Opportunities & Solutions: Here we move away from a wholly architectural perspective to figure out how you're going to deliver, fund and resource the changes.

Migration Planning: The detailed planning here is more the province of project managers than architects, but get involved to make sure commitment is in line with the architecture vision.

Implementation Governance: Along with the policing role of monitoring each project and solution, this phase needs a delicate political sensitivity to remind people of the long term vision and persuade them not to compromise.

Architecture Change Management: When projects and solutions are unable to meet original expectations - due to cuts in spending, changes in priority or lack of funding and resources - you need to revisit the other phases to address the consequences.

Requirements Management: At the heart of the EA role, this is where a good EA can manage diverse stakeholder concerns and create an integrated view of how the architecture will evolve. All work products created or used in the other phases are managed here!

Preliminary: Although out of the main circle, you need to keep referring back to it to assess effectiveness of both the EA team and its initiatives. This stage is about the on-going improvement of EA capabilities.

Architecture Vision: This isn’t a one-off before everything else - architecture visions emerge slowly. And EA is unique in having a holistic view of all stakeholders, complexity and change, and this is constantly evolving. Communication is the key.

Business Architecture: It’s important to be independent from technology - planned or current. Focus on business capabilities, process, and products, and relate all analysis to business from an architectural perspective.

Information System Architecture: ISA breaks down into data and applications. It doesn’t matter which one you start with - it’s likely that you’ll have to adjust both as the bigger picture emerges.

Technology Architecture: Focus here is on architecture of IT platforms, especially hardware and communications. It’s important to separate the different concerns of business, information systems and technology stakeholders.
The Preliminary Phase

Specifically, the Preliminary Phase is where definitions are established for:
- What the enterprise is
- Key drivers and elements in the organizational context
- Requirements for architecture work
- Architecture principles
- The framework to be used
- The relationships between management frameworks
- Evaluating the enterprise architecture maturity

Inputs

Inputs are gathered from many resources both internal and external. Ideally, they are obtained from previous architecture work stored as artifacts and building blocks in a repository, but they can also be pulled from industry standards.

- Architecture capability
- Organizational Model for Enterprise Architecture
- Board strategies and board business plans, business strategy, etc
- Major frameworks
- Partnership and contract agreements
- Governance and legal frameworks

Steps

Preliminary Phase steps center on identifying organizations involved, how the enterprise is governed, finding the right people to conduct the transition from current to target architectures, firmly define principles by which all aspects of the transition can be judged, integrating TOGAF into the corporate environment, and selecting the right tools for the right job.

Outputs

This phase prepares the way for the initiation of the ADM. The outputs from the steps conducted are the foundation from which the ADM is worked. Almost all of the documentation produced in the Preliminary Phase will be used as inputs to the other phases and/or will be updated in each phase.

Executive

Stakeholders

Architecture Board

- Architecture capability
- Organizational Model for Enterprise Architecture
- Board strategies and board business plans, business strategy, etc
- Major frameworks
- Partnership and contract agreements
- Governance and legal frameworks
Phase A - Architecture Vision

Starts with receipt of a Request for Architecture Work.
Its objectives are:
- To develop a high-level vision of the capabilities and business value delivered by the proposed enterprise architecture
- To gain approval for a Statement of Architecture Work that defines the program of works to develop and deploy the proposed architecture.

Inputs
The key input is the Request for Architecture Work, together with everything necessary to outline an effective vision and proposed future architectures.

Reference Materials
- Any useful architecture reference materials (often from external sources)

Architectural Inputs
- The Organizational model for EA, including which organizations are impacted by the changes, maturity analysis, roles and responsibilities, and governance and support strategy
- Tailored Architecture Framework, covering the tailored method, content, principles and tools
- Populated Architecture Repository, including any existing documentation

Non-Architectural Inputs
- The Request for Architecture Work, plus related business principles, goals and drivers

Outputs
This is where we start to get a definition of the future architectures – as a Vision, as a Statement of Work, and as a draft Architecture Definition Document.
Later Phases expand these initial outputs to produce the detailed plan for delivering the proposed changes.

Steps
This Phase is vital for outlining a resolution to Stakeholder concerns in architectural terms – as an architecture vision and value propositions – and securing Stakeholder commitment and approval. All steps are important, but key steps are shown in purple!

1. Establish the Architecture Project
2. Identify Stakeholders, Concerns and Business Requirements
3. Evaluate Business Capabilities
4. Assess Readiness for Business Transformation
5. Define Scope
6. Confirm and Elaborate Architecture Principles
7. Develop Architecture Vision
8. Define Target Architecture Value Propositions and KPI
9. Identify Business Transformation Risks and Mitigation Activities
10. Develop Statement of Architecture Work and Secure Approval

Reference Materials
- Any useful architecture reference materials (often from external sources)

Architectural Inputs
- The Organizational model for EA, including which organizations are impacted by the changes, maturity analysis, roles and responsibilities, and governance and support strategy
- Tailored Architecture Framework, covering the tailored method, content, principles and tools
- Populated Architecture Repository, including any existing documentation

Non-Architectural Inputs
- The Request for Architecture Work, plus related business principles, goals and drivers
- The Organizational model for EA, including which organizations are impacted by the changes, maturity analysis, roles and responsibilities, and governance and support strategy
- Tailored Architecture Framework, covering the tailored method, content, principles and tools
- Populated Architecture Repository, including any existing documentation

Architectural Vision including a problem description, key requirements, summary views and objectives
Approved Statement of Architecture Work including an overview of the Architecture Vision and a project description, scope, plan and schedule
A Capability Assessment
A Communication Plan
Draft Architecture Definition Document including version 0.1 of baseline and target business, data, application and technology architectures
Updated principles, goals, drivers, and architecture framework
Although Phases B, C and D deal with different architecture domains, the basic structure for each Phase is very similar.

Each domain has to:
- Develop the Target Architectures in a way that addresses the Request for Architecture Work and stakeholder concerns.
- Identify candidate Architecture Roadmap components based upon gaps between the Baseline and Target Architectures.
- The Business Architecture describes how the enterprise needs to operate to achieve the business goals, and respond to the strategic drivers set out in the Architecture Vision.
- The Information Systems Architecture describes how it will enable the Business Architecture and the Architecture Vision.
- The Technology Architecture shows how it enables the logical and physical data components and the Architecture Vision.

Inputs
Reference Materials External to the Enterprise:
- Reference Materials
- Non-Architectural Inputs
- Architectural Inputs

Steps
Select Reference Models, Viewpoints, and Tools
- Determine Overall Modeling Process
- Identify Required Service Granularity Level, Boundaries, and Contracts
- Identify Required Catalogs of [Business, Data, Application, Technology] Building Blocks
- Identify Required Matrices
- Identify Required Diagrams
- Identify Types of Requirement to be Collected
- Select Services

 Outputs
Revised and updated versions of the Architecture Vision phase deliverables, where applicable.
Phase E - Opportunities and Solutions

Phase E covers the process to:
- Generate the initial complete version of the Architecture Roadmap, based on:
  - The Gap Analysis
  - Candidate Architecture Roadmap components from Phases B, C, and D
- Determine whether an incremental approach is required - and if so, to identify Transition Architectures that will deliver continuous business value.

Inputs

The key inputs are from the Architecture Definition Phases (B, C & D), which are then consolidated and matched to investment opportunities & solution products.

Architectural Inputs

- The Organizational model for EA, Governance Model & Framework, Tailored Architecture Framework, Architecture Repository
- Statement of Architecture Work & Architecture Vision
- Draft Architecture Definition Document (including baseline & target architectures)
- Draft Architecture Requirements Specification
- Candidate Architecture Roadmap components from Phases B, C & D

Non-Architectural Inputs

- The Request for Architecture Work, Capability Assessment, Communications Plan, & Planning Methodologies

Steps

Phase E is about architecture delivery. It amalgamates the gaps between Target & Baseline Architectures in all architecture domains, & groups changes into work packages to build a best-fit roadmap based on stakeholder requirements, the enterprise’s business transformation readiness, identified opportunities & solutions and implementation constraints.

1. Identify Key Business Drivers
2. Review Gap Analysis from Phase D
3. Brainstorm Technical Requirements from Functional Perspective
4. Brainstorm Co-existence and Interoperability Requirements
5. Perform Architecture Assessment and Gap Analysis
6. Identify Major Work Packages or Projects

Outputs

Here we have a consolidated view of all four architecture domains, and the first outline of how we are going to implement the architecture requirements – which will become more detailed & be confirmed in Phase F.

- Refined Architecture Vision
- Draft Architecture Definition Document
- Draft Architecture Requirements Specification
- Capability Assessments
- Implementation & Migration Plan (version 0.1)

Reference Materials

- Architecture reference materials & product information

Non-Architectural Inputs

- The Request for Architecture Work, Capability Assessment, Communications Plan, & Planning Methodologies

Website

www.orbussoftware.com
Phase F - Migration Planning

Phase F is where we create an Implementation and Migration Plan in co-operation with portfolio and project managers.
- Finalize the Architecture Roadmap
- Finalize the supporting Implementation and Migration Plan, making sure that it is coordinated with the enterprise change management approach and the overall change portfolio
- Ensure the value and cost of work packages and Transition Architectures is understood by stakeholders

Inputs
The key inputs are the incomplete Architecture Roadmap and Implementation and Migration Plan from Phase E

Reference Materials
- Any useful architecture reference materials (often from external sources)

Architectural Inputs
- The Organizational Model for EA; Governance models and frameworks; Tailored Architecture Framework; Statement of Architecture Work and Architecture Vision
- Populated Architecture Repository, including reusable building blocks
- Draft Architecture Definition Document and Architecture Specifications
- Architecture Roadmap and Implementation and Migration Plan (v0.1)

Non-Architectural Inputs
- The Request for Architecture Work, Capability Assessment and Communications Plan

Outputs
Outputs show dependencies, costs, and benefits of the various migration projects in the final version of the Implementation and Migration Plan.

The architecture development cycle is completed here, with lessons learned enabling continuous improvement to the EA process.

Implementation and Migration Plan (Version 1.0) including the Implementation and Migration Strategy, and the Project and portfolio breakdown of the implementation

Finalized Architecture Definition Document including any Finalized Transition Architectures

Finalized Architecture Requirements Specification

Finalized Architecture Roadmap

Relevant Architecture Building Blocks

Request for Architecture Work (for a new iteration of the ADM)

Possible Change Requests for Architecture Capability from lessons learned

Steps
The level of detail addressed in Phase F will depend on the scope and goals of the overall architecture effort. All steps are important, but key steps are shown in purple!

1. Confirm Management Framework Interactions for the Implementation and Migration Plan
2. Assign a Business Value to Each Work Package
3. Estimate Resource Requirements, Project Timings, and Availability/Delivery Vehicle
4. Prioritize the Migration Projects through the Conduct of a Cost/Benefit Assessment and Risk Validation
5. Confirm Architecture Roadmap and Update Architecture Definition Document
6. Generate the Implementation and Migration Plan
7. Complete the Architecture Development Cycle and Document Lessons Learned
Phase G - Implementation Governance

Phase G is where all the information for successful management of the various implementation projects is brought together. In parallel is the execution of the development process, where the actual development happens. Here we:
- Ensure conformance with the Target Architecture by implementation projects
- Perform appropriate Architecture Governance functions for the solution and any implementation-driven architecture Change Requests

Inputs
Phase G establishes the connection between architecture and implementation organization, through the Architecture Contract.

Reference Materials
- Any useful architecture reference materials (often from external sources)

Architectural Inputs
- The Organizational Model for EA; Tailored Architecture Framework; Request for Architecture Work; Statement of Architecture Work and Architecture Vision
- Populated Architecture Repository, including reusable building blocks
- Architecture Definition Document and Architecture Requirements Specification
- Architecture Roadmap and Implementation and Migration Plan
- Architecture Contract and Implementation Governance Model

Non-Architectural Inputs
- The Request for Architecture Work and Capability Assessment

Outputs
Outputs show dependencies, costs, and benefits of the various migration projects in the final version of the Implementation and Migration Plan.

The architecture development cycle is completed here, with lessons learned enabling continuous improvement to the EA process.

- Architecture Contract (signed)
- Compliance Assessments and Change Requests
- Architecture-Compliant Solutions Deployed including the implemented system, populated architecture repository, compliance recommendations & dispensations, recommendations on service delivery requirements & performance metrics, Service Level Agreements (SLAs)
- Request for Architecture Work (for a new iteration of the ADM)
- Post-implementation update of Architecture Vision and Architecture Definition Document

Steps
A key aspect of Phase G is ensuring compliance with the defined architecture(s), not only by the implementation projects, but also by other ongoing projects. All steps are important, but key steps are shown in purple!

1. Confirm Scope and Priorities for Deployment with Development Management
2. Identify Deployment Resources and Skills
3. Guide Development of Solution Deployment
4. Perform Enterprise Architecture Compliance Reviews
5. Implement Business and IT Operations
6. Perform Post-Implementation Review and Close the Implementation

www.orbussoftware.com
Phase H ensures that the architecture achieves its original target business value, by managing changes to the architecture in a cohesive and architected way. Here we ensure that:
- We maintain and follow the architecture lifecycle
- We work within the Architecture Governance Framework
- The Enterprise Architecture Capability meets current requirements

**Inputs**
Phase H is closely related to the architecture governance processes, and to management of the Architecture Contract between the EA function and business users of the enterprise.

**Reference Materials**
- Any useful architecture reference materials (often from external sources)

**Architectural Inputs**
- The Organizational Model for EA; Tailored Architecture Framework; Request for Architecture Work; Statement of Architecture Work and Architecture Vision
- Populated Architecture Repository, including reusable building blocks
- Architecture Definition Document and Architecture Requirements Specification
- Architecture Roadmap and Implementation and Migration Plan
- Architecture Contract and Implementation Governance Model
- Change Requests for business and technology changes and from lessons learned; Compliance Assessments

**Non-Architectural Inputs**
- The Request for Architecture Work

**Outputs**
When the Foundation Architecture needs to be re-aligned with strategy, substantial change is required to components, standards or guidelines for their use that have a significant end-user impact (e.g. regulatory changes), then a refreshment cycle (partial or complete re-architecting) is required, and a new Request for Architecture Work must be issued (to move to another cycle).

Changes are classified as Simplification, Incremental, or Re-Architecting.

**Steps**
The architecture change process determines how changes are to be managed, what techniques are applied, and what methodologies used. It also identifies which phases of the ADM are impacted by changes e.g. changes that affect only migration may be of no interest to architecture development phases.

1. Establish Value Realization Process
2. Deploy Monitoring Tools
3. Manage Risks
4. Provide Analysis for Architecture Change Management
5. Develop Change Requirements to Meet Performance Targets
6. Manage Governance Process
7. Activate the Process to Implement Change

---

www.orbussoftware.com
Architecture Requirements Management

The “Requirements Management” circle at the centre of the ADM graphic reminds us that ADM is continuously driven by the requirements management process. In this phase we:
- Ensure that Requirements Management process is sustained and operates for all 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

Steps
Requirements Management itself does not dispose of address, or prioritize any requirements, which is done in the relevant phase of the ADM. It is merely the process for managing requirements throughout the overall ADM. Hence the split between steps below:

Requirements Management Steps
1. Baseline requirements
2. Monitor baseline requirements
3. Identify changed requirements and record priorities
4. Update the Requirements Repository with information relating to the changes requested, including stakeholder views affected

ADM Phase Steps
1. Identify / Document Requirements
2. Assess impact of changed requirements and determine whether to implement change
3. Implement change in the current Phase
4. Assess and revise gap analysis from past Phases

Inputs
The Requirements Repository holds information from multiple ADM cycles. The Architecture Requirements Specification and Requirements Impact Assessment hold information for a specific project.

- A populated Architecture Repository
- Organizational Model for Enterprise Architecture
- Tailored Architecture Framework
- Statement of Architecture Work
- Architecture Vision
- Architecture requirements, populating an Architecture Requirements Specification
- Requirements Impact Assessment

Outputs
The Requirements Repository will be updated as part of the Requirements Management phase and should contain all requirements information.

- Requirements Impact Assessment
- Architecture Requirements Specification, if necessary

When new requirements arise, or existing ones are changed, a Requirements Impact Statement is generated identifying phases of the ADM that need to be revisited. The statement goes through various iterations until the final version, which includes the full implications of the requirements (e.g., costs, timescales, and business metrics). Once requirements for the current ADM cycle have been finalized, the Architecture Requirements Specification should be updated.
TOGAF 9.1: Guidelines and Techniques

Adapting the ADM Process
Applying the ADM to different enterprise levels
Guidelines
Using TOGAF to define & govern SOAS

Architecture Development

Stakeholder Analysis
Win support from stakeholders.

Business Scenarios
Method within a method to identify and articulate business requirements.

1. Problem
2. Environment
3. Objectives
4. Human Actors
5. Computer Actors
6. Roles and Responsibilities
7. Refine

Capability Based Planning
Capabilities of the enterprise.

Capability-Based Planning Techniques

Architecture Partitioning
Break into bite-size chunks:
- Enterprise Scope
- Architecture Domains
- Level of Detail
- Project Schedules

Scope
Baseline Architecture
Target Architecture

Time

Architecture Vision (Phase A)

Architecture Definition #1
(Phases B, C & D)

Architecture Definition #2
(Phases B, C & D)

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

People
Process
Material

Information Management

Research and Development

Objectives

Human Actors

Roles and Responsibilities

Refine

Scope
Baseline Architecture
Target Architecture

Time

Architecture Vision (Phase A)

Architecture Definition #1
(Phases B, C & D)

Architecture Definition #2
(Phases B, C & D)

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Architecture Transition
Architecture Realization

Corporate Functions
- CIO
- Program Management Office
- QA/Standards Group
- Procurement
- HR

System Operations
- Enterprise Security
- Technical Services
- Service Desk
- Application Management
- Infrastructure Management
- Data/Value Communications

Project Organization
- Executives
- Line Management
- Business Domain Experts
- Product Specialist

End User Organization
- Executives
- Line Management
- Business Domain Experts
- Data Owners

Suppliers

Regulatory Bodies

Processes of Analyzing TOGAF
- Business Transformation
- Business Scenarios
- Gap Analysis
- Interoperability Requirements
- Migration Planning Techniques
- Architecture Principles
- Stakeholder Management
- Architecture Patterns
TOGAF 9.1: Content and Continuum

Content Framework - Description of Architectural Work Products
Deliverables, artifacts, building blocks and relationships

Content Meta-Model - Description of Building Blocks and Relationships

Enterprise Continuum
A Classification Framework

Architecture Continuum
Search Progressively more General Architectures and Solutions for Candidate Components

Views and Viewpoints
Salesperson  Electrician  Builder
TOGAF 9.1: Models and Architecture

Technical Reference Model (TRM)
A model and taxonomy of generic platform services

Integrated Information Infrastructure Reference Model (III-RM)
Model for business applications and infrastructure applications

Governance
Creation and monitoring of architectural components

Architecture Capability Framework
Structure Definition
How to establish an Enterprise Architecture function
Who organizes
What skills and roles

Compliance Levels
Compliance of projects
Essential part of architecture governance
Formulate IT compliance strategy

Skills Framework
Define roles, skills and experience
Measure staff development right fit

Roles
Enterprise Architecture Business
Program/Project Manager
IT Designer

- Architecture Views and Viewpoints Design
- Building Block Design
- Solutions Modeling
- Benefits Analysis
- Business Interworking
- Systems Behavior
- Project Management