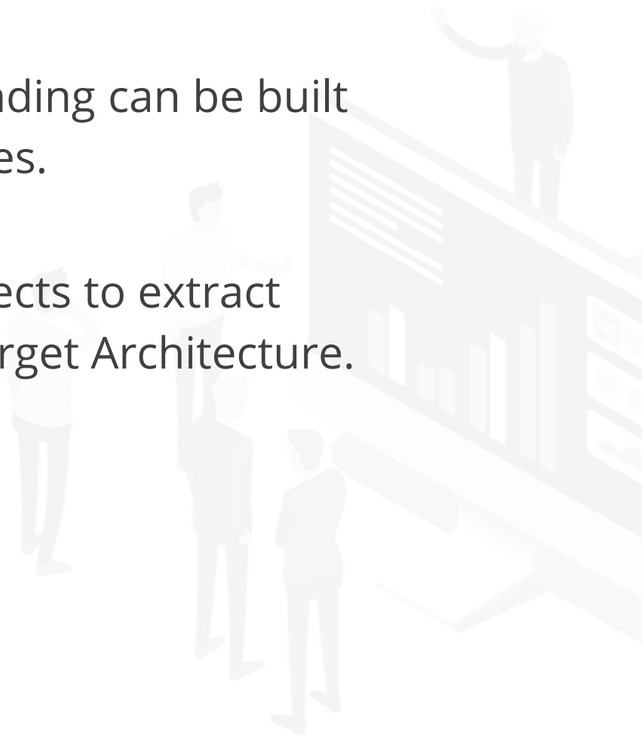
Architecture Domains: a complete Enterprise Architecture Description should contain all four architecture domains (Business, Data, Application, Technology).



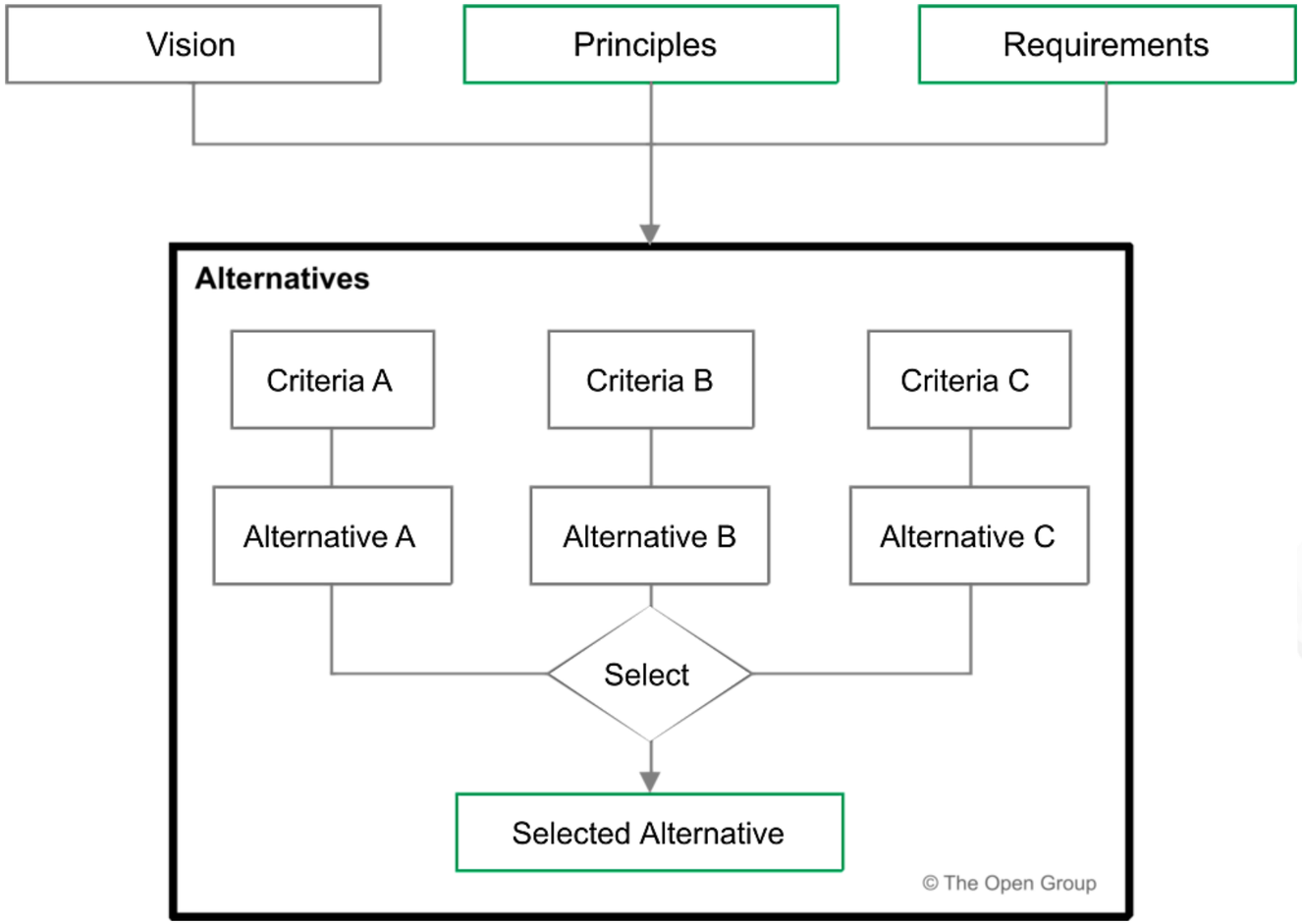
3.6 Architecture Alternatives, Concerns, and Trade-Off

Why Consider Architecture Alternatives?

- There is often more than one possible Target Architecture that would conform to the Architecture Vision, Architecture Principles, and Requirements.
- By identifying and considering alternative Target Architectures an understanding can be built of the different possibilities and trade-offs identified between the alternatives.
- Presenting different alternatives and trade-offs to stakeholders helps architects to extract hidden agendas, principles, and requirements that could impact the final Target Architecture.



Architecture Alternatives Method



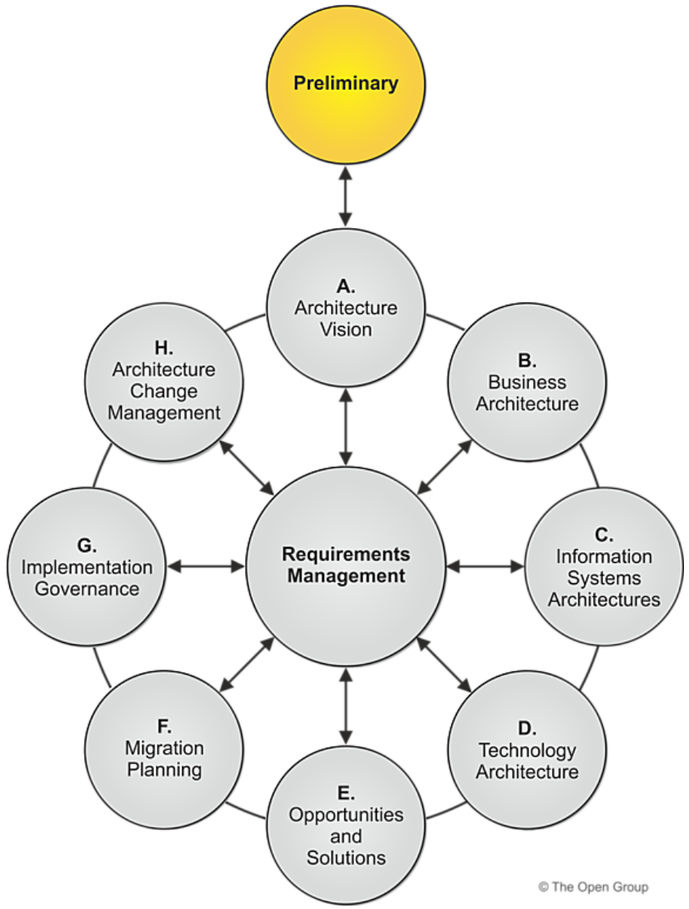
3.7 Purpose: Preliminary Phase

Preliminary Phase: Purpose

- The purpose of the Preliminary Phase is to develop the Enterprise Architecture Capability.
- It is designed as a customized journey of the TOGAF ADM.

3.8 Objectives: Preliminary Phase

The Objectives of the Preliminary Phase



- Determine the Architecture Capability desired by the organization
- Establish the Architecture Capability

Determine the Architecture Capability Desired by the Organization

- Review the organizational context for conducting Enterprise Architecture
- Identify and scope the elements of the enterprise organizations affected by the Architecture Capability
- Identify the established frameworks, methods, and processes that intersect with the Architecture Capability
- Establish Capability Maturity target

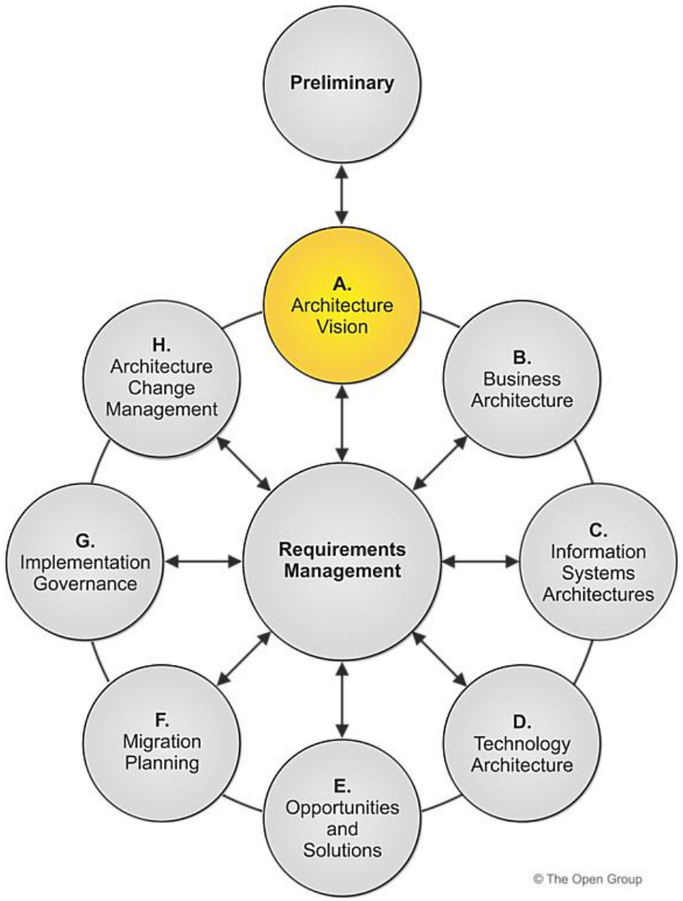
Establish the Architecture Capability

- Define and establish the Organizational Model for Enterprise Architecture
- Define and establish the detailed process and resources for Architecture Governance
- Select and implement tools that support the Architecture Capability
- Define the Architecture Principles

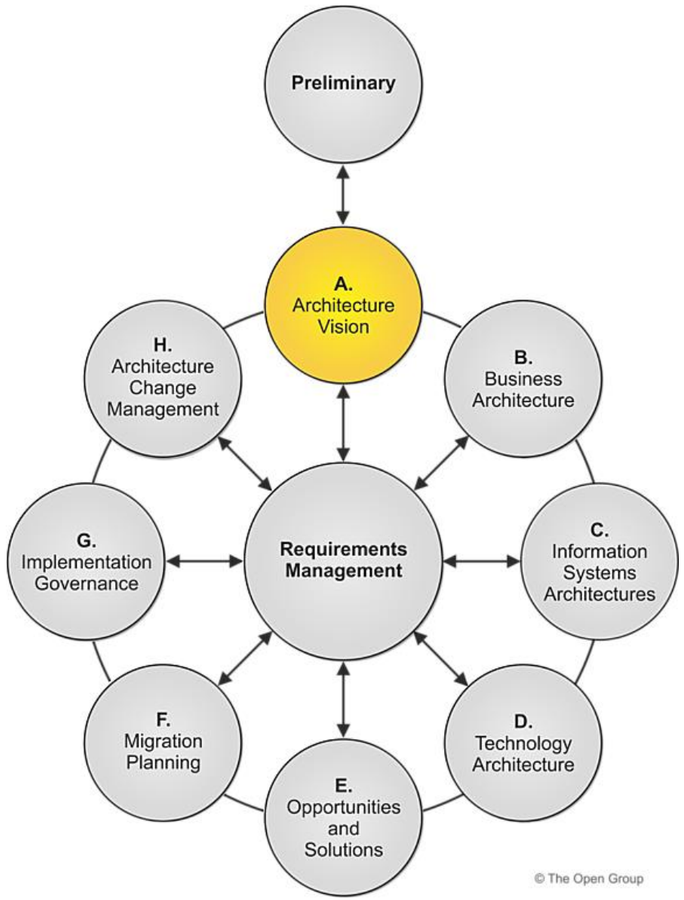
3.9 Purpose: Phase A

Phase A: Purpose

To identify key stakeholders, and reach agreement in the Architecture Vision document on a summary of the target and the work to reach the target



Phase A: The Starting Point



The set-up essentials are:

- Define the scope of the Architecture Project
- Identify stakeholders, concerns, and associated requirements
- Assess the capability of the Enterprise Architecture team

The completion essentials are:

- Key stakeholder agreement on a summary of the target and the work to reach the target

Essential ADM Output and Knowledge

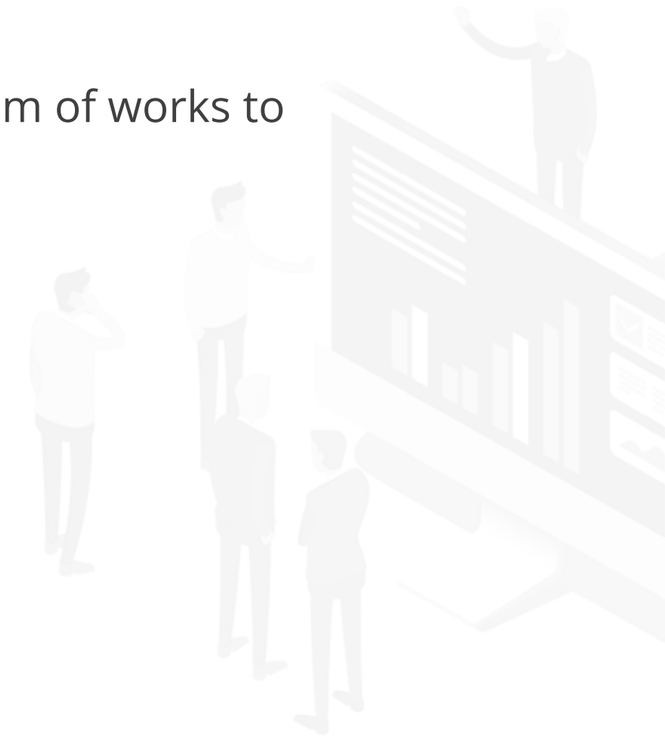
Phase	Output & Outcome	Essential Knowledge
Phase A: Architecture Vision	Sufficient documentation to get permission to proceed. Permission to proceed to develop a Target Architecture to prove out a summary target.	The scope of the problem being addressed. Those who have interests that are fundamental to the problem being addressed. (Stakeholders & Concerns) What summary answer to the problem is acceptable to the stakeholders? (Architecture Vision) Stakeholder priority and preference. What value does the summary answer provide?

3.10 Objectives: Phase A

The Objectives of Phase A

- Develop a high-level aspirational vision of the capabilities and business value to be delivered as a result of the proposed Enterprise Architecture.

- Obtain approval for a Statement of Architecture Work that defines a program of works to develop and deploy the architecture outlined in the Architecture Vision.



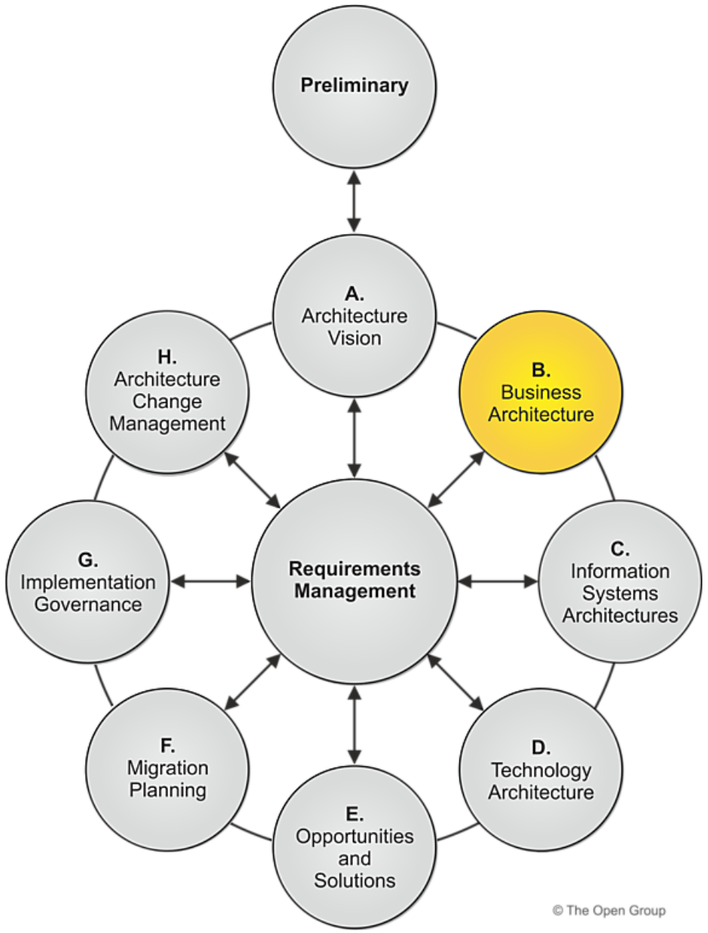
3.11 Purpose: Phases B, C, and D

Essential ADM Output and Knowledge

Phase	Output & Outcome	Essential Knowledge
Phase B, Phase C, & Phase D	A set of domain architectures approved by the stakeholders for the problem being addressed, with a set of gaps, and work to clear the gaps understood by the stakeholders.	How does the current enterprise fail to meet the preferences of the stakeholders? What must change to enable the enterprise to meet the preferences of the stakeholders? (Gaps) What work is necessary to realize the changes, that is consistent with the additional value being created? (Work Package) How do stakeholder priority and preference adjust in response to value, effort, and risk of change? (Stakeholder Requirements)

3.12 Objectives: Phase B

The Objectives of Phase B

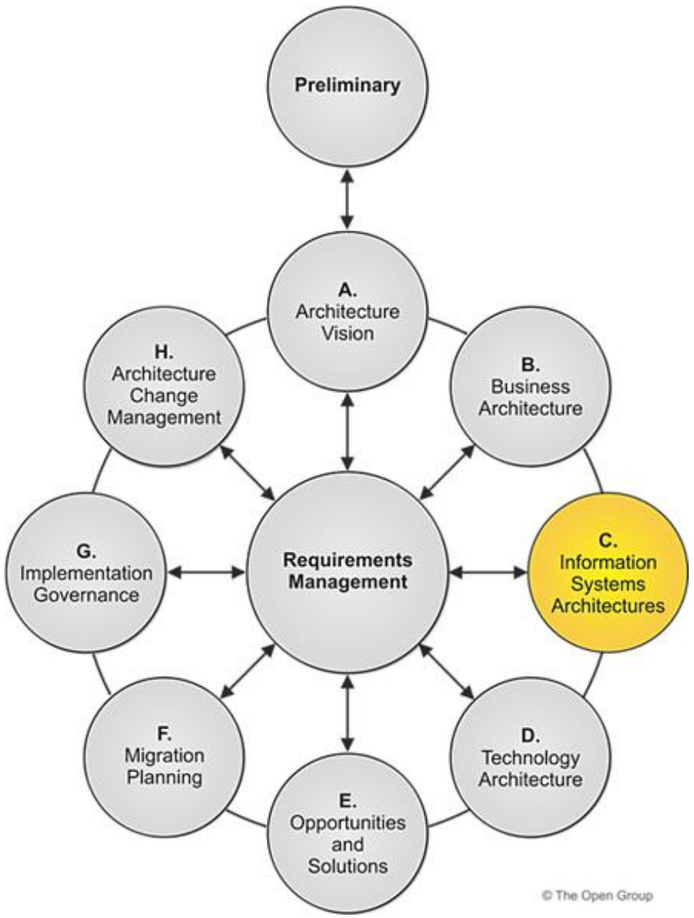


- Develop the Target Business Architecture that describes how the enterprise needs to operate to achieve the Business Goals, and respond to the strategic drivers set out in the Architecture Vision, in a way that addresses the Statement of Architecture Work and stakeholder concerns.

- Identify candidate Architecture Roadmap components based upon gaps between the Baseline and Target Business Architectures.

3.13 Objectives: Phase C: Data Architecture and Application Architecture

The Objectives of Phase C



- Develop the Target Information Systems Architectures, describing how the enterprise's Information Systems Architectures will enable the Business Architecture and the Architecture Vision, in a way that addresses the Statement of Architecture Work and stakeholder concerns.

- Identify candidate Architecture Roadmap components based upon gaps between the Baseline and Target Information Systems (Data and Application) Architectures.

The Objectives of Phase C - Data Architecture

- Develop the Target Data Architecture that enables the Business Architecture and the Architecture Vision, in a way that addresses the Statement of Architecture Work and stakeholder concerns.

- Identify candidate Architecture Roadmap components based upon gaps between the Baseline and Target Data Architectures.

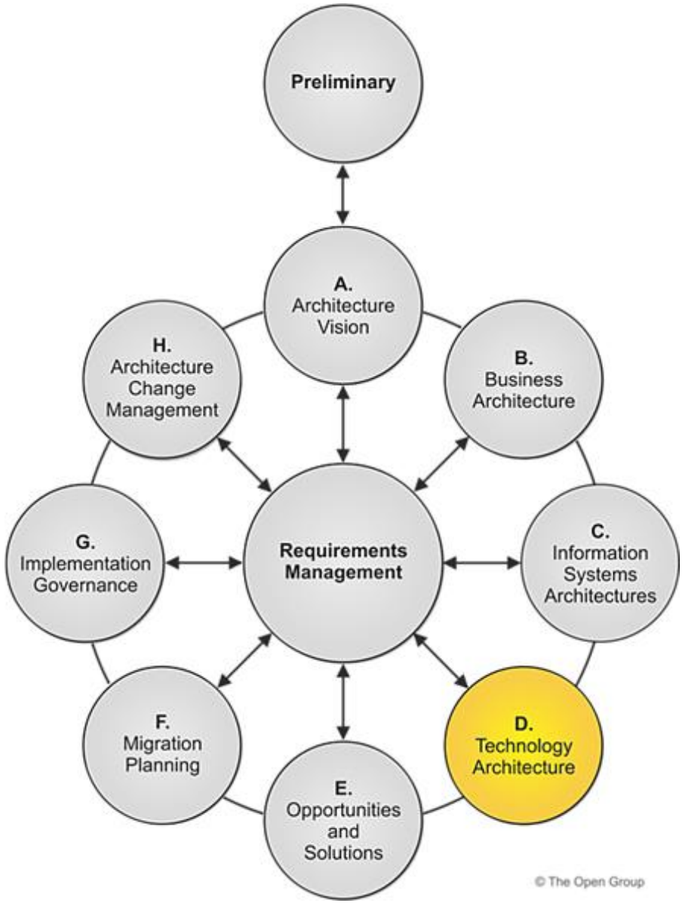
The Objectives of Phase C - Application Architecture

- Develop the Target Application Architecture that enables the Business Architecture and the Architecture Vision, in a way that addresses the Statement of Architecture Work and stakeholder concerns.

- Identify candidate Architecture Roadmap components based upon gaps between the Baseline and Target Application Architectures.

3.14 Objectives: Phase D

The Objectives of Phase D



- Develop the Target Technology Architecture that enables the Architecture Vision, target business, data, and application building blocks to be delivered through technology components and technology services, in a way that addresses the Statement of Architecture Work and stakeholder concerns.
- Identify candidate Architecture Roadmap components based upon gaps between the Baseline and Target Technology Architectures.

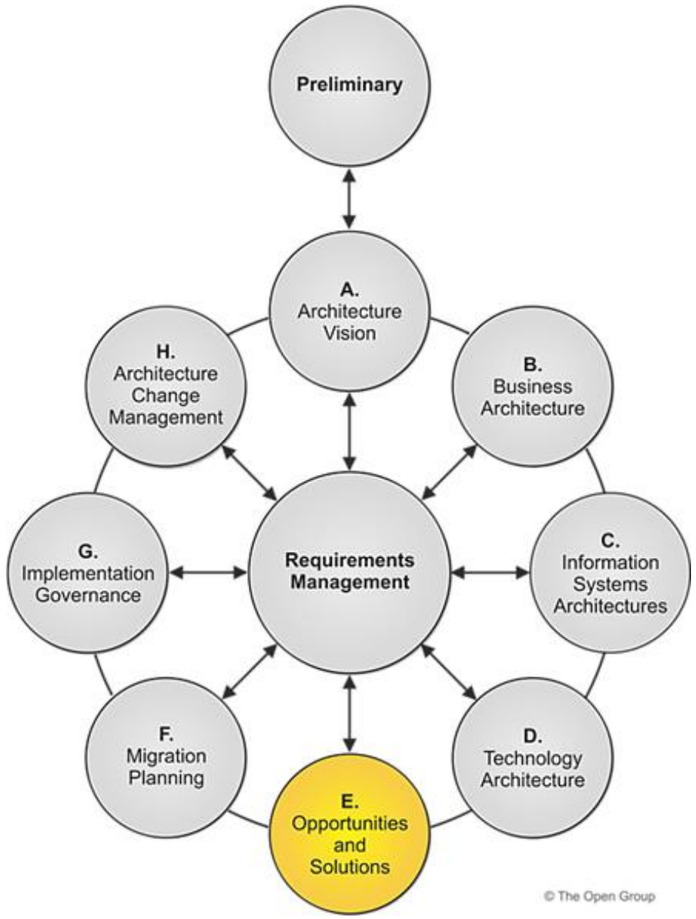
3.15 Purpose: Phase E

Essential ADM Output and Knowledge

Phase	Output & Outcome	Essential Knowledge
Phase E: Opportunities & Solutions	A set of work packages that address the set of gaps, with an indication of value produced and effort required, and dependencies between the work packages to reach the adjusted target.	Dependency between the set of changes. (Work Package & Gap dependency) Value, effort, and risk associated with each change and work package. How stakeholder priority and preference adjust in response to value, effort, and risk of change.

3.16 Objectives: Phase E

The Objectives of Phase E



- Generate the initial complete version of the Architecture Roadmap, based upon the gap analysis and candidate Architecture Roadmap components from Phases B, C, and D.
- Determine whether an incremental approach is required, and if so identify Transition Architectures that will deliver continuous business value.
- Define the overall Solution Building Blocks (SBBs) to finalize the Target Architecture based on the ABBs.

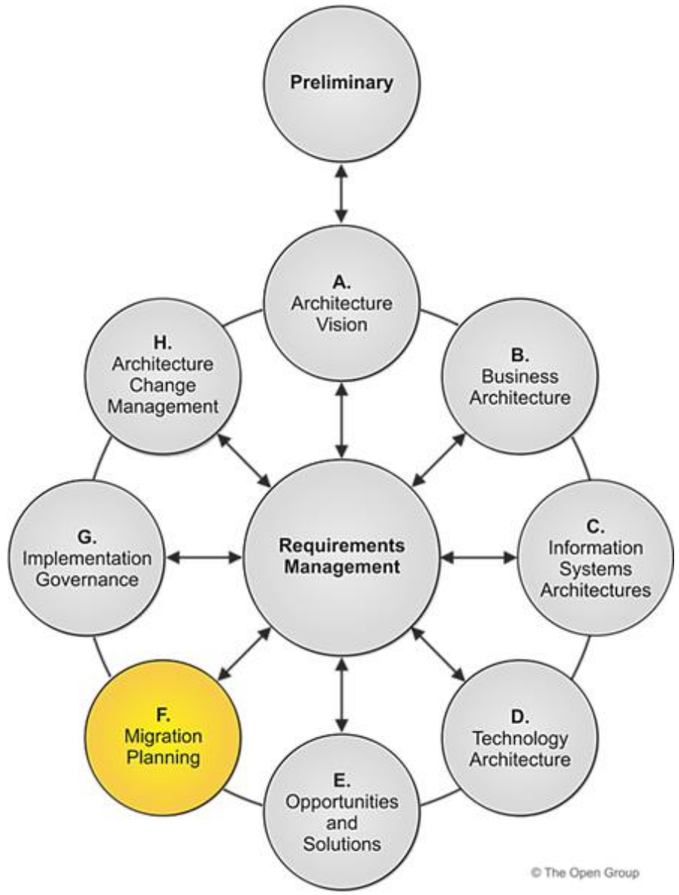
3.17 Purpose: Phase F

Essential ADM Output and Knowledge

Phase	Output & Outcome	Essential Knowledge
Phase F: Implementation and Migration Plan	An approved set of projects, containing the objective and any necessary constraints, resources required, and start and finish dates.	Resources available to undertake the change. How stakeholder priority and preference adjust in response to value, effort, and risk of change. (Stakeholder Requirements)

3.18 Objectives: Phase F

The Objectives of Phase F



- Finalize the Architecture Roadmap and the supporting Implementation and Migration Plan.
- Ensure that the Implementation and Migration Plan is co-ordinated with the enterprise's approach to managing and implementing change in the enterprise's overall change portfolio.
- Ensure that the business value and cost of work packages and Transition Architectures is understood by key stakeholders.

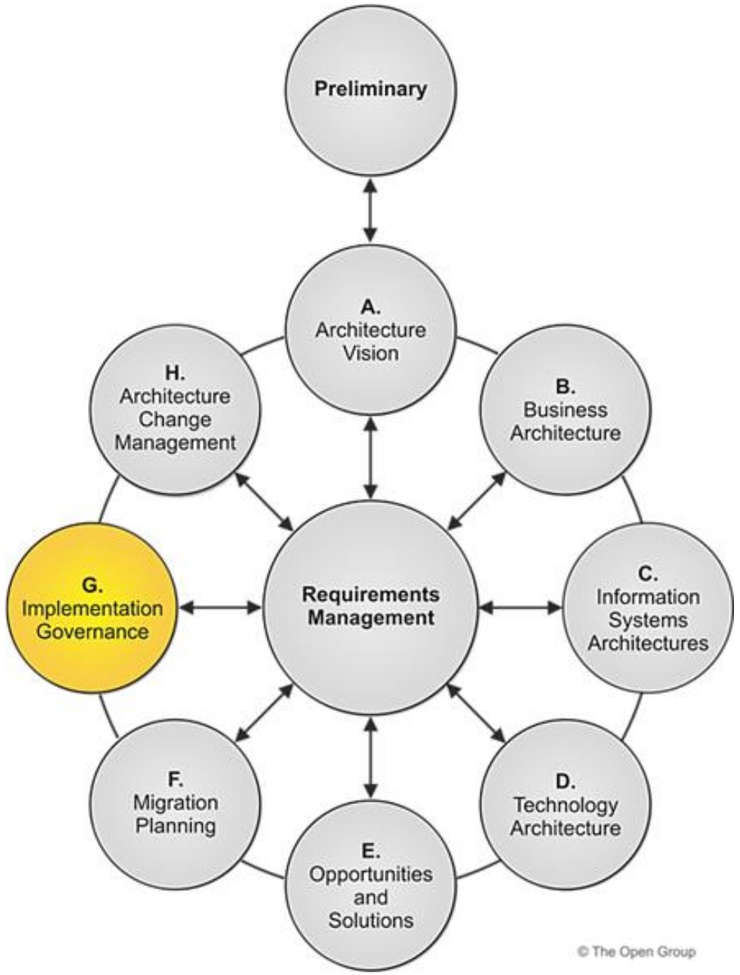
3.19 Purpose: Phase G

Essential ADM Output and Knowledge

Phase	Output & Outcome	Essential Knowledge
Phase G: Implementation Governance	Completion of the projects to implement the changes necessary to reach the adjusted target state.	Purpose and constraints on the implementation team. (Gap, Architecture Requirement Specification, Control) How stakeholder priority and preference adjust in response to success, value, effort, and risk of change. (Stakeholder Requirements)

3.20 Objectives: Phase G

The Objectives of Phase G



- Ensure conformance with the Target Architecture by Implementation Projects.
- Perform appropriate Architecture Governance functions for the solution and any implementation-driven architecture Change Requests.

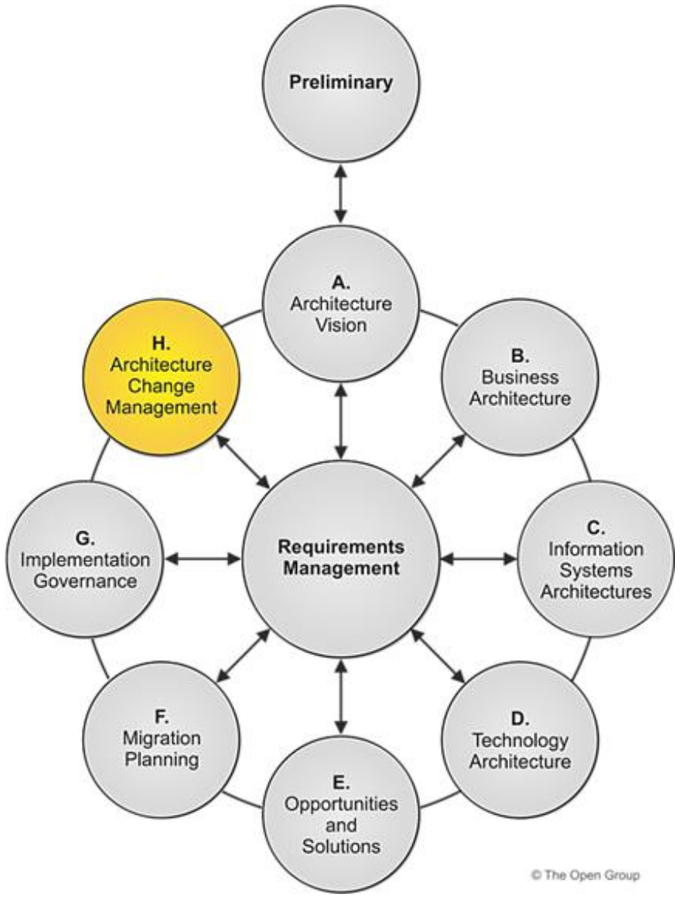
3.21 Purpose: Phase H

Essential ADM Output and Knowledge

Phase	Output & Outcome	Essential Knowledge
Phase H: Architecture Change Management	Direction to proceed and start developing a Target Architecture that addresses perceived, real, or anticipated shortfalls in the enterprise relative to stakeholder preferences.	Gaps between approved target, or preference, and realization from prior work. (Value Realization) Changes in preference or priority. (Stakeholder Requirements)

3.22 Objectives: Phase H

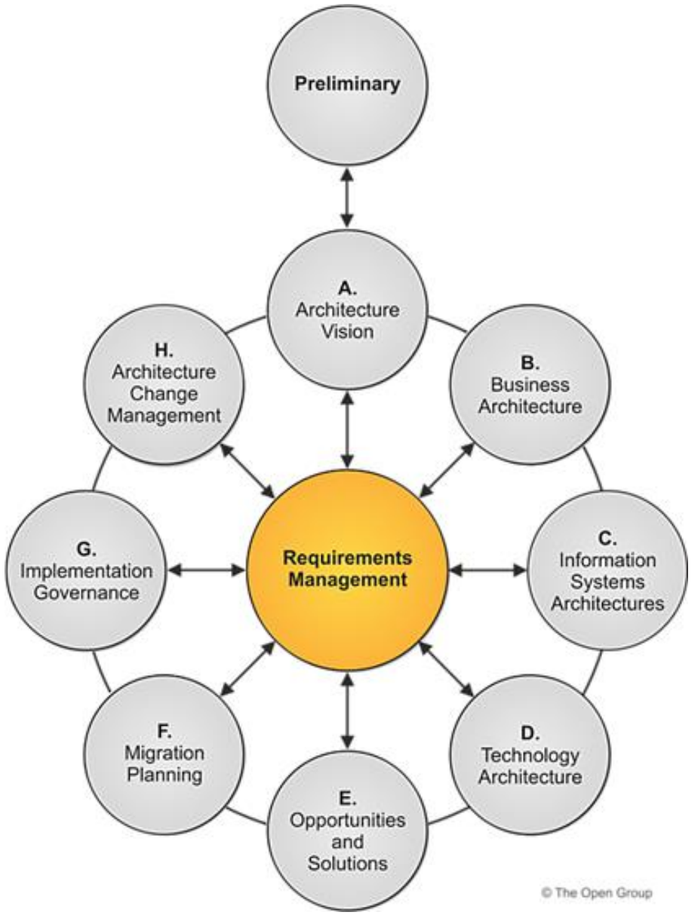
The Objectives of Phase H



- Ensure that the architecture development cycle is maintained.
- Ensure that the Architecture Governance framework is executed.
- Ensure that the Enterprise Architecture Capability meets current requirements.

3.23 Objectives: Requirements Management

The Objectives of the Requirements Management Process



- Ensure that the Requirements Management process is sustained and operates for all relevant ADM phases.
- Manage Architecture Requirements identified during any execution of the ADM cycle or a phase.
- Ensure that relevant Architecture Requirements are available for use by each phase as the phase is executed.

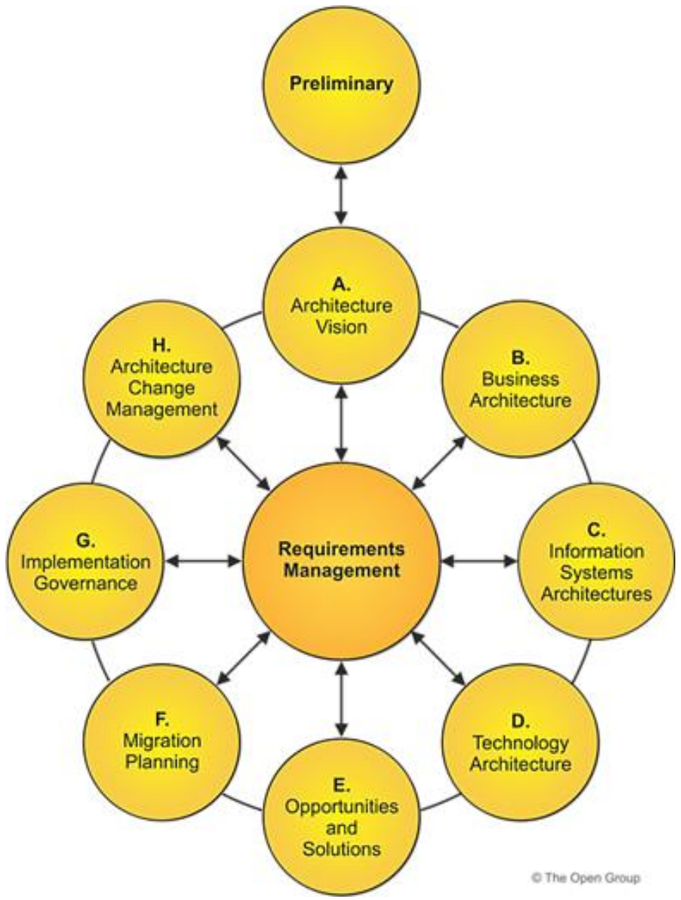
3.24 Purpose: Requirements Management

Requirements Management - the Center of Architecture Development

- The TOGAF framework places requirements management and stakeholder engagement at the center of architecture development.
- Stakeholders own the architecture and the value preference and priority the architecture is expected to enable.
- Effective requirements management is dependent upon clear traceability from the organization's vision, mission, business model, and strategies through the most detailed statement of requirement.

3.25 Information Flow Between ADM Phases

Information Flow and the TOGAF® ADM



- The TOGAF ADM is a logical method that places key activity steps together for the purpose of understanding relationship of activity and clarifying information flow.
- The graphic is a stylized path that demonstrates essential information flow.

3.26 How Developing Architecture can be Applied to Support Agile Software Development

The TOGAF® Standard Aligns to Agile Software Development in Phase G

- Architecture can be used to identify what products the enterprise needs, the boundary of the products, and what constraints a product owner has.
- Architecture can also be used to set of constraints that limit the choices of the Agile team.
- In Phase G (Implementation Governance) the practitioner serves the stakeholders guarding the mission, vision, goals, and investment roadmap.