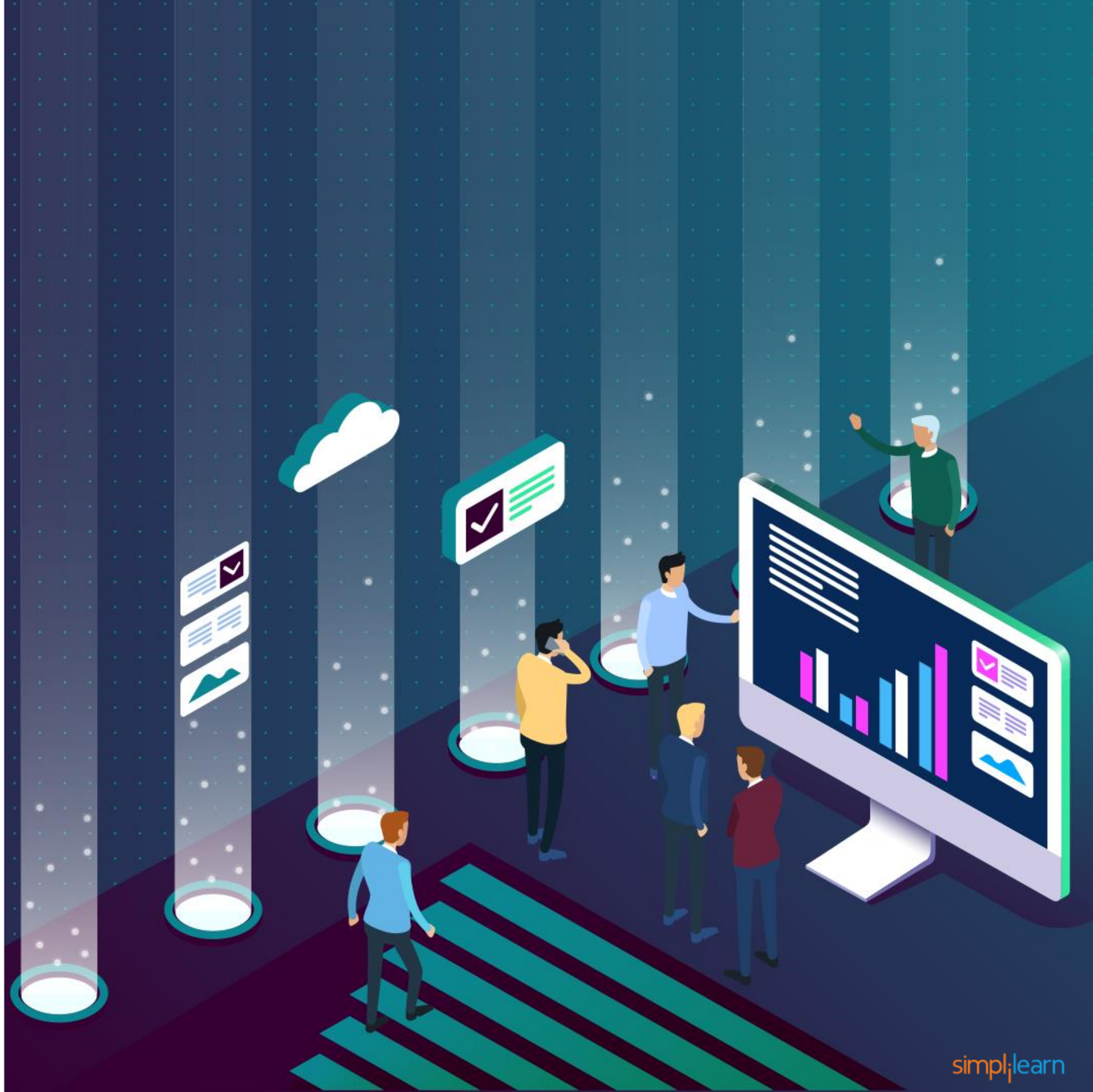
# TOGAF® Enterprise Architecture Training Course (Practitioner)

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# Unit 5 - Implementing the Architecture

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# 5.1 Risk and Security considerations for Phases E, F, and G

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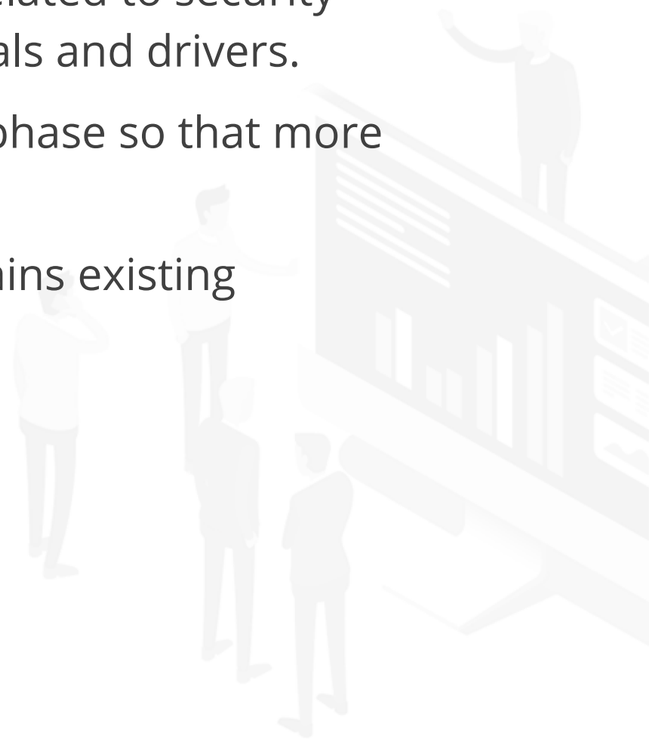
# Risk and Security – Phase E: Opportunities and Solutions

- Ensure the stakeholders' security and risk concerns are addressed in the analysis. Confirm that risk owners are consulted.
- The value expected to be delivered by work packages should include measures related to security and risk value to ensure the roadmap addresses the complete set of business goals and drivers.
- The security building blocks defined in the previous phases become SBBs in this phase so that more specific implementation-oriented requirements and specifications are defined.
- The Security Services Catalog of the Baseline Security Architecture probably contains existing security services or security building blocks that meet the requirements.



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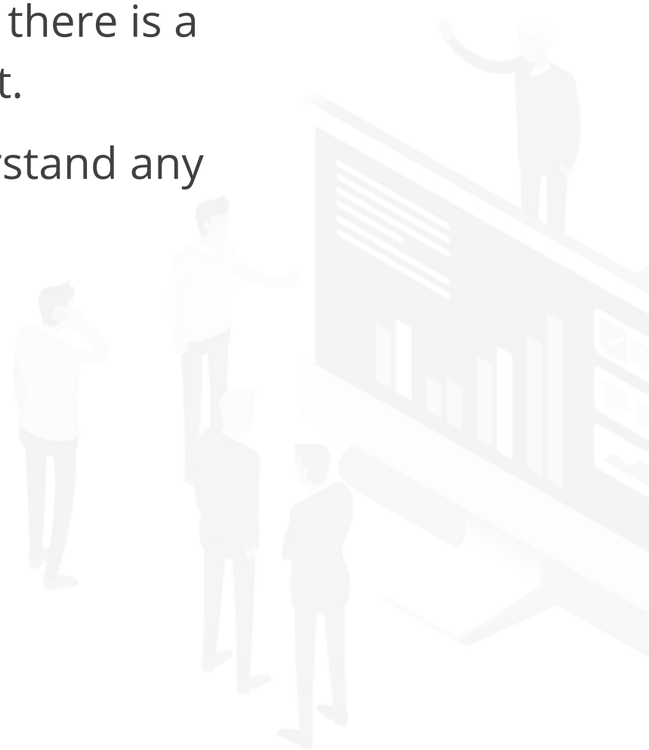
# Risk and Security – Phase F: Migration Planning

- The migration strategy should include a risk assessment and a Risk Mitigation Plan.
- In Phase F, the Risk Mitigation Plan is limited to the transition.
- Migration of live environments should always include regression planning so that there is a way to reverse out a failed migration. This is an essential part of risk management.
- In addition, migration planning should include a security impact analysis to understand any security impacts of the target state of the change.



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# Risk and Security — Phase G: Implementation Governance

- Security Architecture implementation governance provides assurance that the detailed design and implemented processes and systems adhere to the overall Security Architecture.
- This ensures that deviations from Architecture Principles and implementation guidelines don’t create any unacceptable risk.



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# 5.2 Steps (Phase E) to create the Implementation and Migration Strategy

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# Phase E: Opportunities and Solutions – The Steps (1)

- Determine/confirm key corporate change attributes
- Determine business constraints for implementation
- Review and consolidate gap analysis results from Phases B to D
- Review consolidated requirements across related business functions
- Consolidate and reconcile interoperability requirements
- Refine and validate dependencies

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# Phase E: Opportunities and Solutions – The Steps (2)

- Confirm readiness and risk for business transformation
- Formulate Implementation and Migration Strategy
- Identify and group major work packages
- Identify Transition Architectures
- Create the Architecture Roadmap & Implementation and Migration Plan

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# 5.3 Basic Approaches to Implementation

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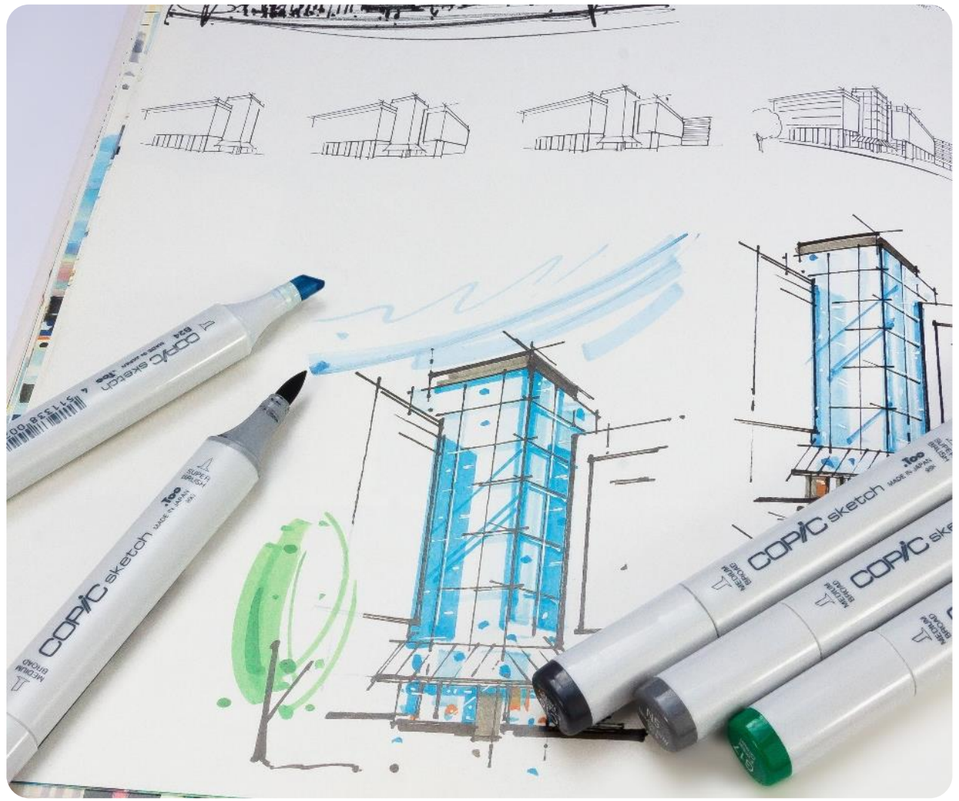
# Implementation Approaches




There are three basic approaches as follows:

- Greenfield: a completely new implementation
- Revolutionary: a radical change (i.e., switch on, switch off)
- Evolutionary: a strategy of convergence, such as parallel running or a phased approach to introduce new capabilities

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# Implementation Approaches (Cont'd)

The most common implementation methodologies are:

- Quick win (snapshots)
- Achievable targets
- Value chain method



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# 5.4 Identifying and Grouping Work Packages

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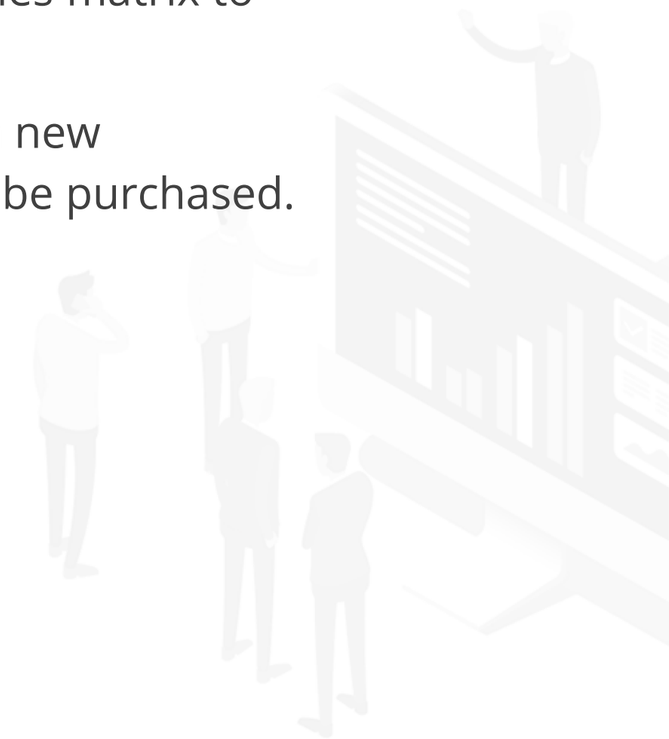
# Identify and Group Work Packages (1)

- Using the Consolidated Gaps, Solutions, and Dependencies matrix together with the Implementation Factor catalog, logically group the various activities into work packages.
- Fill in the "Solution" column in the Consolidated Gaps, Solutions, and Dependencies matrix to recommend the proposed solution mechanisms.
- Indicate for every gap/activity whether the solution should be oriented towards a new development, or be based on an existing product, and/or use a solution that can be purchased.



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# Identify and Group Work Packages (2)

Classify every current system that is under consideration as:

- Mainstream: part of the future information system
- Contain: expected to be replaced or modified in the planning horizon (next 3 years)
- Replace: to be replaced in the planning horizon

Supporting top-level work packages should then in turn be decomposed into increments to deliver the capability increments.

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# Identify and Group Work Packages (3)

- Analyze and refine work packages or increments with respect to their business transformation issues and the strategic implementation approach.
- Finally, group the work packages into portfolios and projects within a portfolio, taking into consideration the dependencies and the strategic implementation approach.

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# 5.5 Creating and Documenting Transition Architectures

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# Transition Architectures

- Applicable when the scope of change to implement the Target Architecture requires an incremental approach

- Identifies one or more clear targets along the roadmap to realizing the Target Architecture

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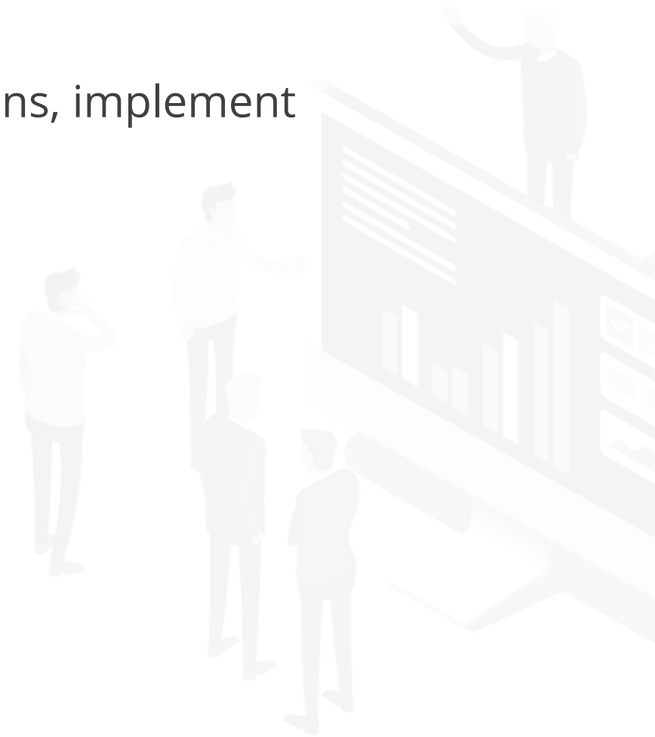
# Transition Architectures

- Development of Transition Architectures must be based upon the preferred implementation approach, the Consolidated Gaps, Solutions, and Dependencies matrix, the listing of projects and portfolios, as well as the enterprise's capacity for creating and absorbing change.

- Determine where the difficult activities are, and unless there are compelling reasons, implement them after other activities that most easily deliver missing capability.



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# 5.6 The Impact of Migration Projects on the Organization and the Coordination Required

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# Phase F: Migration Planning – The Steps

- Confirm management framework interactions for Implementation and Migration Plan
- Assign a business value to each work package
- Estimate resource requirements, project timings, and availability/delivery vehicle Prioritize the migration projects through the conduct of a cost/benefit assessment and risk validation
- Confirm Architecture Roadmap and update Architecture Definition Document
- Complete the Implementation and Migration Plan
- Complete the architecture development cycle and document lessons learned

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# Phase F Summary Output & Outcome and Essential 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<br>• How stakeholder priority and preference adjust in response to value, effort, and risk of change. (Stakeholder Requirements) |

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# Walk Through Architecture to Support Project: Finalize Scope and Budget

For each project in the portfolio:

- Finalize estimates and timeline
- Update Enterprise roadmap
- Populate governance and approval plan



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# Walk Through Architecture to Support Project: Prepare for Solution Delivery Governance

Program context:

- Initiate completion of architecture work
- Define target Solution Architectures
- Finalize effort and resource estimates
- Define variance measures in project-specific governance model
- Update risk matrix



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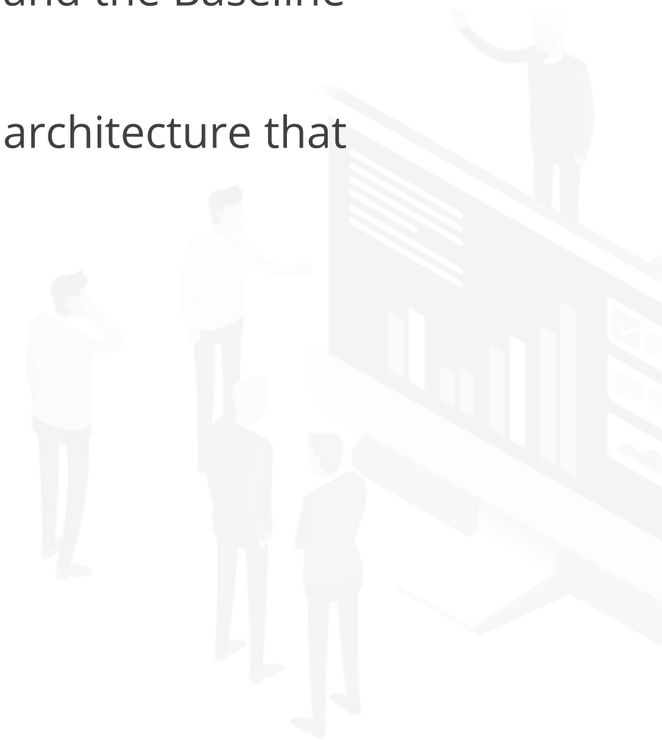
# Realizing the Solution

- Contractually, this is the post-rollout, warranty period. It is the period of putting the solution in the hands of the beneficiaries (customers, end-users, support personnel, partners, etc.).
- At the end of this period, initiate a gap analysis between the realized architecture and the Baseline Architecture to be used for solution delivery.
- Document the lessons learned, mainly the gaps in the description of the superior architecture that were filled while delivering the Solution Architecture.



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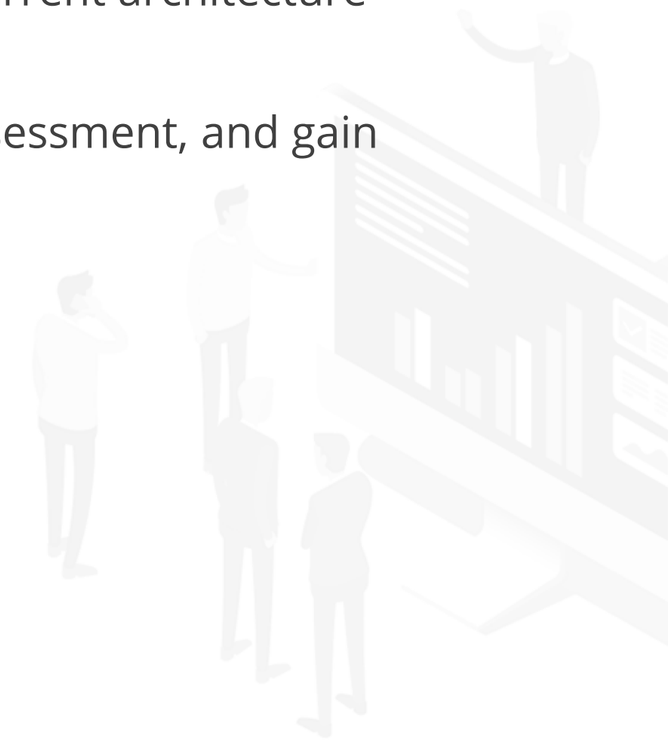
# Closure

- The realized solution is the new baseline, and becomes the basis for evolving and analyzing the roadmap to the Target Architecture.
- The Architecture Practitioner performs an assessment to justify closure of the current architecture project.
- Involve all stakeholders, decision-makers, and implementers to complete the assessment, and gain the sign-off to close the effort.



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# 5.7 Why and How Business Value is Assigned to Each Work Package

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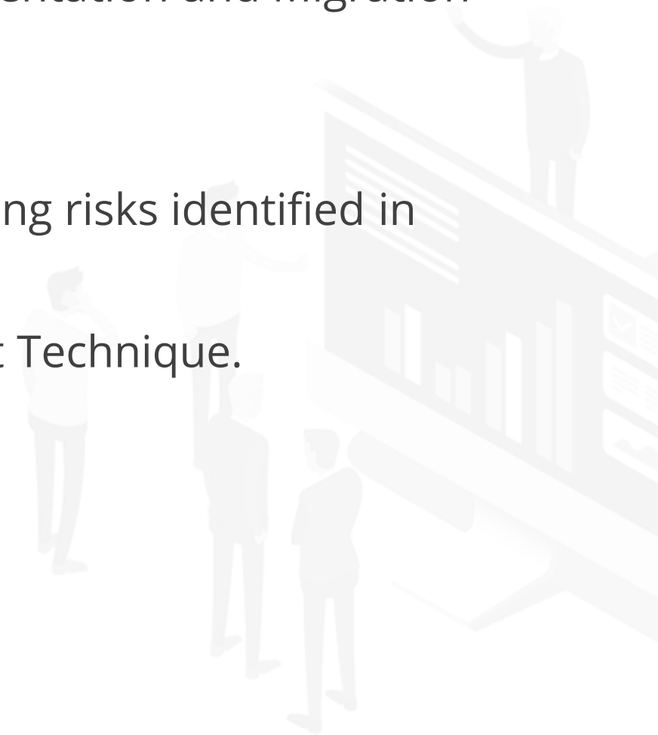
# Phase F: Migration Planning Assign a Business Value to Each Work Package

- Establish what constitutes business value within the organization, how value can be measured, and then apply this to each one of the projects and project increments.
- Use the work packages as a basis of identifying projects that will be in the Implementation and Migration Plan.
- The identified projects will be fully developed in other steps in Phase F.
- Risks should then be assigned to the projects and project increments by aggregating risks identified in the Consolidated Gaps, Solutions, and Dependencies Matrix (from Phase E).
- Estimate the business value for each project using the Business Value Assessment Technique.



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# Issues to Address in this Activity

- Performance Evaluation Criteria
- Return-on-Investment Criteria
- **Business Value**
- Critical Success Factors (CSFs)
- Measures of Effectiveness (MOE)
- Strategic Fit



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# Communication with Implementers

Implementers need to understand their project:

1. Where their project fits within the roadmap, and its role in producing value?
2. What work packages and gaps they are responsible for, as well as associated gaps they are not responsible for?
3. How conformance will be assessed?

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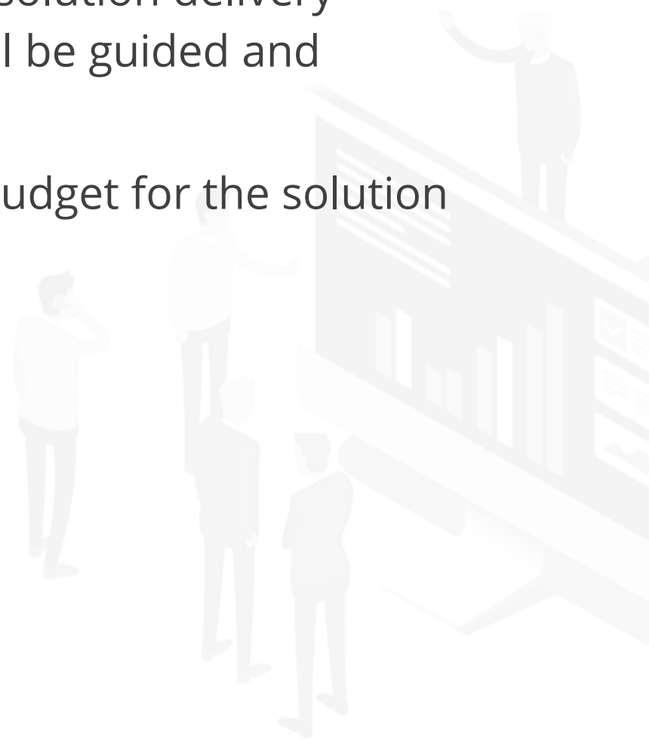
# Managing the Current Approach towards Implementing the Change

- The Practitioner’s job is to show that a sufficient level of scrutiny led to the deliverables of the Architecture Project for the solution delivery architecture to succeed.
- Prove to the stakeholders that when the Architecture Project is consumed by the solution delivery architecture, their requirements have been met and changes to the Enterprise will be guided and constrained efficiently.
- Identify and secure approval for the resources necessary to begin allocating the budget for the solution delivery architecture to begin.



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# 5.8 How to Prioritize the Migration Projects (Phase F)

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# Prioritize the Migration Projects Cost/Benefit Assessment

- Prioritize the projects by ascertaining their business value against the cost of delivering them.
- The approach is to first determine, as clearly as possible, the net benefit of all of the SBBs delivered by the projects, and then verify that the risks have been effectively mitigated and factored in.

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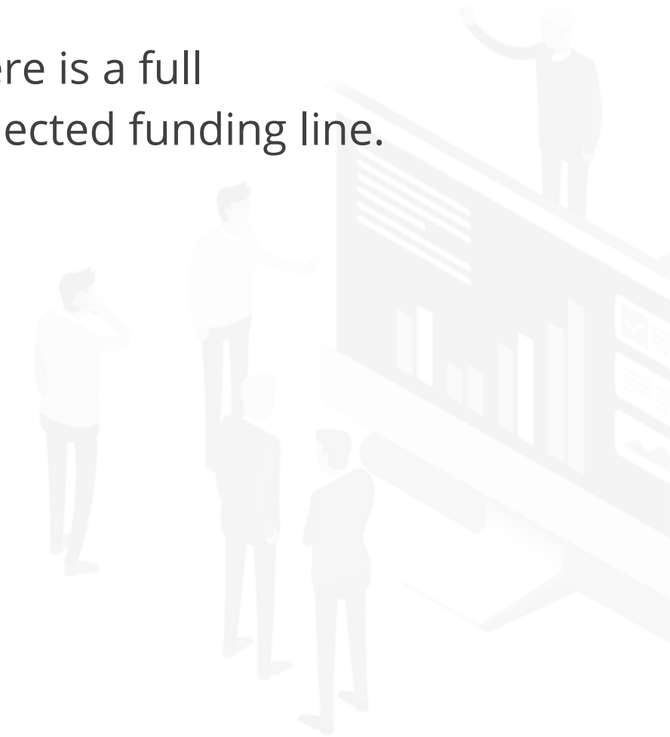
# Prioritize the Migration Projects Risk Validation

- Review the risks to ensure that the risks for the project deliverables have been mitigated as much as possible. The project list is then updated with risk-related comments.
- Have the stakeholders agree upon a prioritization of the projects.
- Formally review the risk assessment and revise it as necessary ensuring that there is a full understanding of the residual risk associated with the prioritization and the projected funding line.



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# 5.9 Confirm the Architecture Roadmap (Phase F)

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# Confirm the Architecture Roadmap

- Update the Architecture Roadmap including any Transition Architectures.
- Review the work to date to assess what the time-spans between Transition Architecture should be, taking into consideration the increments in business value and capability and other factors, such as risk.
- Once the capability increments have been finalized, consolidate the deliverables by project.
- This will result in a revised Architecture Roadmap.

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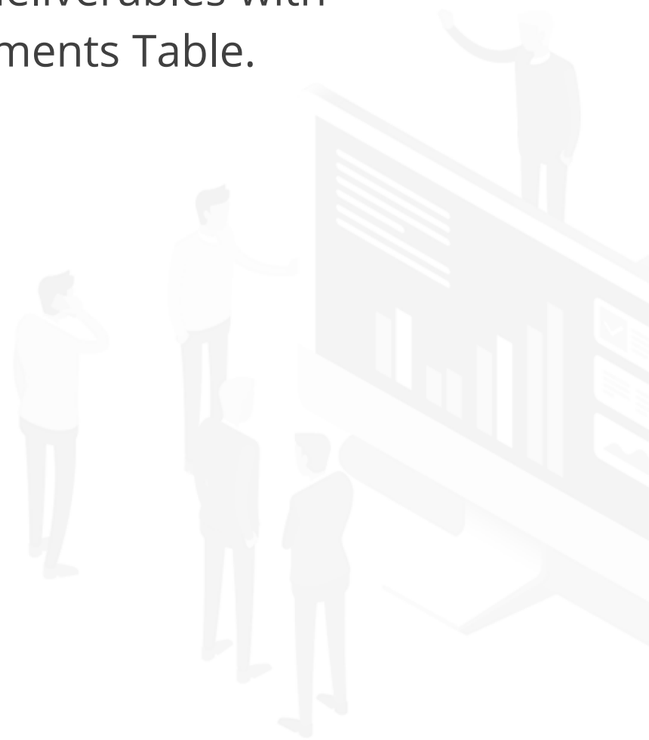
# Update the Architecture Definition Document

- If the implementation approach has shifted as a result of confirming the implementation increments, update the Architecture Definition Document.
- This may include assigning project objectives and aligning projects and their deliverables with the Transition Architectures to create/update an Architecture Definition Increments Table.



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# 5.10 The outputs of Phase F necessary to Proceed with the Architecture Implementation

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# Phase F: Migration Planning Outputs Implementation and Migration Plan

Implementation and Migration Plan, Approved, including:

- Implementation and Migration Strategy
- Project and portfolio breakdown of the implementation:
  - Allocation of work packages to project and portfolio
  - Capabilities delivered by projects
  - Relationship to Target Architecture and any Transition Architectures
  - Milestones and timing
  - Work breakdown structure
- Project charters (optional):
  - Related work packages
  - Business Value
  - Risk, issues, assumptions, dependencies
  - Resource requirements and costs
  - Benefits of migration
  - Estimated costs of migration options



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# Phase F: Migration Planning Outputs Other

- Finalized Architecture Definition Document, including:
  - Finalized Transition Architectures, if any
- Finalized Architecture Requirements Specification
- Finalized Architecture Roadmap
- Re-Usable ABBs
- Requests for Architecture Work for a new iteration of the ADM cycle (if any)
- Implementation Governance Model (if any)
- Change Requests for the Architecture Capability arising from lessons learned



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# Phase F: Migration Planning Summary Outcome

An approved set of projects, containing the objective and any necessary constraints, resources required, and start and finish dates.



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# 5.11 Inputs to Phase G Implementation Governance

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# Phase G: Implementation Governance Inputs

Reference Materials External to the Enterprise

- Architecture reference materials

Non-Architectural Inputs

- Request for Architecture Work
- Capability Assessment
- Architecture reference materials



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# Phase G: Implementation Governance Architectural Inputs

Organizational Model for Enterprise Architecture, including:

- Tailored Architecture Framework, including:
  - Statement of Architecture Work
  - Architecture Vision
- Architecture Repository, including:
  - Architecture Definition Document
- Architecture Requirements Specification, including:
  - Architecture Roadmap
  - Architecture Governance Framework
  - Implementation Governance Model
  - Architecture Contract (standard)
  - Request for Architecture Work identified during Phases E and F
  - Implementation and Migration Plan



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# 5.12 How Implementation Governance is executed (Phase G)

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# Phase G: Implementation Governance Steps

- Confirm scope and priorities for deployment with development management
- Identify deployment resources and skills
- Guide development of solutions deployment
- Perform Enterprise Architecture Compliance reviews
- Implement business and IT operations
- Perform post-implementation review and close the implementation

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# Phase G Summary Output & Outcome and Essential 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)<br>• How stakeholder priority and preference adjust in response to success, value, effort, and risk of change. (Stakeholder Requirements) |

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# Supporting Change

- Support of the change activity needs to be provided.
- Stakeholders often have little confidence that the project will deliver the expected value with the expected cost and the projected time.
- The lack of confidence means the architecture has more uncertainty, or risk, associated with realizing the organization’s objectives.
- At this point, the focus should be on risk mitigation.

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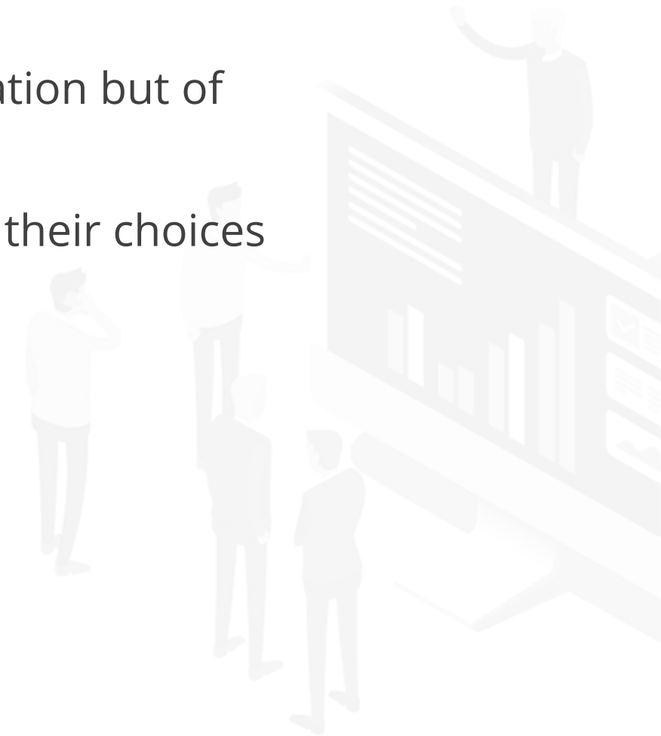
# Phase G: Implementation Governance Guidance

- Guidance is provided to the Implementation Project.
- The Practitioner must:
    - focus on the scope of the Implementation Project
    - facilitate good decision-making in the context not of project benefits realization but of Enterprise benefits realization
    - ensure the stakeholders and implementers understand the implications of their choices regarding Enterprise benefits not driving them to make different choices



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# Implementation Projects and Other Change

- The TOGAF Standard provides two key concepts to govern Implementation Projects and other change: the Architecture Contract and the Architecture Requirements Specification.
- The Architecture Contract is used to direct and control the implementation team to work towards a thought-out future.
- The Architecture Requirements Specification is used to direct and control the creativity of the implementation team.

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# 5.13 Outputs to support Architecture Governance

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# Phase G: Implementation Governance Outputs

- Architecture Contract (signed), as recommended in the architecture-compliant implemented architectures
- Compliance Assessments
- Change Requests
- Architecture-compliant solutions deployed including:
  - The architecture-compliant implemented system
  - Populated Architecture Repository
  - Architecture compliance recommendations and dispensations
  - Recommendations on service delivery requirements
  - Recommendations on performance metrics
  - Service-Level Agreements (SLAs)
  - Architecture Vision, updated post-implementation
  - Architecture Definition Document, updated post-implementation
  - Business and IT operating models for the implemented solution
  - Architecture Building Blocks (ABBs)



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# Phase G: Implementation Governance Summary Outcome

Completion of the projects to implement the changes necessary to reach the adjusted target state.



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# 5.14 How Architecture Contracts are Used to Communicate with Implementers

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# Communicating with Implementers

- Implementers are typically poorly served. It is common to see implementers handed with a set of diagrams that represent the architecture.
- From these diagrams the implementers are expected to figure out the gaps they should fill, the architecture specifications they must conform to, and the controls they must implement.
- Implementers are better served when they are explicitly provided context, gap, architecture specification, and control.

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# Critical Items to an Implementer

- **Implementation Project context:** where does the project fit within the roadmap, what value or value dependency will the project provide?
- **Scope:** what work packages and gaps is the Implementation Project responsible for, as well as what gaps associated with any architecture components associated with the project scope is the project not responsible for?
- **Conformance**: what is the set of specific architecture specifications and controls the Implementation Project will be assessed against?

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# Further on Communicating with Implementers

John Carver's policy governance approach has two imperative practices that are recommended:

- First, specifications should be exclusionary, highlighting what is prohibited, rather than mandating what is permitted.
- Second, specification compliance should be assessed through a reasonable interpretation test by a reasonable person.



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# Contract between Architecting Function and Business Stakeholders

A business stakeholder's Architecture Contract may include:

- Introduction and background
- The nature of the agreement
- Scope
- Strategic requirements
- Architecture deliverables that meet the business requirements
- Conformance requirements
- Architecture adopters
- Time window
- Architecture business metrics
- SLA
- This contract is also used to manage changes to the Enterprise Architecture in Phase H

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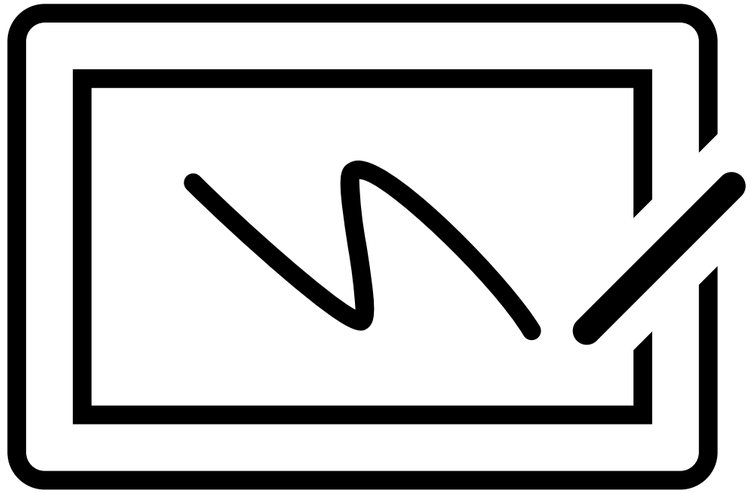
# Practice with Learning Studies Implementing the Architecture



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