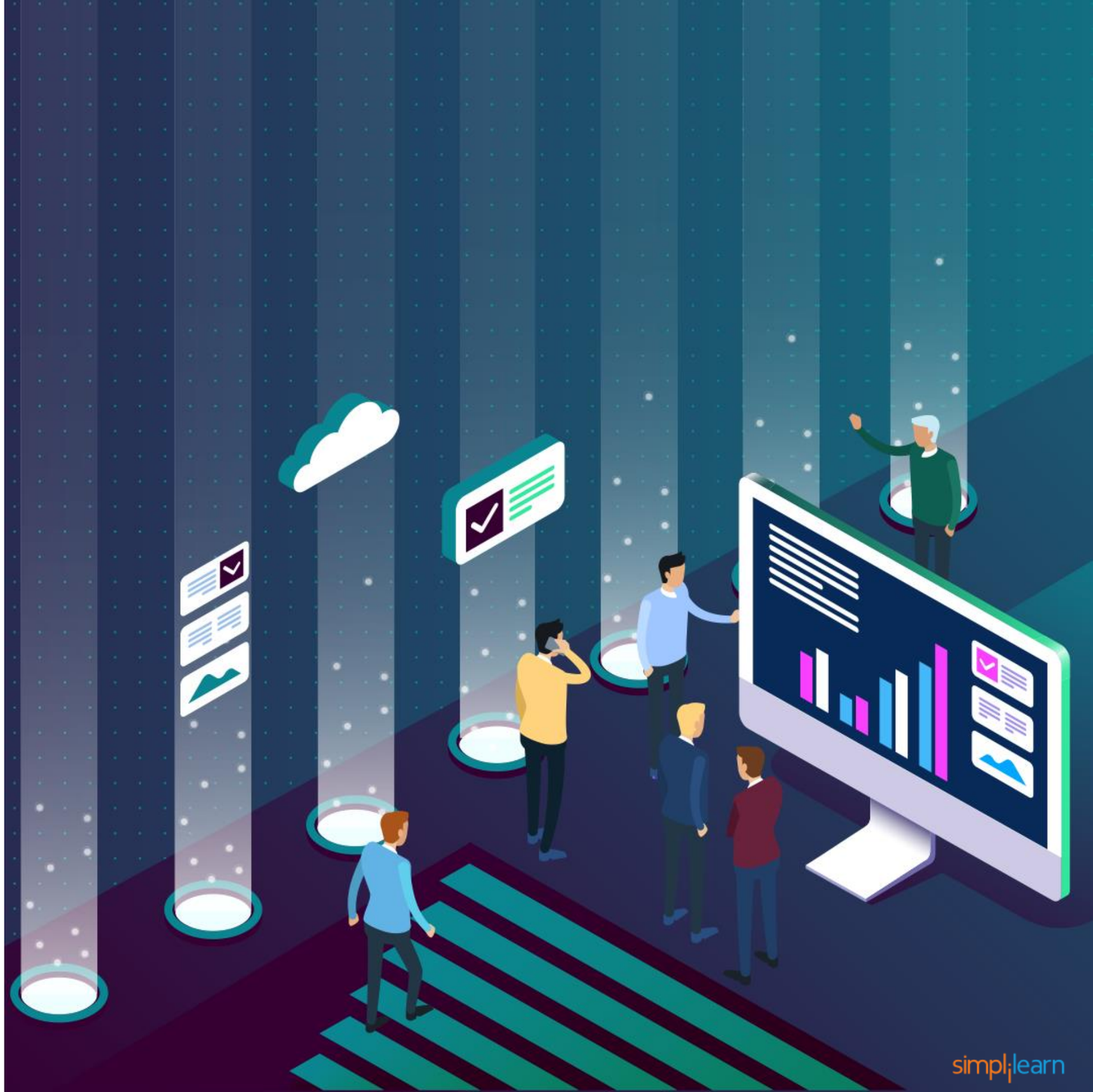
TOGAF® Enterprise Architecture Training Course (Practitioner)



Unit 4 – Architecture Development

4.1 Steps applicable to all ADM Phases

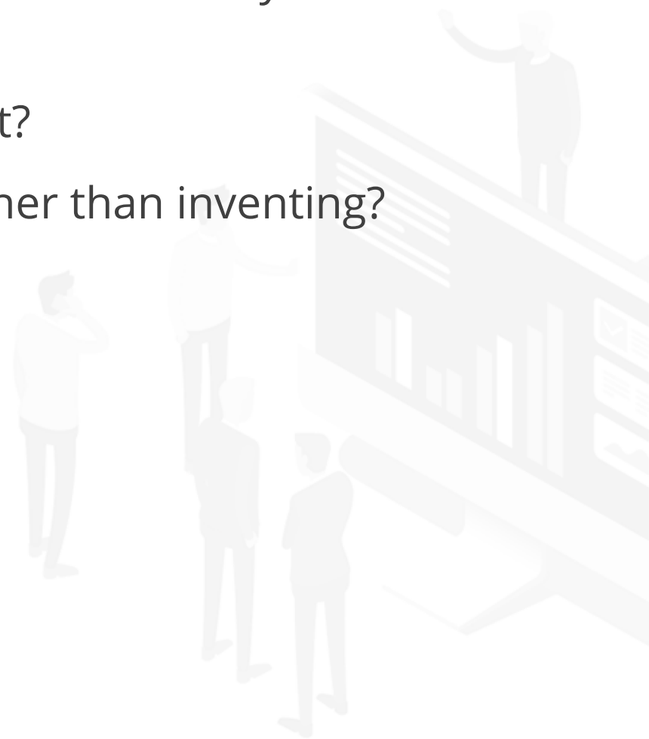
Phase B, C and D – Common Steps

- The steps outlined in the TOGAF Standard to develop architecture in Phases B, C, and D are identical.
- They are identical because the approach to developing an architecture, confirming the work product developed fits, and confirming approval are identical.
- These steps are also mandatory. Steps can be skipped, but the final outcome could be at risk.

Select Reference Models, Viewpoints, and Tools

Practitioners test with the following questions:

- Given a set of stakeholders and concerns, what information do you need to know about the system being examined to address their concerns?
- Given a set of information, how will you model, represent, capture, and analyze it?
- Are there reference models that allow you to skip to gathering and analyzing rather than inventing?
- What information is missing from the EA Landscape right now?



Develop Target, Baseline, and Gap

- Just enough for the purpose.
- Consider the limitation of restricting description to where there is a gap:
  - If part of the EA Landscape will have no change, and is not needed for traceability, what useful reason is there for a Practitioner to spend time describing it?
- A gap is everything that changes.

Identify the Work to Reach the Target Considering Cost and Value

- Without understanding the work required to reach the target, stakeholders will approve the impossible.
- The Practitioner is accountable for guarding value.
- A target provides an increase in value, at a cost of change.

Resolving Impacts

The Practitioner:

- Explores the impact of their candidate architecture against other candidate architectures, transition states, the target state, and in-flight Implementation Projects
- Works with the Enterprise risk management process to assess impact to the Enterprise's risk; this is one of the most complex activities for an engaged high-functioning EA team

Approval

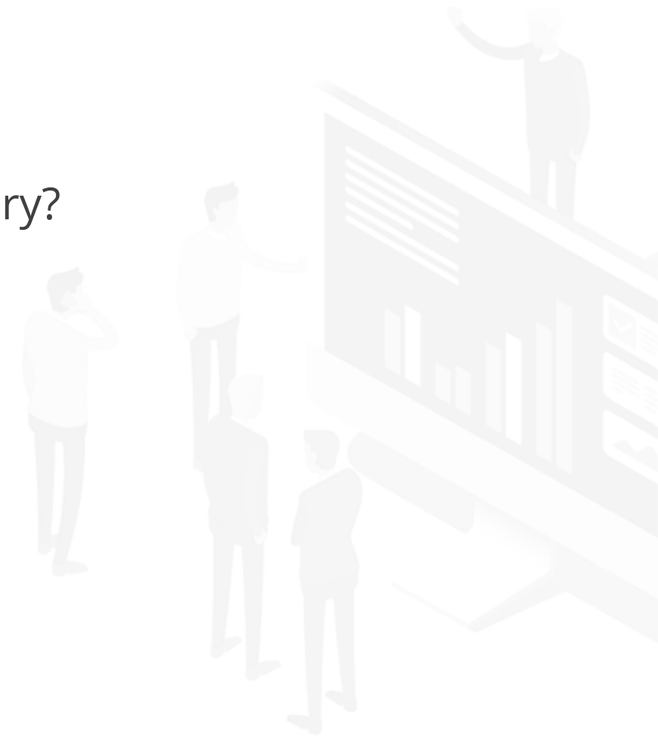
The Practitioner is assisting their organization select the best possible path against a set of competing preferences over time. They have taken the time to explore options and impacts.

With an approved Target Architecture:

- The future is defined
- Traceability to the objective is available
- Trade-off has been performed

The EA Repository

- Practitioners should start and finish with the contents of the EA Repository.
- Practitioners should apply the following tests:
  - Is the information that will address the question at hand already available?
  - Is there a superior architecture that guides and constrains the task at hand?
  - What is the minimum information needed to cover shortfalls in the EA Repository?



4.2 Risk and Security considerations during the Architecture Development (ADM Phases B to D)

Phase B – Business Architecture Risk and Security Considerations

- The security elements of Phase B comprise:
  - Business-level trust
  - Risk
  - Controls

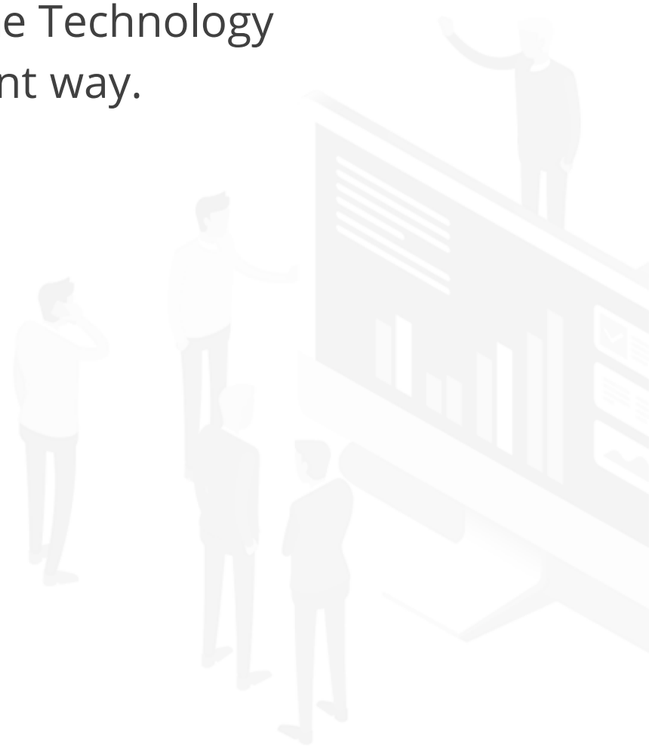
- These are independent from specific IT or other systems within the specific scope of the architecture engagement.

Phase C - Information Systems Architectures Risk and Security Considerations

The security elements of Phase C comprise functional security services and their security classification.

Phase D – Technology Architecture Risk and Security Considerations

- In most cases, the development of specific Technology Architecture security artifacts is not necessary, as long as it incorporates the relevant security controls and mechanisms defined in earlier phases.
- The Security Architect must ensure that the required controls are included in the Technology Architecture and verify whether the controls are used in an effective and efficient way.



4.3 Relevant Information to produce outputs valuable to the Architecture Development

Business Principles, Business Goals, Business Drivers

- An understanding of these is essential to align the architecture work with the business.
- These provide the context for architecture work.
- They describe the needs and ways of working of the enterprise.

Relevant Information from Phase A

- The scope of the problem being addressed.
- Stakeholders and their concerns.
- A summary answer to the problem that is acceptable to the stakeholders (the Architecture Vision).

Architecture Development Phase B Inputs

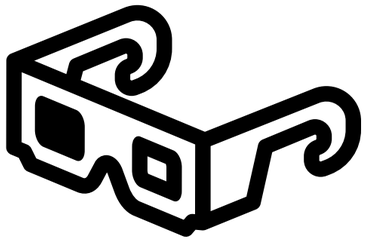
- Reference Materials External to the Enterprise
- Non-Architectural Inputs
  - Request for Architecture Work
  - Business principles, business goals, and business drivers Capability Assessment
  - Communications Plan

Architecture Development Phase B Architectural Inputs

- Organizational Model for Enterprise Architecture
- Tailored Architecture Framework
- Approved Statement of Architecture Work
- Architecture Principles
- Enterprise Continuum
- Architecture Repository
- Architecture Vision
- Draft Architecture Definition Document

ADM Deliverables

"The ADM deliverables are listed in the handout, Appendix B."



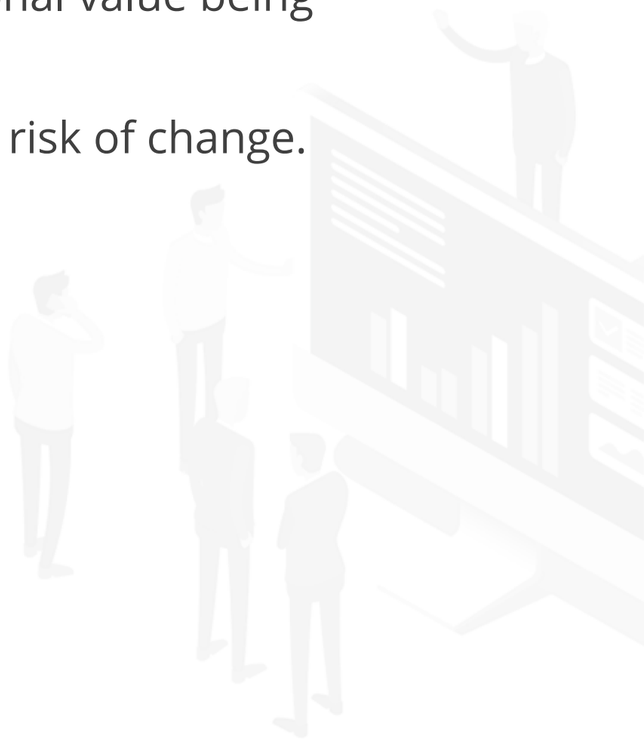
4.4,4.6,4.8 How to apply Phases B, C, and D, and how they contribute to the Architecture Development work

Outcome & Output

- A set of domain architectures approved by the stakeholders for the problem being addressed.
- A set of gaps, and work to clear the gaps understood by the stakeholders.

Essential Knowledge

- 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 stakeholder priority and preference adjust in response to value, effort, and risk of change. (Stakeholder Requirements)



Order of Steps

- The order of the steps, as well as the time at which they are formally started and completed, should be adapted to the situation at hand.
- All activities that have been initiated in these steps should be closed during the Finalize the Architecture step.

Architecture Repository

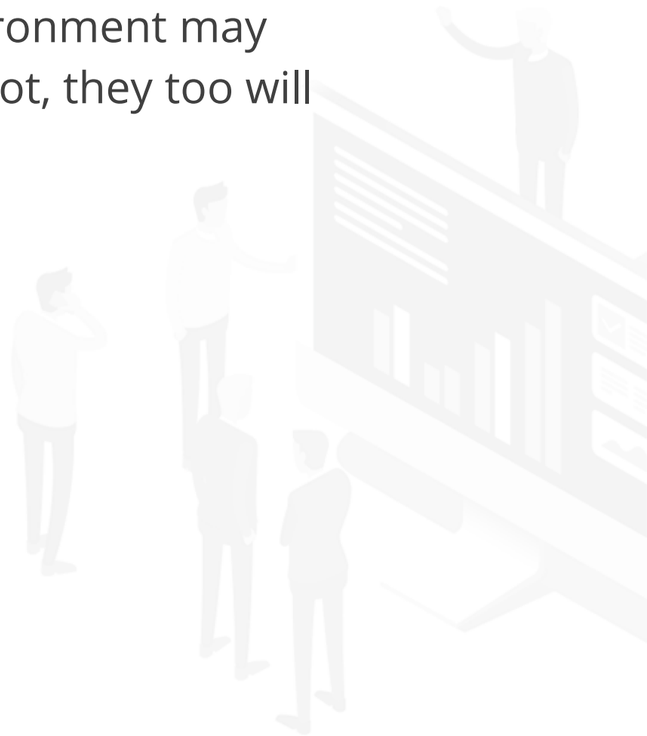
As part of each phase, the architecture team will need to consider what relevant Architecture resources are available in the organization's Architecture Repository.

Applying Phase B: Business Architecture

- Scope depends on existing strategy and planning
  - Update and verify
  - bridge between high-level business drivers, strategy, and
  - goals on the one hand, and specific business requirements
  - Existing architecture discovery must include all relevant detail
- If there is no existing strategy or planning:
  - Identify any existing architecture definitions, then verify and update
  - New process definitions may require detailed work

Applying Phase B: Business Architecture

- The level of details will depend on the scope and goals of the overall architecture effort.
- New models characterizing the needs of the business will need to be defined in detail during Phase B.
- Existing business artifacts to be carried over and supported in the target environment may already have been adequately defined in previous architectural work; but, if not, they too will need to be defined in Phase B.



Applying Phase C: Information Systems Architectures

Phase C involves Data and Applications Architecture, in either order.
Advocates exist for both sequences.

Examples:

- Spewak's *Enterprise Architecture Planning* recommends a data-driven sequence
- Major applications systems (ERP, CRM, …) often combine technology infrastructure and application logic
- An application-driven approach takes core applications (underpinning mission-critical business processes) as the primary focus of the architecture effort; integration issues often constitute a major challenge

Applying Phase C: Information Systems Architectures

Key Considerations for Data Architecture include:

- Data Management
- Data Migration
- Data Governance

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Applying Phase D: Technology Architecture

- The evolution of new technologies is a major driver for change in enterprises looking for new innovative ways of operating and improving their business.
- The Technology Architecture needs to capture the transformation opportunities available to the enterprise through the adoption of new technology.

4.5 Information relevant to Phase C (Data and Applications) to produce outputs for the Architecture Development

Information Systems Architectures Phase C Inputs

Reference Materials External to the Enterprise

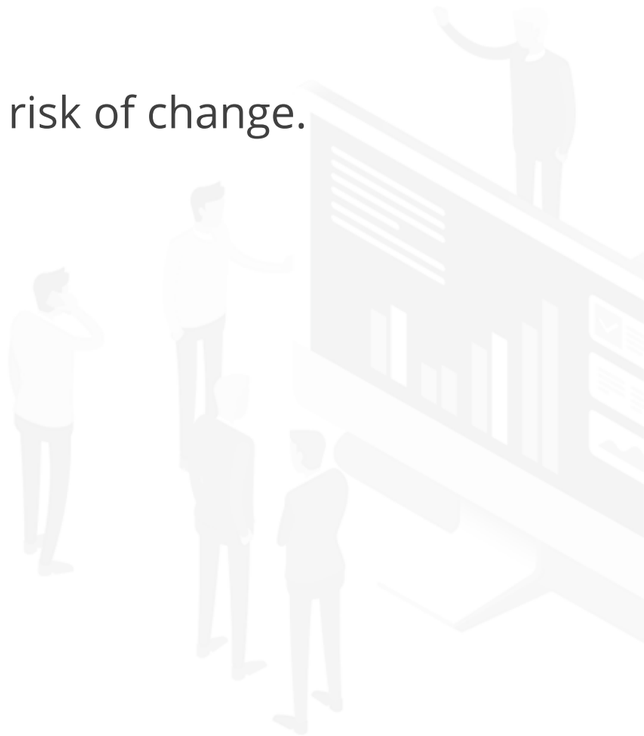
- Non-Architectural Inputs
- Request for Architecture Work
- Capability Assessment
- Communications Plan

Information Systems Architectures Phase C Inputs

- Architectural Inputs
- Organizational Model for Enterprise Architecture
- Scope of organizations impacted
- Tailored Architecture Framework
- Data principles
- Statement of Architecture Work
- Architecture Vision
- Architecture Repository
- Re-usable building blocks (in particular, definitions of current data)
- Draft Architecture Definition Document
- Draft Architecture Requirements Specification
- Business Architecture components of an Architecture Roadmap

Phase C Essential Knowledge

- 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 stakeholder priority and preference adjust in response to value, effort, and risk of change. (Stakeholder Requirements)



4.7 Information needed in Phase D to produce outputs relevant to the architecture development

Technology Architecture Phase D Inputs

Reference Materials External to the Enterprise

- Architecture reference materials
- Product information on candidate products

Non-Architectural Inputs

- Request for Architecture Work
- Capability Assessment
- Communications Plan

Technology Architecture Phase D Architectural Inputs

- Organizational Model for Enterprise Architecture, including:
  - Scope of organizations impacted
  - Maturity assessment, gaps, and resolution approach
  - Roles and responsibilities for architecture team(s)
  - Constraints on architecture work
  - Budget requirements
  - Governance and support strategy
- Tailored Architecture Framework, including:
  - Tailored architecture method
  - Tailored architecture content (deliverables and artifacts)
  - Configured and deployed tools

Technology Architecture Phase D Architectural Inputs

- Technology principles, if existing
- Statement of Architecture Work
- Architecture Vision
- Architecture Repository, including:
  - Re-usable building blocks
  - Publicly available reference models
  - Organization-specific reference models
  - Organization standards
- Draft Architecture Definition Document, which may include Baseline and/or Target Architectures of any architecture domain
- Draft Architecture Requirements Specification, including:
  - Gap analysis results (from Business, Data, and Application Architectures)
  - Relevant technical requirements from previous phases
- Business, Data, and Application Architecture components of an Architecture Roadmap

Phase D Essential Knowledge

- 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 stakeholder priority and preference adjust in response to value, effort, and risk of change. (Stakeholder Requirements)

4.9 Outputs of Phases B, C, and D necessary to proceed with the Architecture Development work

Phase B, C and D Outputs

- Refined and updated versions of the Architecture Vision phase deliverables
- Draft Architecture Definition Document
- Draft Architecture Requirements Specification
- Business/Data/Application/Technology Architecture components of an Architecture Roadmap

Lists of outputs for each phase are included in the handout.

Outcome & Output

- A set of domain architectures approved by the stakeholders for the problem being addressed.
- A set of gaps, and work to clear the gaps understood by the stakeholders.

Practice with Learning Studies Architecture Development