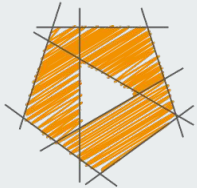




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# TOGAF® Standard 9.2

---

**New version introduced in 2018**

—



# What This Course Covers

Preparation for the Part 1 exam for TOGAF Foundation

Structure of the TOGAF standard document

Definitions

Basic and core concepts of the TOGAF standard

The ADM

**Industry leading standard for  
enterprise architecture**

---

**Supported by hundreds of  
organizations worldwide**

---

**I can't promise “fun”, but I will  
try like heck to avoid “boring”**

---

**Ready?**

—



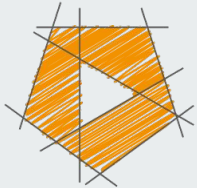


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**Trying not to talk about myself**

—

**Try harder, Scott**

---

**In the IT industry for over 20  
years**

---

# Teaching TOGAF online for 4 years

---

**Over 47,000 students in the 9.1  
course**

—

# Member of The Open Group





**Licensed to teach TOGAF  
commercially**

---

**Goal of the course is to pass  
the exam**

—

**And help you understand this  
500 page standard in an easier  
way**

---

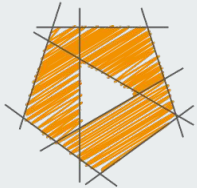


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# What is TOGAF, Anyways?

---

# **An architecture framework for enterprise architecture**

---

# What's a framework?

---



# Methods, tools, and common definitions

---

# Architecture Development Method (ADM)

---

# What is architecture?

---

**“It’s complicated”**

---

# **ISO/IEC/IEEE 42010 : 2011**

---



## **ISO/IEC/IEEE 42010: 2011**

“The fundamental concepts or properties of a system in its environment embodied in its elements, relationships, and in the principles of its design and evolution.”

**TOGAF 9.2 agrees with that.  
But also adds.**

---



## **TOGAF 9.2 Definition of Architecture.**

“The structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time.”



**Both are saying the same  
thing.**

---

**An architecture is the  
components of a system and  
their relationship.**

---

**AND the principles governing  
their design and evolution over  
time.**

---

**An architecture framework is  
how we do architecture.**

---

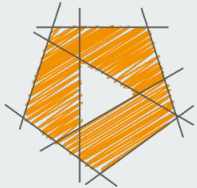


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# TOGAF 9 Certification for People Program

---

# Two Levels

---



**Level 1 and Level 2**  
**Or**  
**Part 1 and Part 2**

—

**Passing the Part 1 gives you  
TOGAF Foundation**

---

**Passing Part 2 gives you  
TOGAF Certified**

---



# TOGAF Part 1

- A test of core knowledge of the standard
- A multiple-choice test, only 1 correct answer
- 40 questions over 60 minutes
- Need 55% to pass, or 22 correct out of 40
- Each correct answer is worth 1 point



## TOGAF Part 2

- A test of how you apply the TOGAF Standard
- A scenario based test, scored using gradient scoring
- Open book exam
- 8 questions over 90 minutes
- Need 60% to pass
- Must have passed Part 1 to take Part 2

**US\$360 per test  
(as of Jan 1, 2020)**

—

**US\$550 for the combined test  
(as of Jan 1, 2020)**

—

**English (+ESL)**  
**LATAM Spanish**  
**Brazilian Portuguese**  
**Simplified Chinese**  
**French**

---



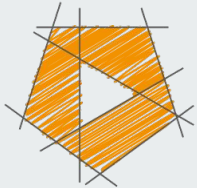


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# TOGAF 9.2 Standard Document

---

**Recommend you read the  
relevant chapter with each  
lesson**

—

**Free HTML or PDF version on  
The Open Group website**

---

# Part I: Introduction

---

# Part II: ADM

---

# Part III: Guidelines and Techniques

---



# Part IV: Architecture Content Framework

---

# Part V: Enterprise Continuum

---

# Part VI: Architecture Capability Framework

---

# Core Standard + TOGAF Library

---

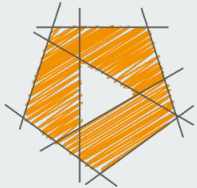


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# TOGAF Core Concepts

---

**“The core concepts of the  
TOGAF 9 Standard”**

---





## 7 Core Concepts

- The definition of enterprise
- The architecture domains, or BDAT
- The architecture development method, or ADM
- Deliverables, artifacts and building blocks
- The enterprise continuum
- The architecture repository
- And, defining architecture capability

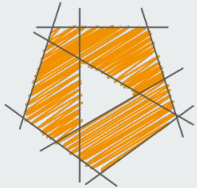


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# Part 1 Enterprise Architect

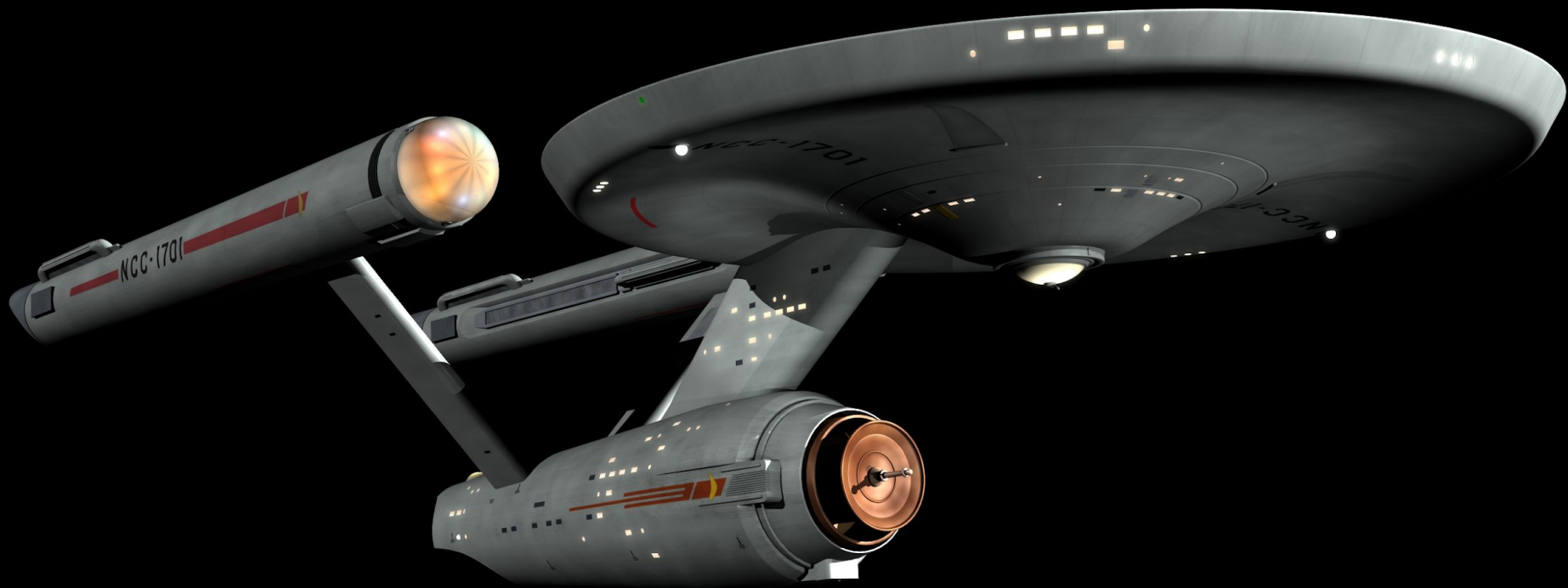
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# The definition of Enterprise

---



**Not that one.**

---

**“Highest level of description  
for an organization”**

---

**Board of directors, executive  
team, the deciders**

—



**Could be a collection of  
organizations.**

---

**“Highest level of description  
for an organization”**

---

# Scope of enterprise architecture

---

**Maybe you are an enterprise architect but not responsible for the whole enterprise.**

—

**The enterprise might be  
scoped differently for EA.**

---

**You should know where that  
scope is before you start.**

---

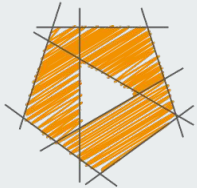


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# Architecture Domains

---

**Everyone's favorite acronym -  
BDAT**

—

**Business  
Data  
Application  
Technology**

—

# Layers of the architecture cake

---

# Business Domain

---

# Data Domain

---

# Application Domain

---

# Technology Domain

---



**Business  
Data  
Application  
Technology**

—

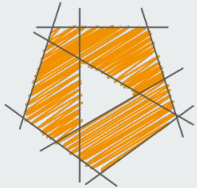


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**ADM**

—

# The heart of TOGAF

---

**ADM is a process to define  
enterprise architecture**

---

**Tested and repeatable**

—

# Preliminary Phase

---



# Phase A : Vision

---

**Phases B, C, D : BDAT**

—

# Phases E, F : Planning

---

# Phase G : Implementation

---

# Phase H : Change Management

---

# Requirements Management Phase Ongoing

---

**Insert Coin :  
Would you like to play again?**

—



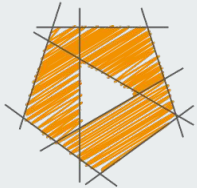
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# Artifacts, Deliverables, and Building Blocks

---

# Architecture Content Framework



# Artifacts

---

- Lists
- Matrices
- Diagrams

---

# Deliverables

---



## **Deliverables**

“contractually specified and in turn formally reviewed, agreed, and signed off by the stakeholders”

**These are the important  
documents**

---



# Building Blocks

---

# Architecture Building Blocks (ABBs)

---

**Named concepts that can be  
reused in other places**

---

# **Solution Building Blocks (SBBs)**

---

**These are implementations of  
the ABBs**

---

**ABB:**

**Ability to look up a customer's  
info**

—

# **SBB:**

# **CRM Customer Search Module**

---



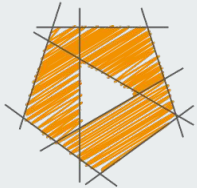
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# Enterprise Continuum

---



# What's with the Star Trek references?

---

**A way to classify items in the  
architecture repository**

---

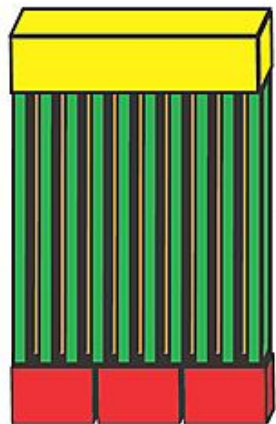
**From extremely generic to  
extremely specific**

---

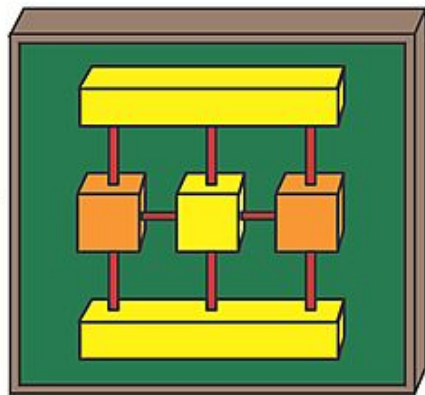
**Usually represented by a  
straight line**

—

**Foundation  
Architectures**



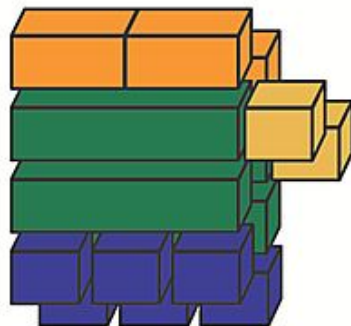
**Common  
Systems  
Architectures**



**Industry  
Architectures**

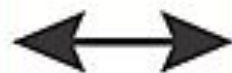
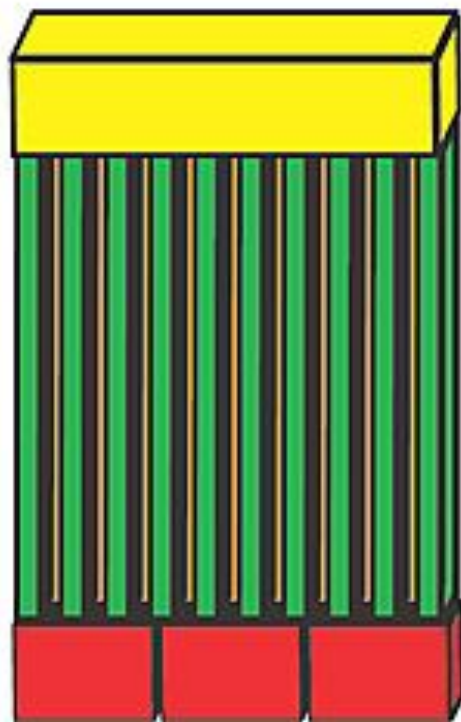


**Organization-Specific  
Architectures**

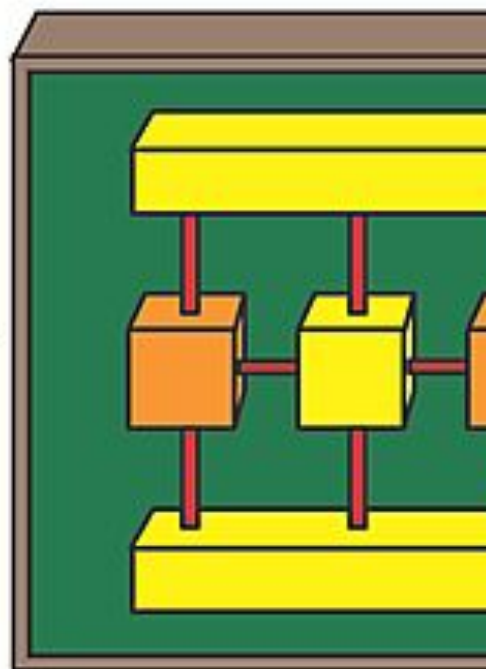




## Foundation Architectures



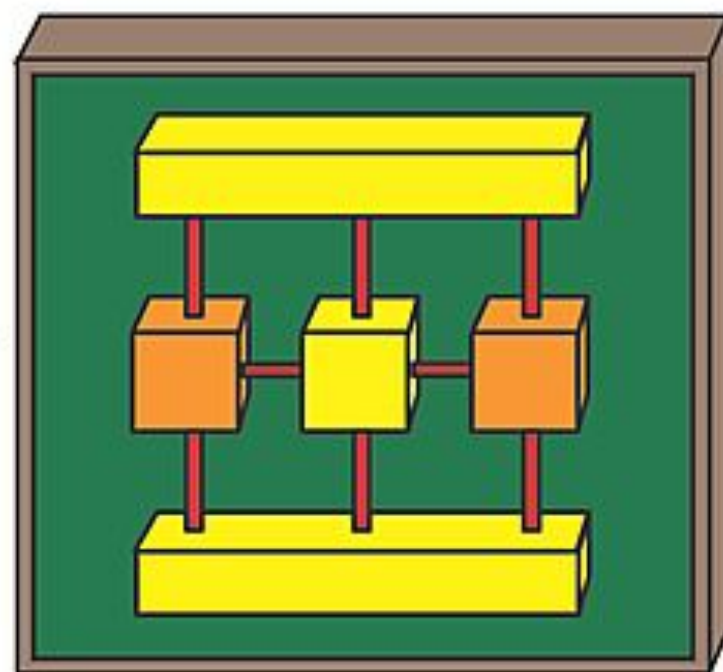
## Common System Architectures



Foundation  
Architectures



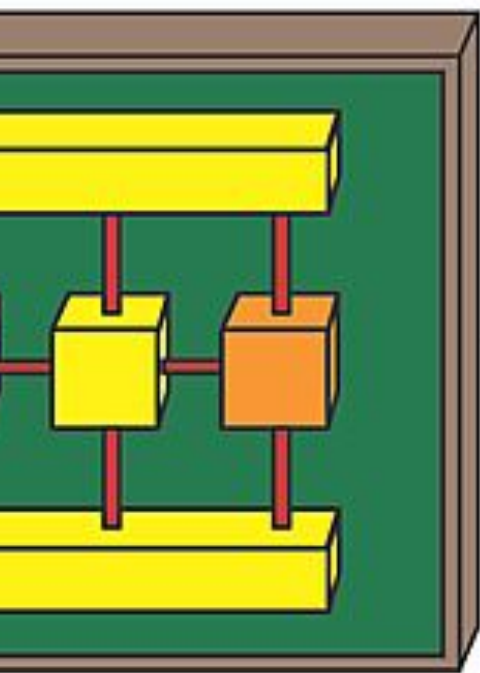
Common  
Systems  
Architectures



Industry  
Architectures



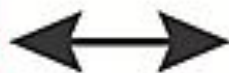
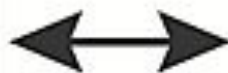
# Common Systems Architectures



# Industry Architectures



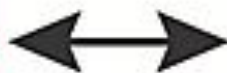
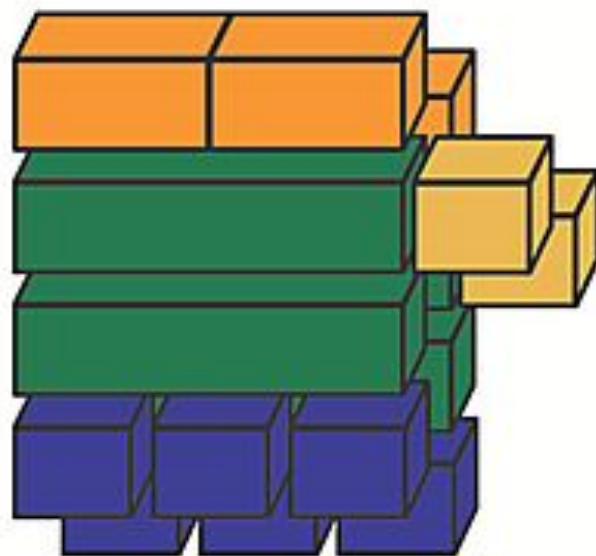
# Organization-S Architectur

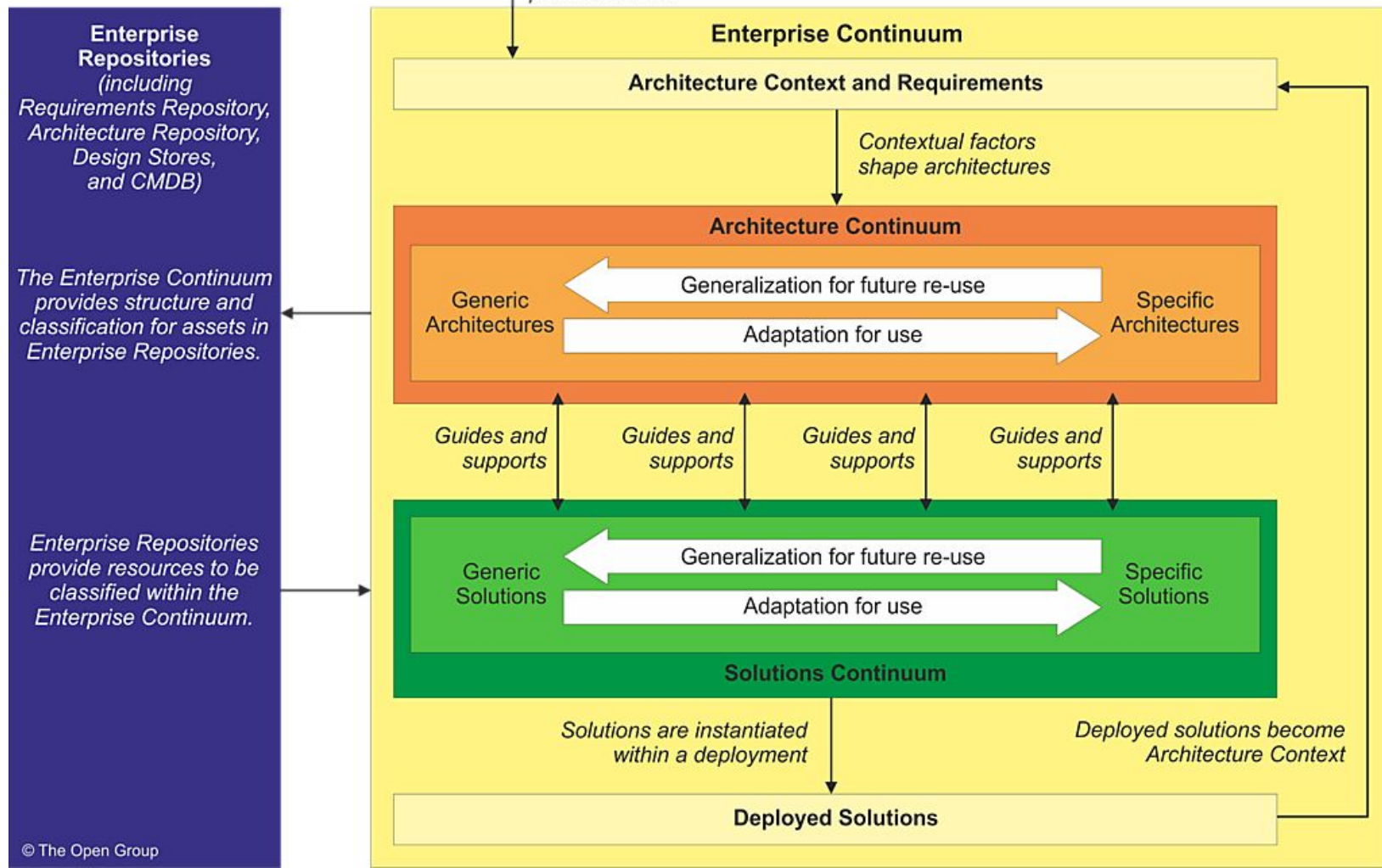


## Industry Architectures



## Organization-Specific Architectures





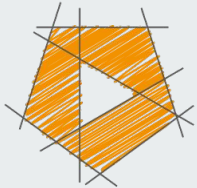


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# Architecture Repository

---



**Central storage for important  
architecture documents**

---

**Not**

**C:\users\scott\Documents**

—

# A well organized file server

---

# Versioned file system like Git

---

# Knowledge management tool

---

**Each company can choose its  
own tool**

---



# The Architecture Repository contains...

- Architecture Metamodel
- Architecture Capability
- Architecture Landscape
- Standards Information Base (SIB)
- Reference Library
- Governance Log
- Architecture Requirements Repository (\*new in 9.2)
- Solutions Landscape (\*new in 9.2)



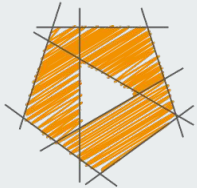
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# Architecture Capability

---

**CAPABILITY ESTIMATION**



**NOT FOR THE WEAK AT HEART**

# **An evaluation of your architecture capability**

---

**You may have no capability  
currently**

---

**Requires effort to grow  
architecture capability**

---

# Preliminary Phase of ADM

---

**Capability has a relationship to  
governance and repository**

---



**Ability to establish  
architecture contract part of  
capability too.**

—

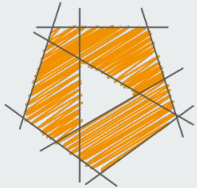


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**ADM!**

—

# The main course

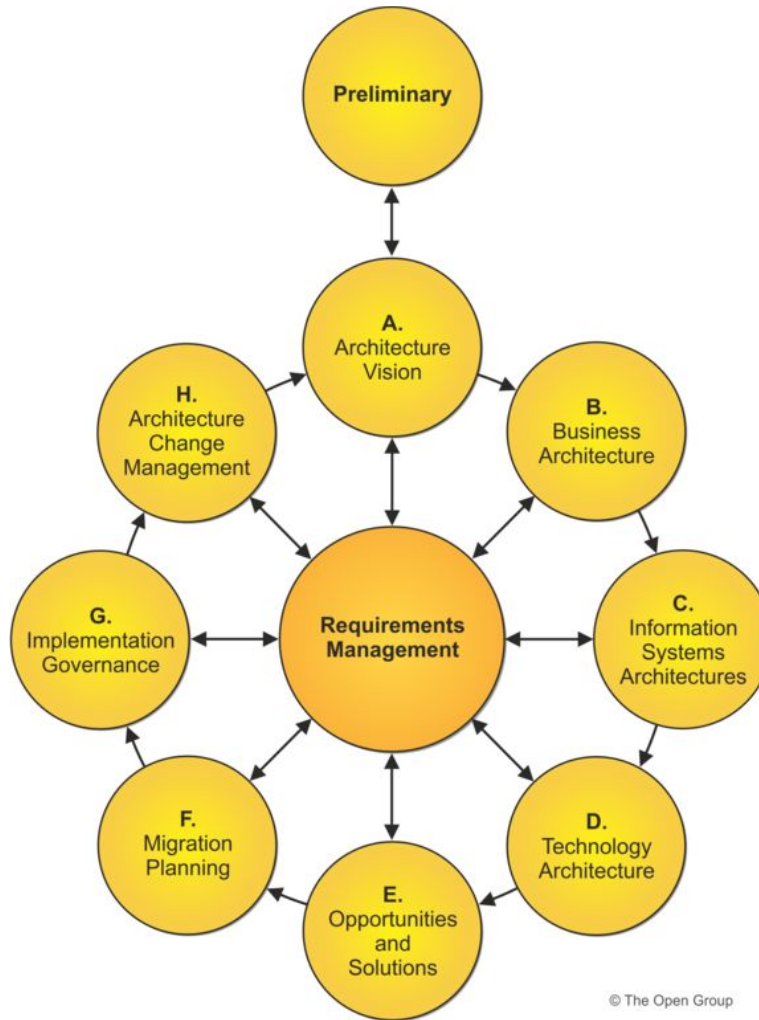
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**The ADM is the process by  
which an architecture is  
defined**

---

**10 phases**

—





**8 phases make up ADM Cycle**

—

# Objective, Inputs, Steps, Outputs

---

**First time through might be  
tough**

---

**Repository is empty**

---

**And low level of architecture  
capability**

—

**It gets easier!**

---

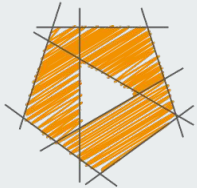


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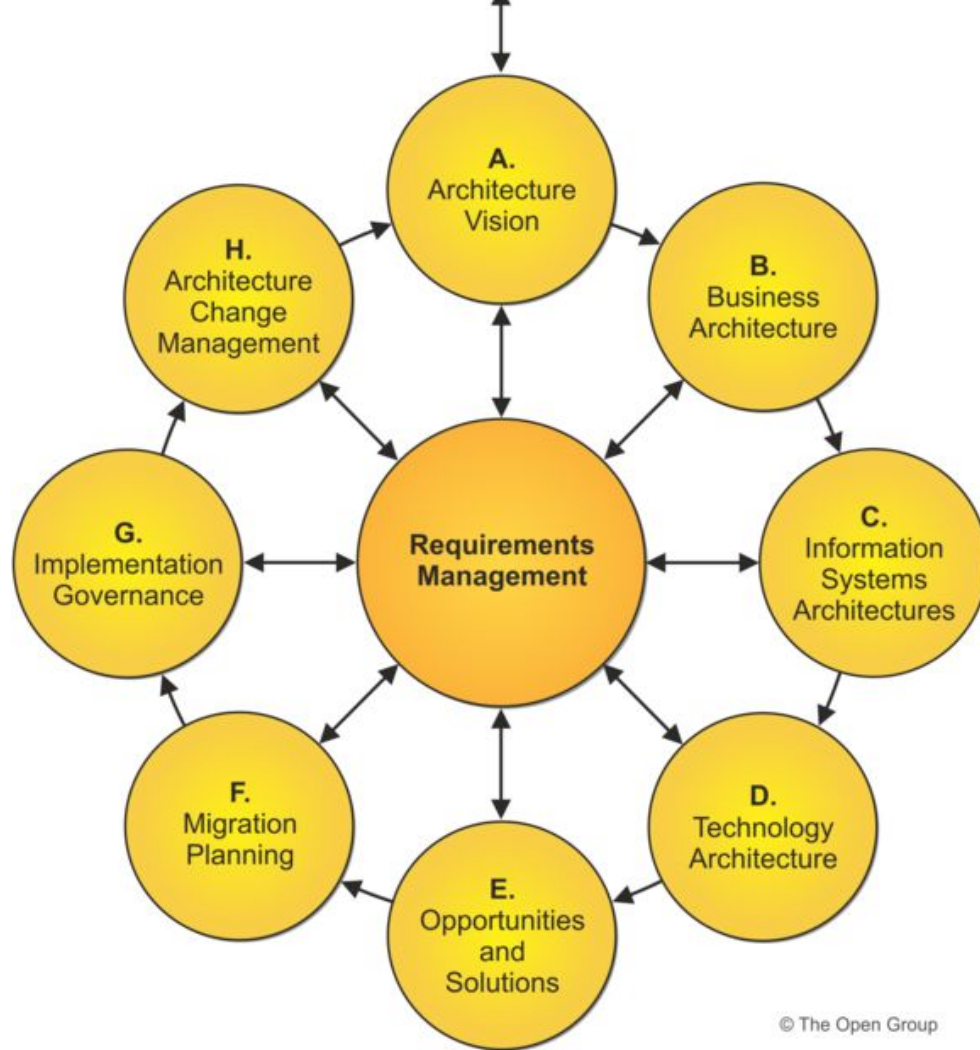


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# ADM Cycle

---



# 8 Phases of the ADM - A thru H

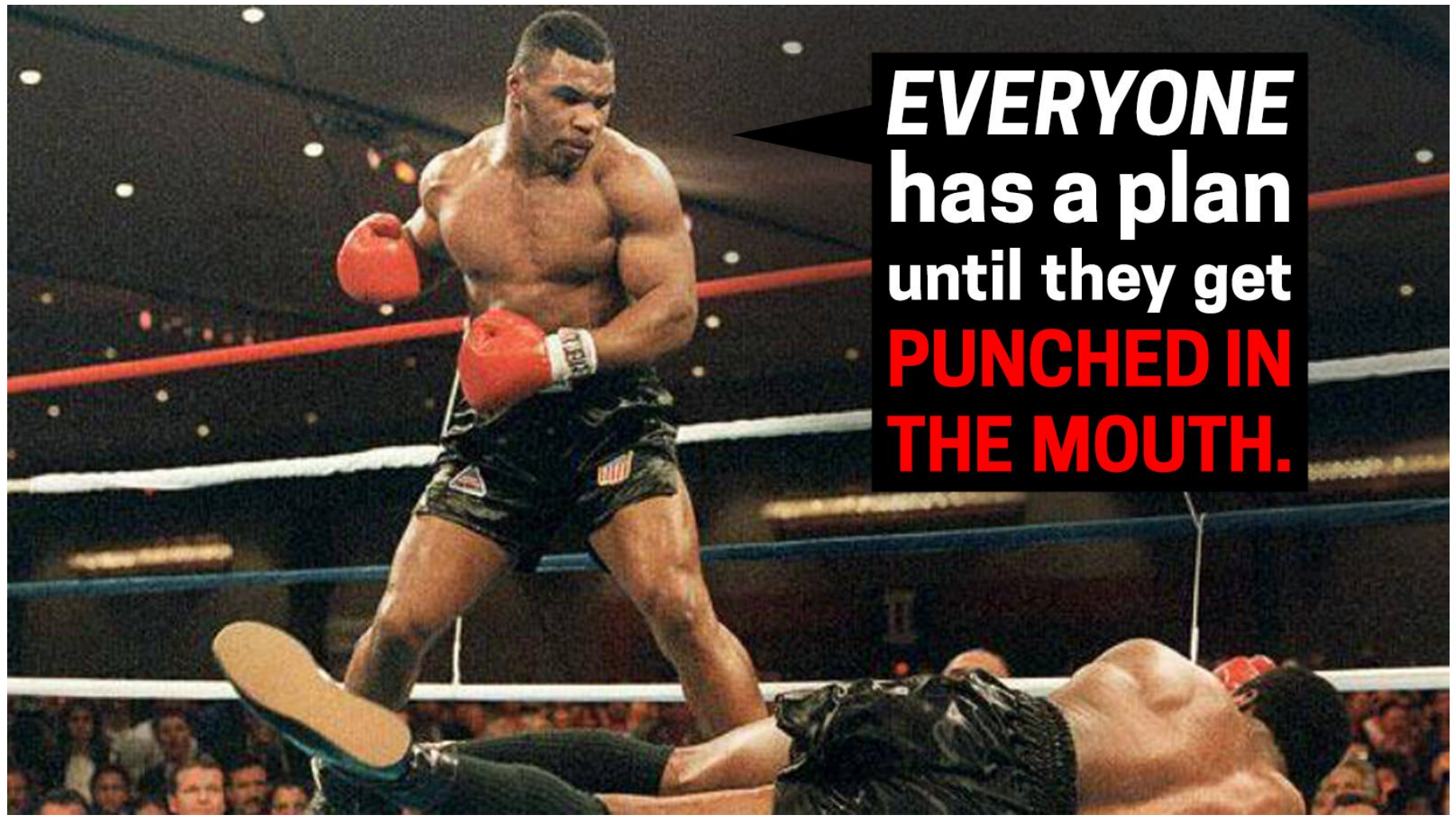
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**ADM cycle is designed to start over once the last phase is complete**

—

# Requirements Management in the center

---



***EVERYONE***  
**has a plan**  
**until they get**  
**PUNCHED IN**  
**THE MOUTH.**

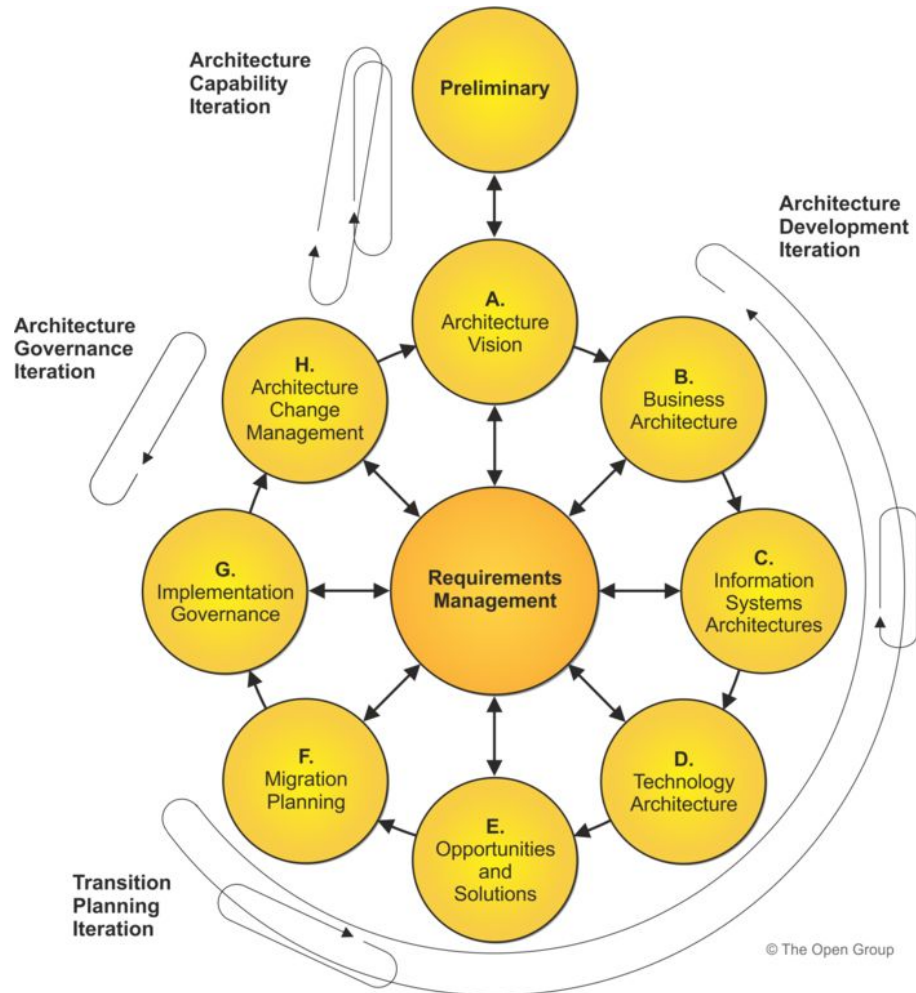
**Phases can be paused to go  
back and revise a past phase**

---

# Iterations

---





**TOGAF designed to be tailored**

---

**ADM can be adapted to your  
needs**

---

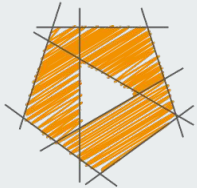


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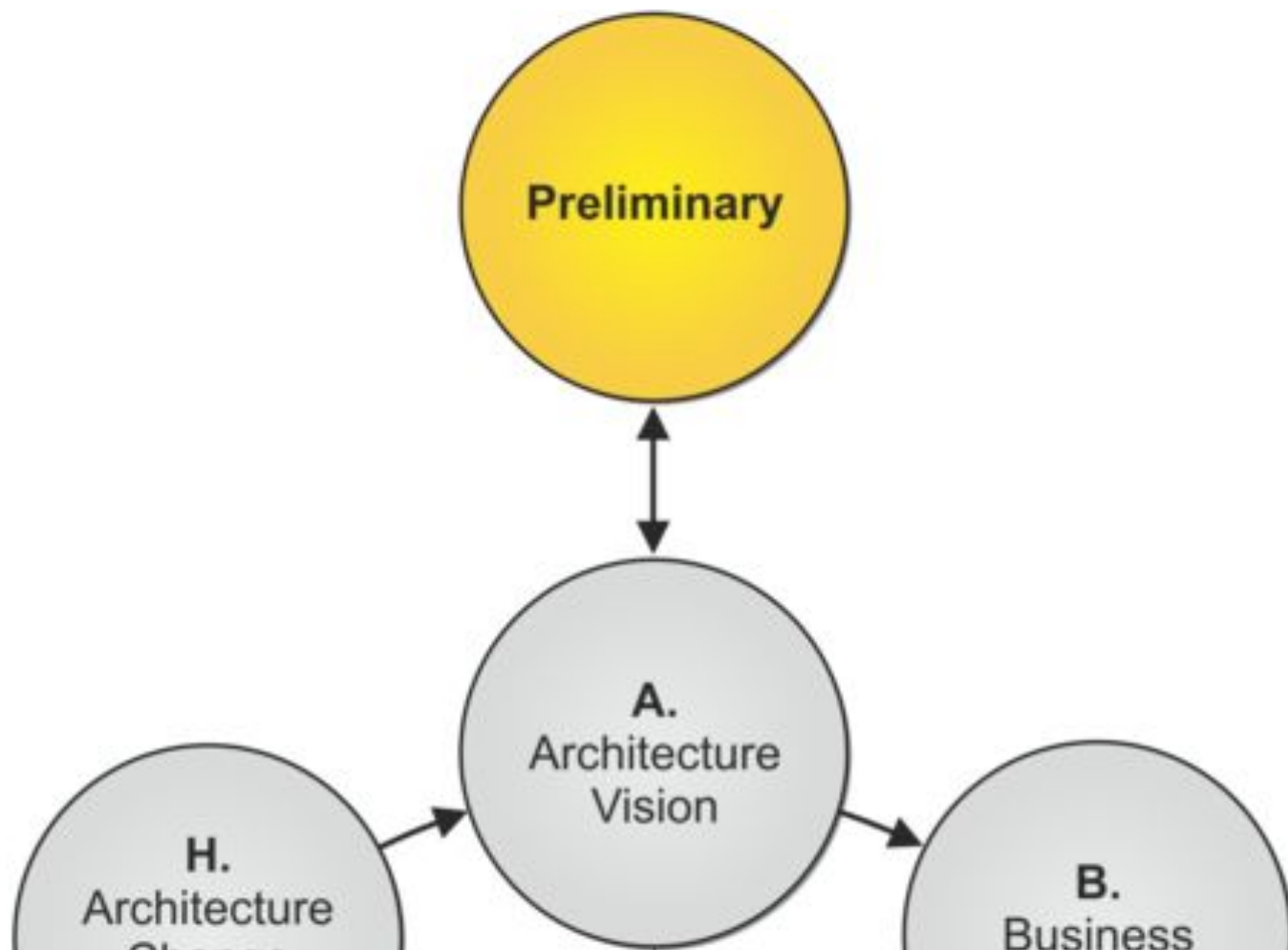
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# Preliminary Phase

---



The purpose is to: define the  
architecture capability  
desired

---



**The purpose is to: establish the  
architecture capability...**

—

**... including architecture  
principles**

---

**"where, what, why, who, and  
how we do architecture"**

---



# Inputs to Preliminary Phase

1. The TOGAF Library
2. Other architecture frameworks
3. Board strategies and board business plans, business strategy, IT strategy, business principles, business goals, and business drivers
4. Major frameworks operating in the business (e.g. SCRUM)
5. Governance and legal frameworks, including Architecture Governance strategy



# Inputs to Preliminary Phase

6. Architecture capability
7. Partnership and contract agreements
8. Existing documents relating to architecture capability
9. Organizational Model for Enterprise Architecture
10. Existing Architecture Framework



## Steps to Preliminary Phase

1. Scope the enterprise organizations impacted
2. Confirm governance and support frameworks
3. Define and establish architecture team
4. Identify and establish architecture principles
5. Tailor TOGAF and other frameworks
6. Implement architecture tools



# Outputs from Preliminary Phase

1. Organizational Model for Enterprise Architecture
2. Tailored Architecture Framework
3. Initial Architecture Repository
4. Business principles, business goals, and business drivers
5. Request for Architecture Work (optional)
6. Architecture Governance Framework



# Artifacts Produced

- Principles catalog



# Principles hardly ever change

---

---

**The purpose is to define and establish your architecture capability including architecture principles**

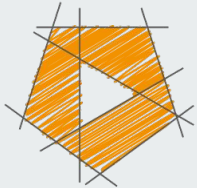


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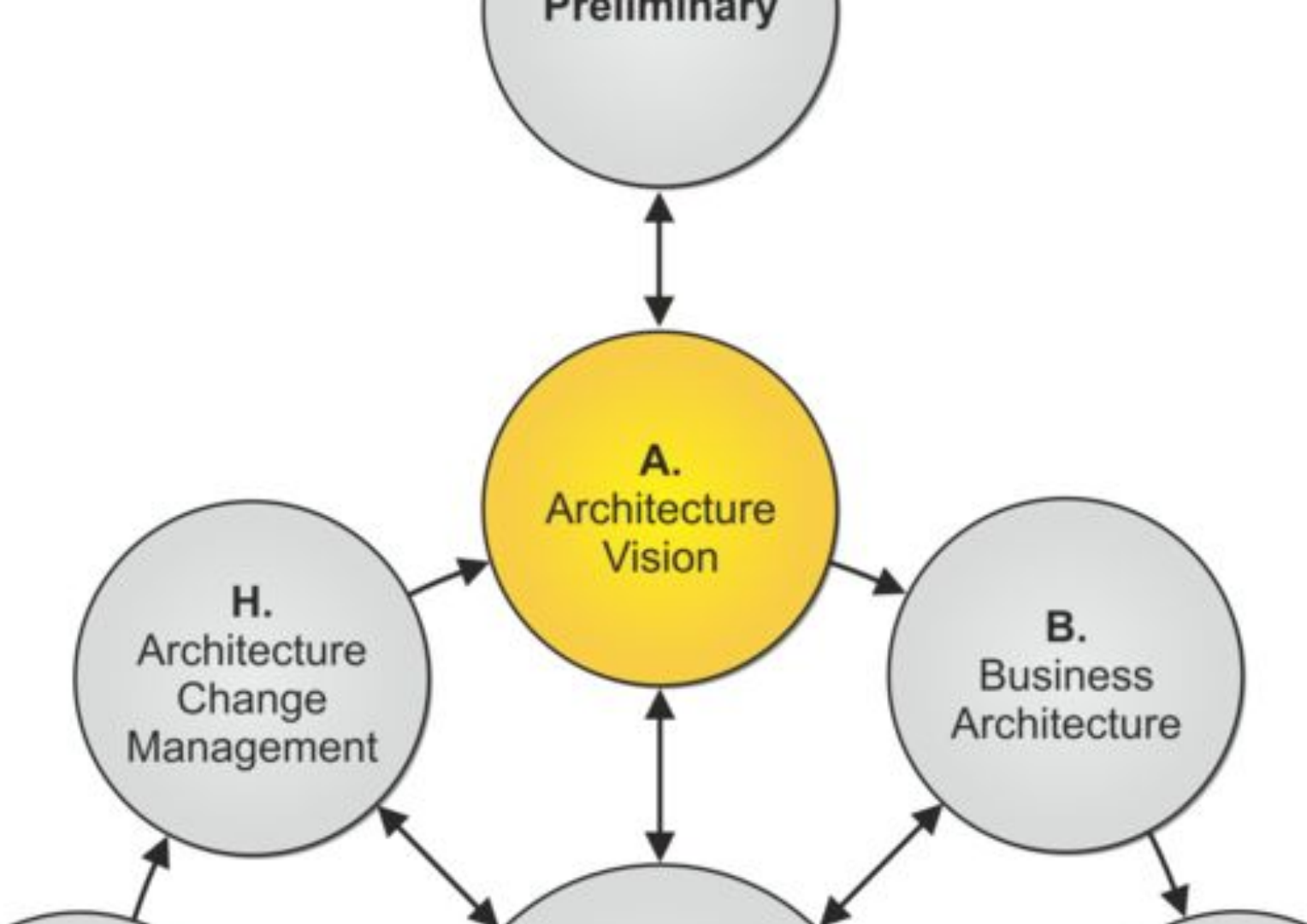
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# Phase A, Architecture Vision

---



**The purpose is to: develop a  
high-level aspirational vision of  
the business value to be  
delivered**

—

**The purpose is to: obtain  
approval for a Statement of  
Architecture Work**

---





# Inputs to Phase A

1. Architecture reference materials
2. Request for Architecture Work
3. Business principles, business goals, and business drivers
4. Organizational Model for Enterprise Architecture
5. Tailored Architecture Framework
6. Populated Architecture Repository



## Steps to Phase A

1. Establish architecture project
2. Identify stakeholders, concerns and business requirements
3. Confirm business goals, drivers and constraints
4. **Evaluate capabilities (updated for TOGAF 9.2)**
5. Assess readiness for transformation
6. Define scope



## Steps to Phase A

7. Confirm architecture principles, including business principles
8. Develop architecture vision
9. Define the target architecture value and KPIs
10. Identify transformation risks and mitigation activities
11. Develop Statement of Architecture Work, secure approval



# Outputs from Phase A

1. Approved Statement of Architecture Work
2. Refined statements of business principles, goals and drivers
3. Architecture principles
4. Capability assessment
5. Tailored architecture framework



## Outputs from Phase A

6. Architecture vision
7. Draft architecture definition document (version 0.1 of all baseline and target BDAT documents)
8. Communications plan
9. Additional content in the Architecture Repository



# Artifacts Produced

- Matrices: Stakeholder map matrix
- Diagrams: Business model diagram, Business capability map, Value stream map, Value chain diagram, Solution concept diagram

**The high-level vision incl  
emerging technologies that  
impact your industry**

—

**Very high-level, rough  
description of what the  
end-state of the architecture  
will be**

—



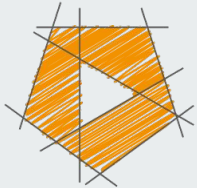


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# Part 1 Enterprise Architect

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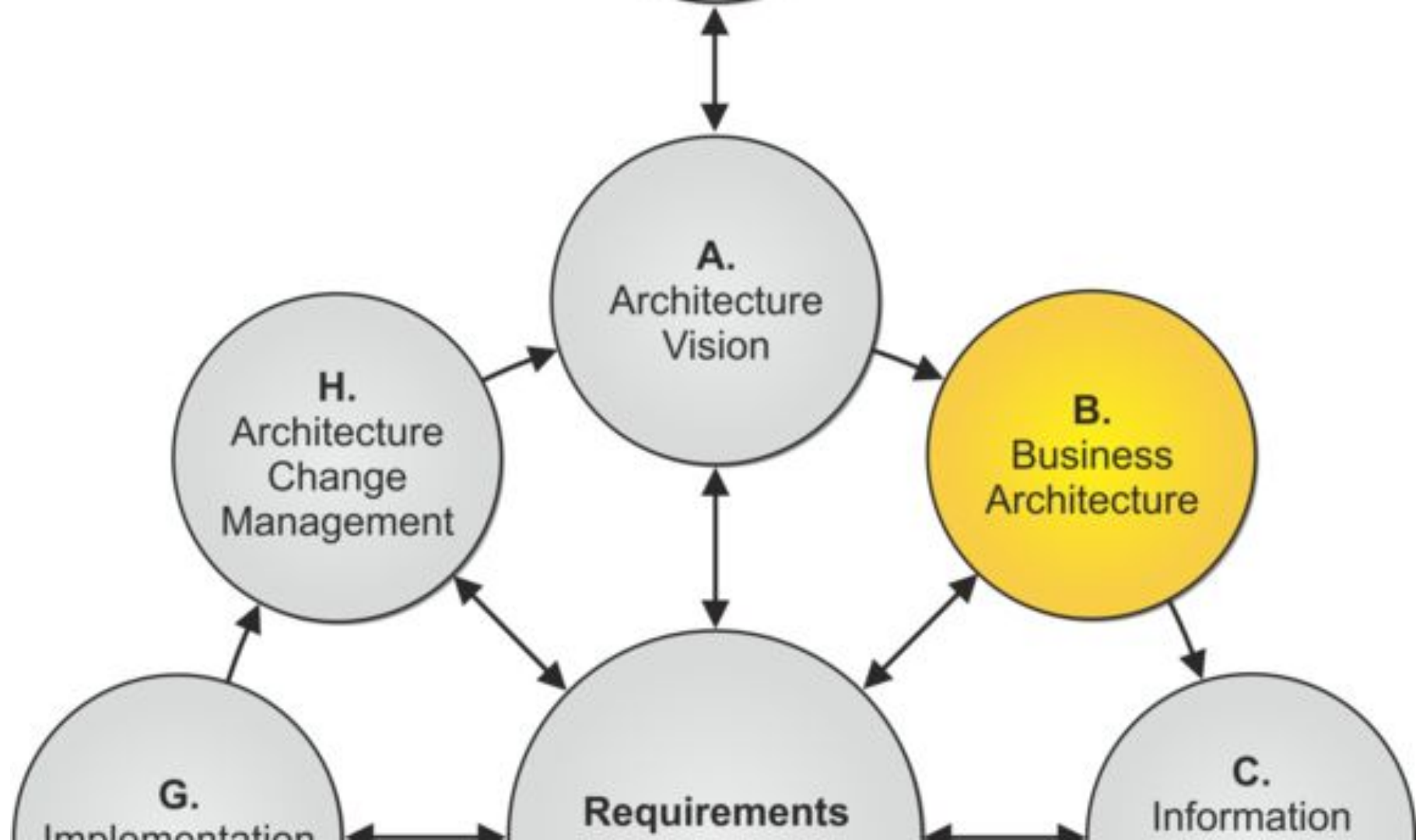
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# The BDAT phases

---

# Phase B, Business Architecture

---



The purpose is to:  
develop the target business  
architecture

---

The purpose is to: identify  
candidate Architecture  
Roadmap items based on gaps

---

**Based on the Architecture  
Vision in the previous phase**

---





## Inputs to Phase B

1. External reference materials
2. Request for Architecture Work (optional) (Preliminary Phase)
3. Business principles, goals, and drivers (Phase A)
4. Capability assessment (Phase A)
5. Communications plan (Phase A)



## Inputs to Phase B

6. Organization Model for Enterprise Architecture (Prelim Phase)
7. Tailored Architecture Framework (Prelim Phase)
8. Approved Statement of Architecture Work (Phase A)
9. Architecture principles (Phase A)
10. Enterprise continuum
11. Architecture Repository



## Inputs to Phase B

12. Architecture vision (Phase A)
13. Draft architecture definition document  
(version 0.1 of all baseline and target BDAT documents)  
(Phase A)



## Steps for Phase B

1. Select reference models, viewpoints, and tools
2. Develop baseline business architecture description
3. Develop target business architecture description
4. Perform gap analysis
5. Define candidate roadmap components
6. Resolve impacts across the architecture landscape



## Steps for Phase B

7. Conduct formal stakeholder review
8. Finalize business architecture
9. Create architecture definition document



## Outputs from Phase B

1. Refined Phase A deliverables
2. Draft architecture definition document
  - a. Baseline business architecture, v1.0 (detailed)
  - b. Target business architecture, v1.0 (detailed)
3. Draft architecture requirements specification – gap analysis
4. Business architecture components of an architecture roadmap



## Artifacts Produced

Catalogs: Value Stream catalog, Business Capabilities catalog, Value Stream Stages catalog, Organization/actor catalog, Driver/goal/objective catalog, role catalog, business service/function catalog, location catalog, process/event/control/product catalog, contract/measure catalog

Matrices: Value Stream/Capability matrix, Strategy/Capability matrix, Capability/Organization matrix, Business interaction matrix, actor/role matrix

Diagrams: Business Model diagram, Business Capability Map, Value Stream Map, Organization Map, Business footprint diagram, business service/information diagram, function decomposition diagram, product lifecycle diagram, goal/objective/service diagram, business use-case diagram, organization decomposition diagram, process flow diagram.

**This phase underwent the  
most change from 9.1 to 9.2**

—



**A: Architecture Vision about  
establishing the business  
goals**

—

**B: Business architecture about  
how to get there**

---

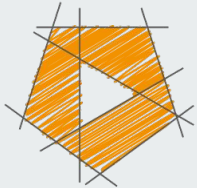


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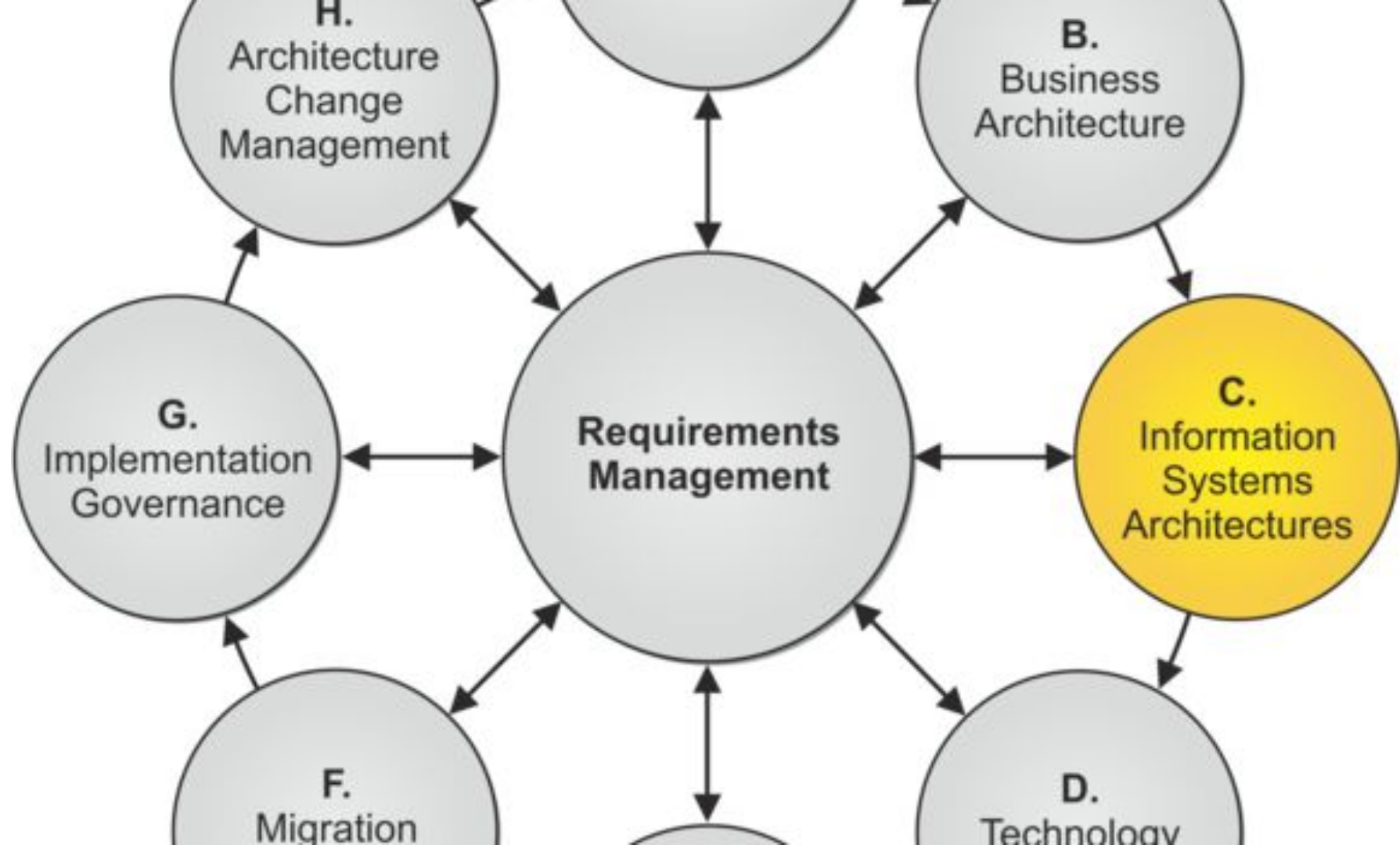
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# Phase C

---



**Phase C is an odd duck**

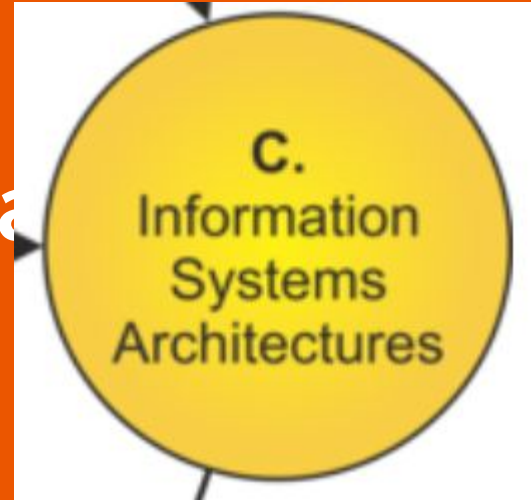
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**2 phases in 1:  
Define data and applica  
architectures**

---



**The objective, inputs, steps,  
output are almost the same**

---

The purpose is to: develop the  
target information systems  
architectures

—

The purpose is to: identify  
candidate Architecture  
Roadmap items based on gaps

---

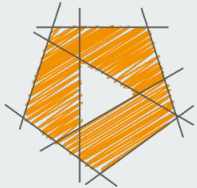


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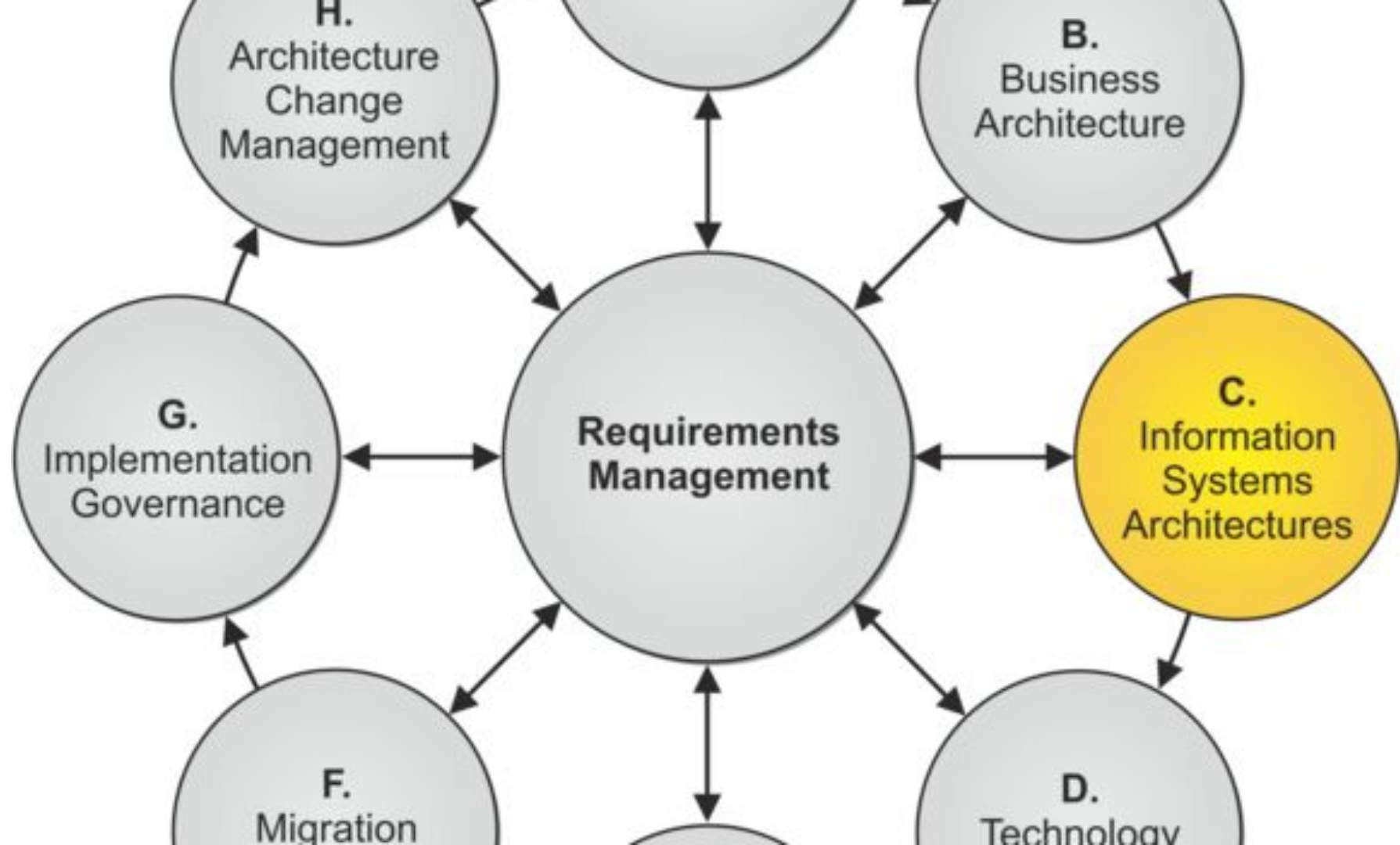
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# Phase C, Data Architecture

---





**The purpose is to: develop the  
target data architecture**

—

The purpose is to: identify  
candidate Architecture  
Roadmap items based on gaps

---



# Inputs to Phase C, Data Architecture

1. External reference materials
2. Request for Architecture Work (optional) (Preliminary Phase)
3. Capability assessment (Phase A)
4. Communications plan (Phase A)
5. Organization Model for Enterprise Architecture (Prelim Phase)
6. Tailored Architecture Framework (Prelim Phase)



## Inputs to Phase C, Data Architecture

7. Data principles (TOGAF Specification Chapter 20)
8. Approved Statement of Architecture Work (Phase A)
9. Architecture vision (Phase A)
10. Architecture Repository
11. Draft architecture documents and draft requirements (Phase B)
12. Business related architecture roadmap (Phase B)



## Steps for Phase C, Data Architecture

1. Select reference models, viewpoints, and tools
2. Develop baseline data architecture description
3. Develop target data architecture description
4. Perform gap analysis
5. Define candidate roadmap components
6. Resolve impacts across the architecture landscape



## Steps for Phase C, Data Architecture

7. Conduct formal stakeholder review
8. Finalize data architecture
9. Create architecture definition document



# Outputs from Phase C, Data Architecture

1. Refined Phase A deliverables
2. Draft architecture definition document
  - a. Baseline data architecture, v1.0
  - b. Target data architecture, v1.0
3. Draft architecture requirements specification – gap analysis
4. Data architecture components of an architecture roadmap



# Artifacts Produced

Catalogs: Data entity/data component catalog

Matrices: Data entity/business function matrix, **Application/Data matrix**

Diagrams: Conceptual data diagram, logical data diagram, data dissemination diagram, data security diagram, data migration diagram, data lifecycle diagram



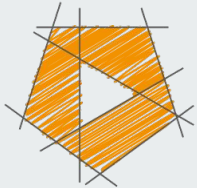


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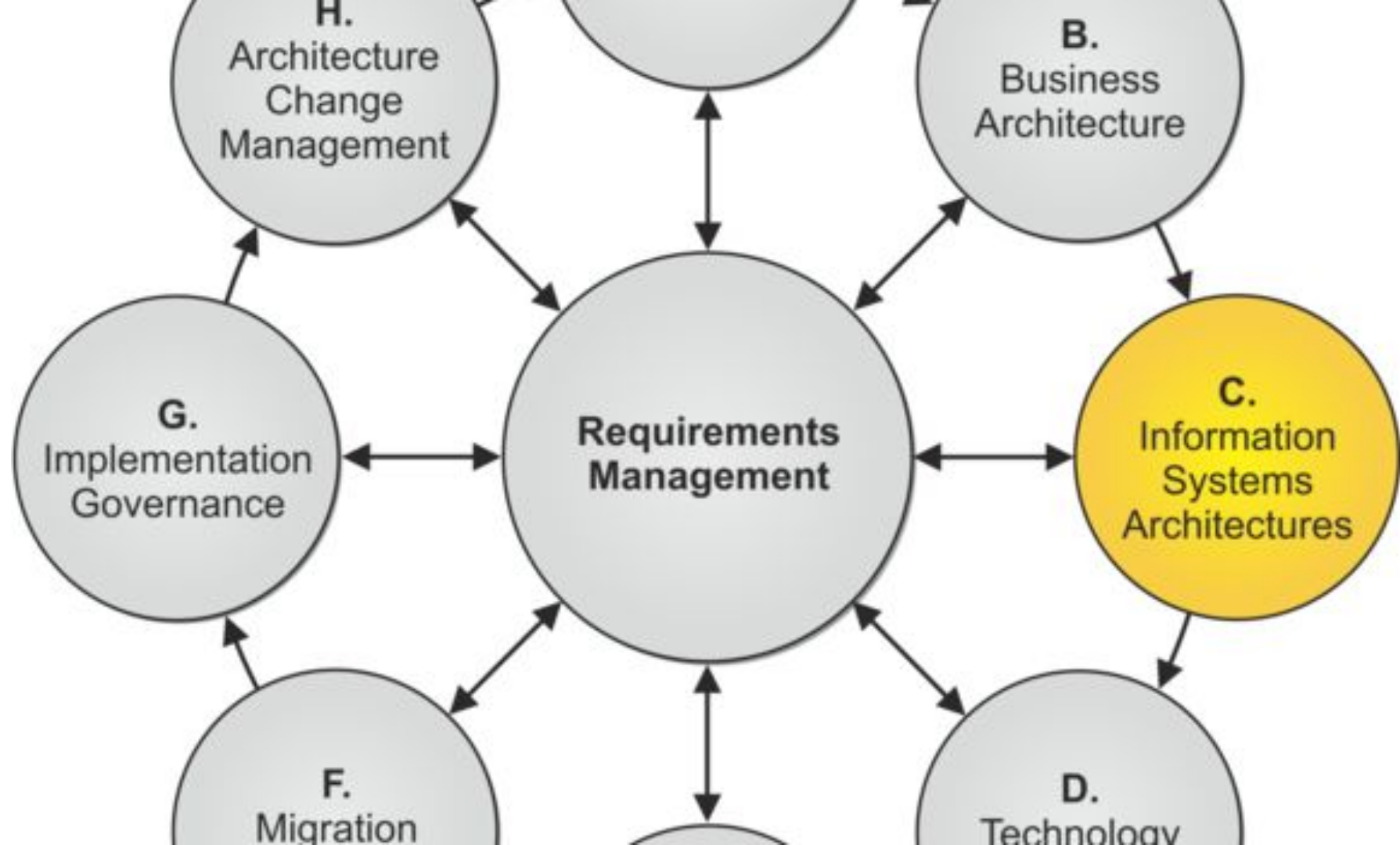
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# Phase C, Application Architecture

---



**The purpose is to: develop the  
target application architecture**

—

The purpose is to: identify  
candidate Architecture  
Roadmap items based on gaps

---



# Inputs to Phase C, Application Architecture

1. External reference materials
2. Request for Architecture Work (optional) (Preliminary Phase)
3. Capability assessment (Phase A)
4. Communications plan (Phase A)
5. Organization Model for Enterprise Architecture (Prelim Phase)
6. Tailored Architecture Framework (Prelim Phase)



# Inputs to Phase C, Application Architecture

7. Application principles (TOGAF Specification Chapter 20)
8. Approved Statement of Architecture Work (Phase A)
9. Architecture vision (Phase A)
10. Architecture Repository
11. Draft architecture documents and draft requirements (Phase B)
12. Business and data related architecture roadmap (Phase B)





## Steps for Phase C, Application Architecture

1. Select reference models, viewpoints, and tools
2. Develop baseline application architecture description
3. Develop target application architecture description
4. Perform gap analysis
5. Define candidate roadmap components
6. Resolve impacts across the architecture landscape



## Steps for Phase C, Application Architecture

7. Conduct formal stakeholder review
8. Finalize application architecture
9. Create architecture definition document



# Outputs from Phase C, Application Architecture

1. Refined Phase A deliverables
2. Draft architecture definition document
  - a. Baseline application architecture, v1.0
  - b. Target application architecture, v1.0
3. Draft architecture requirements specification – gap analysis
4. Application architecture components of an architecture roadmap



# Artifacts Produced

Catalogs: Application portfolio catalog, interface catalog

Matrices: Application/organization matrix, role/application matrix, application function matrix, application interaction matrix

Diagrams: Application Communication diagram, Application and User Location diagram, Application Use-Case diagram, Enterprise Manageability diagram, Process/Application Realization diagram, Software Engineering diagram, Application Migration diagram, Software Distribution diagram

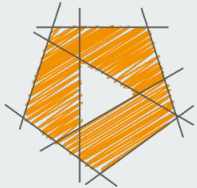


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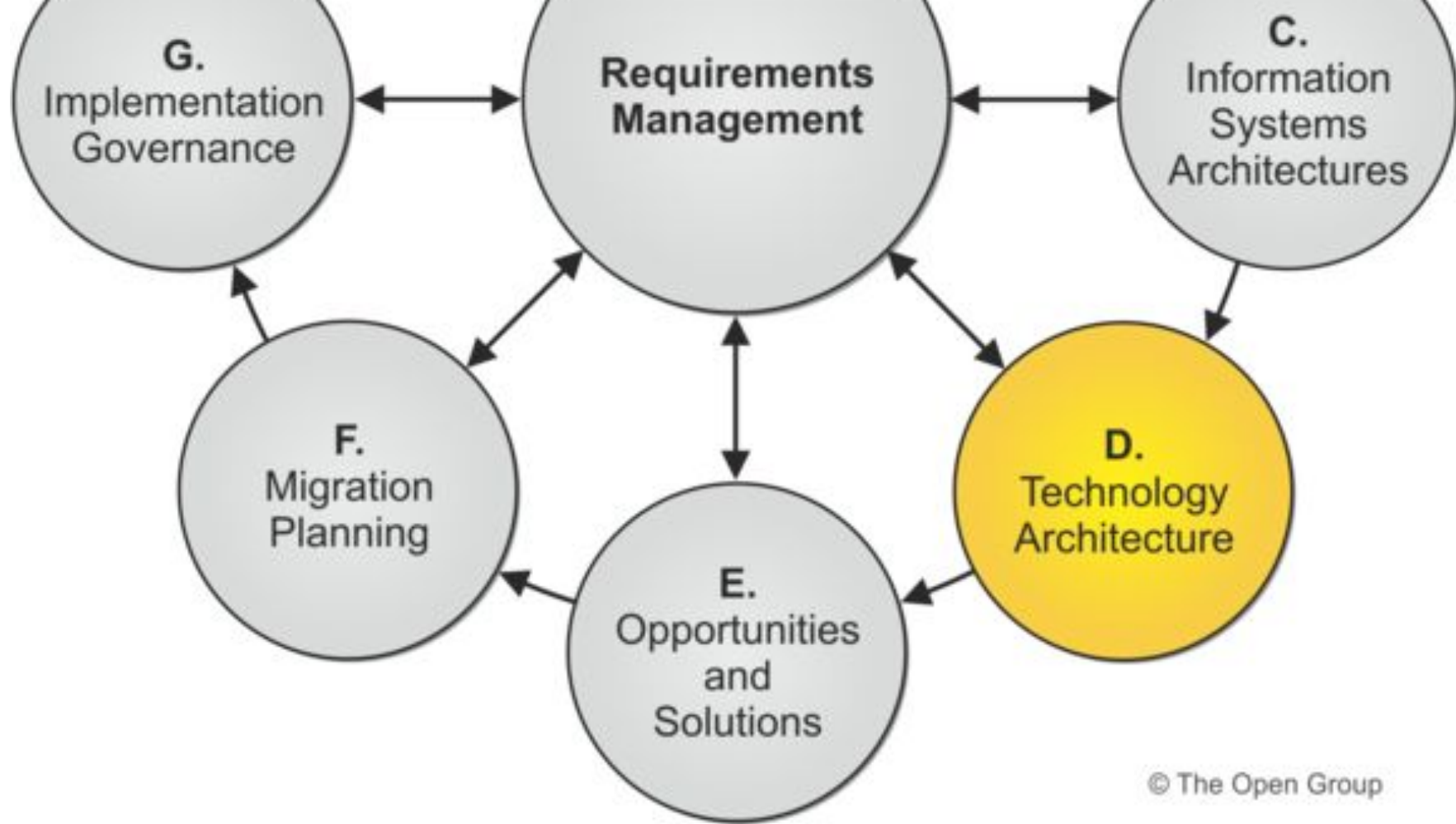
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# Phase D, Technology Architecture

---





**The purpose is to: develop the  
target technology architecture**

—

The purpose is to: identify  
candidate Architecture  
Roadmap items based on gaps

---



# Inputs to Phase D

1. External reference materials
2. Product information on candidate products
3. Request for Architecture Work (optional) (Prelim Phase)
4. Capability assessment (Phase A)
5. Communications plan (Phase A)
6. Organization Model for Enterprise Architecture (Prelim Phase)
7. Tailored Architecture Framework (Prelim Phase)



## Inputs to Phase D

8. Technology principles (TOGAF Specification Chapter 20)
9. Approved Statement of Architecture Work (Phase A)
10. Architecture vision (Phase A)
11. Architecture Repository
12. Draft architecture documents and draft requirements (Phase B and C)
13. Business, data and application components of an architecture roadmap (Phase B and C)



## Steps for Phase D

1. Select reference models, viewpoints, and tools
2. Develop baseline technology architecture description
3. Develop target technology architecture description
4. Perform gap analysis
5. Define candidate roadmap components
6. Resolve impacts across the architecture landscape



## Steps for Phase D

7. Conduct formal stakeholder review
8. Finalize technology architecture
9. Create architecture definition document



# Outputs from Phase D

1. Refined Phase A deliverables
2. Draft architecture definition document
  - a. Baseline technology architecture, v1.0
  - b. Target technology architecture, v1.0
3. Draft architecture requirements specification – gap analysis
4. Technology architecture components of an architecture roadmap



# Artifacts Produced

Catalogs: Technology Standards catalog, Technology Portfolio catalog

Matrices: Application/Technology matrix

Diagrams: Environments and Locations diagram, Platform Decomposition diagram, Processing diagram, Networked Computing/Hardware diagram, Communications Engineering diagram



**Look for opportunities using  
emerging technologies**

---

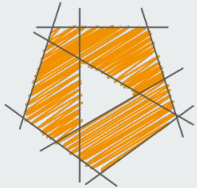


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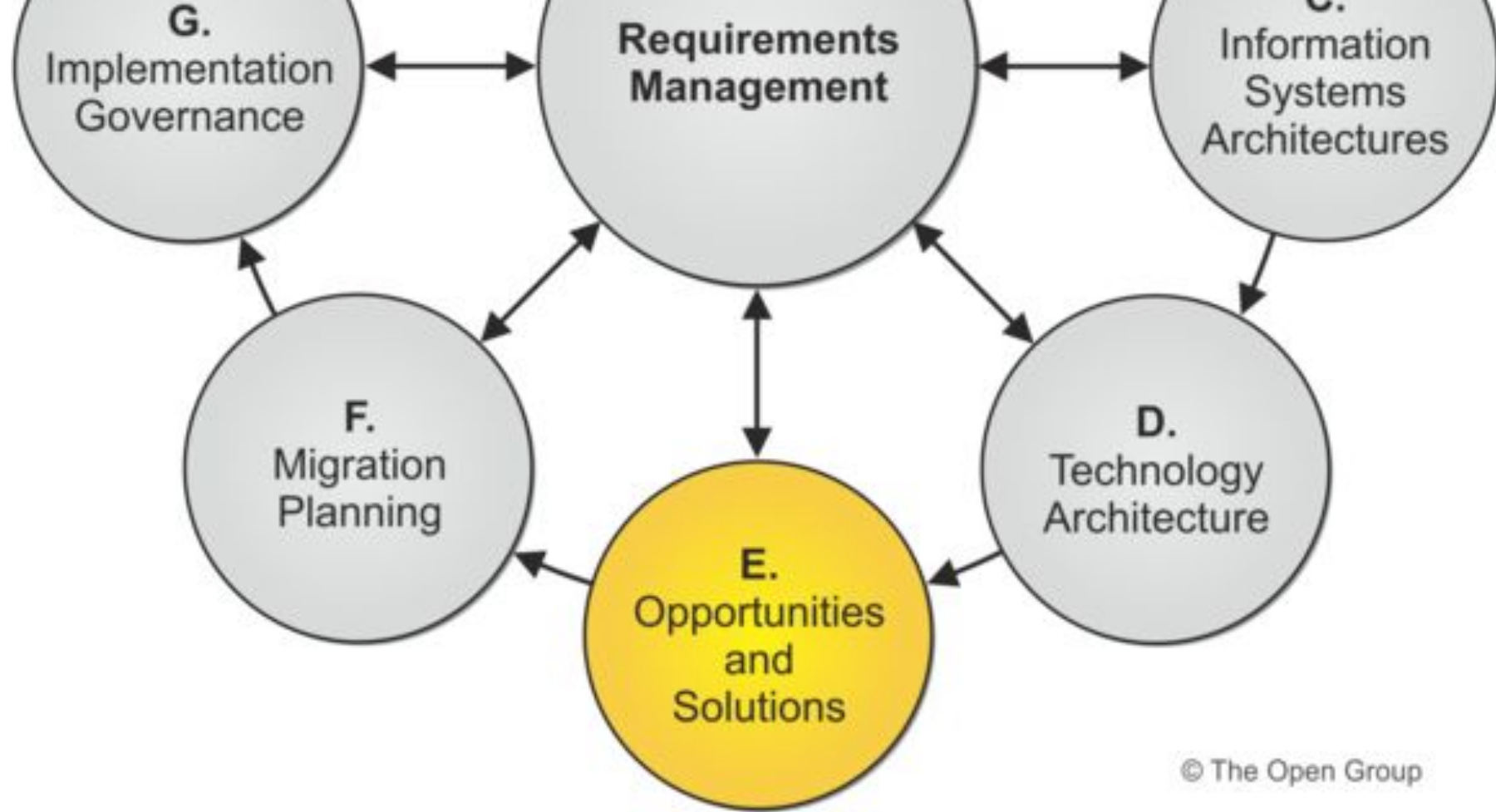
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# Phase E, Opportunities and Solutions

---



# Congratulations!

---

The purpose is to:  
generate the initial  
Architecture Roadmap

---

The purpose is to:  
identify if transition  
architectures are required

---



The purpose is to:  
define solution building blocks  
(SBBs) \*new

---



# Inputs to Phase E

1. External reference materials
2. Product information
3. Request for Architecture Work (optional) (Prelim Phase)
4. Capability assessment (Phase A)
5. Communications plan (Phase A)
6. Planning methodologies
7. Organization Model for Enterprise Architecture (Prelim Phase)



## Inputs to Phase E

8. Tailored Architecture Framework (Prelim Phase)
9. Approved Statement of Architecture Work (Phase A)
10. Architecture vision (Phase A)
11. Architecture Repository
12. Draft architecture documents and draft requirements (BDAT)
13. Change requests for existing business programs and projects
14. Candidate architecture roadmap components



## Steps for Phase E

1. Determine key corporate change attributes
2. Determine business constraints
3. Review and consolidate gap analysis from Phases B to D
4. Review consolidated requirements across business functions
5. Consolidate and reconcile interoperability requirements
6. Refine and validate dependencies



## Steps for Phase E

7. Confirm readiness and risk for business transformation
8. Formulate implementation and migration strategy
9. Identify and group major work packages
10. Identify transition architectures
11. Create the architecture roadmap & implementation and migration plan



## Outputs from Phase E

1. Refined Phase A deliverables
2. Draft architecture definition document – incl. baseline and target, v1.0
3. Draft architecture requirements specification – incl. gap analysis
4. Capability assessments
5. Architecture roadmap, version 0.1
6. Implementation and migration plan, version 0.1



# Artifacts Produced

Diagrams: Product context diagram, benefits diagram



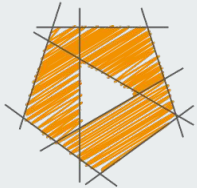
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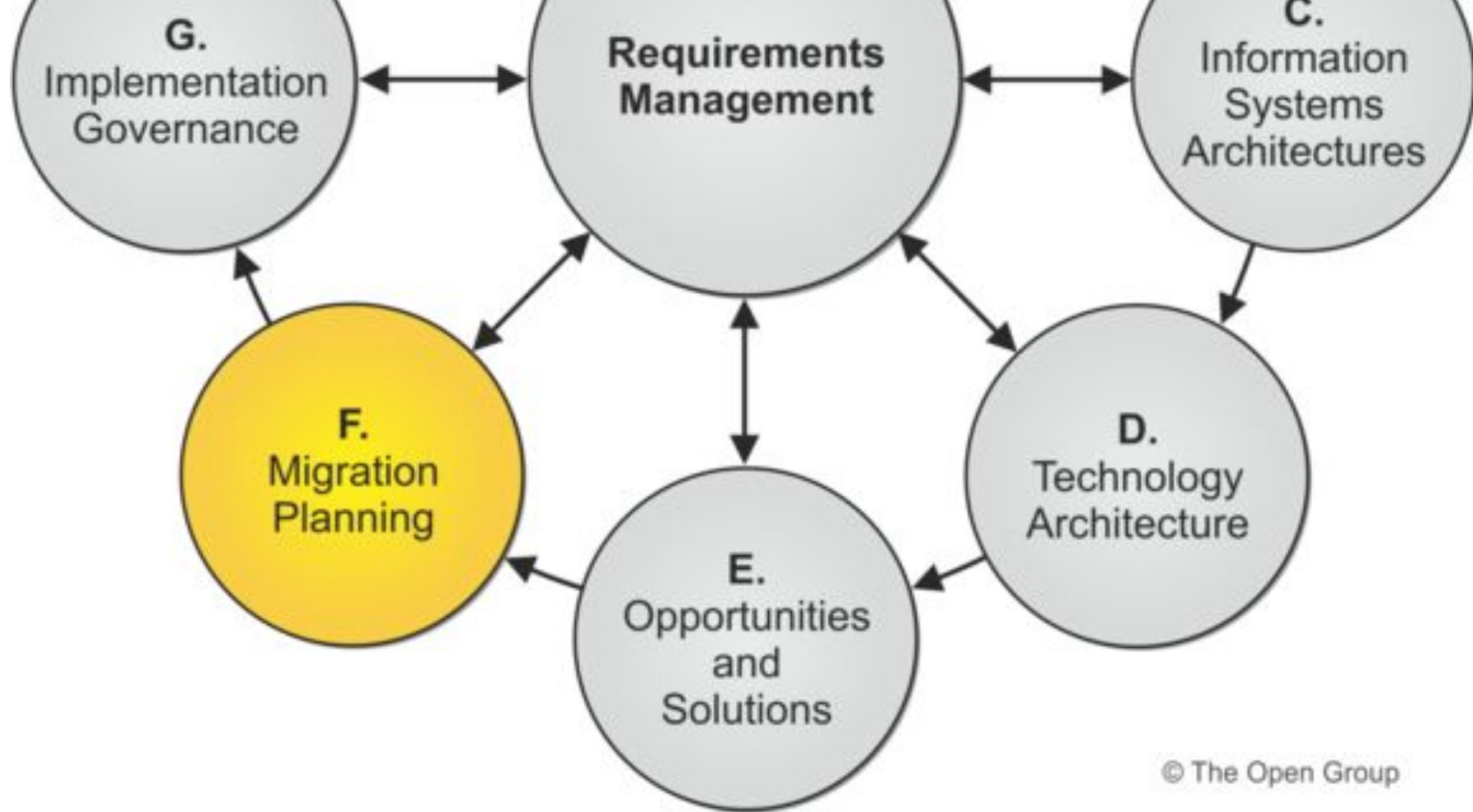
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# Phase F, Migration Planning

---



The purpose is to:  
finalize the architecture  
roadmap and migration plan

---

The purpose is to:  
ensure migration plan is  
aligned with enterprise  
approach to change

—

The purpose is to:  
ensure business value and cost  
of work packages is  
understood

—



# Inputs to Phase F

1. External reference materials
2. Request for Architecture Work (optional) (Prelim Phase)
3. Capability assessment (Phase A)
4. Communications plan (Phase A)
5. Organization Model for Enterprise Architecture (Prelim Phase)
6. Governance Models and Frameworks
7. Tailored Architecture Framework (Prelim Phase)



## Inputs to Phase F

8. Approved Statement of Architecture Work (Phase A)
9. Architecture vision (Phase A)
10. Architecture Repository
11. Draft architecture documents and draft requirements (BDAT)
12. Change requests for existing business programs and projects
13. Architecture roadmap, version 0.1 (Phase E)
14. Capability Assessment
15. Implementation and migration plan , version 0.1 (Phase E)





## Steps for Phase F

1. Confirm management framework interactions
2. Assign a business value to each work package
3. Estimate resource requirements, project timings, etc
4. Prioritize the migration projects
5. Confirm architecture roadmap and update architecture definition document
6. Generate implementation and migration plan
7. Complete the architecture development cycle, lessons learned



## Outputs from Phase F

1. Implementation and Migration Plan, version 1.0
2. Finalized architecture definition document
3. Finalized architecture requirements
4. Finalized architecture roadmap
5. Reusable Architecture Building Blocks (ABBs)
6. Requests for Architecture Work for next ADM cycle (if any)
7. Implementation of governance model
8. Change requests for architecture capability from lessons learned



# Artifacts Produced

None

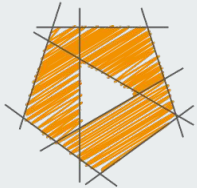


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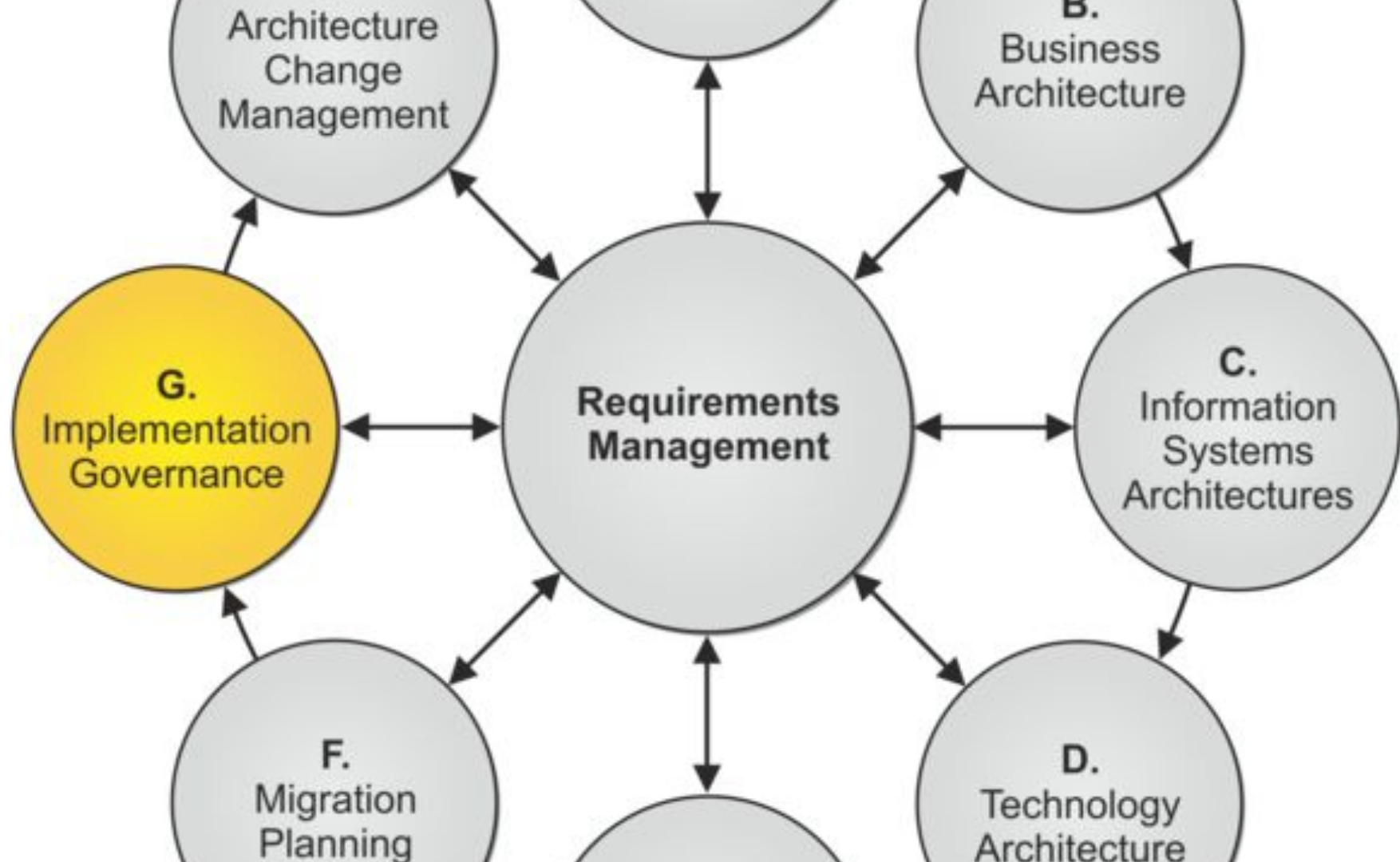
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# Phase G, Implementation Governance

---



The purpose is to:  
ensure conformance

---



The purpose is to:  
perform architecture  
governance

---



# Inputs to Phase G

1. External reference materials
2. Request for Architecture Work (optional) (Prelim Phase)
3. Capability assessment (Phase A)
4. Organization Model for Enterprise Architecture (Prelim Phase)
5. Tailored Architecture Framework (Prelim Phase)
6. Approved Statement of Architecture Work (Phase A)
7. Architecture vision (Phase A)



## Inputs to Phase G

8. Architecture Repository
9. Architecture definition documents and requirements (BDAT)
10. Architecture roadmap, version 1.0 (Phase F)
11. Implementation governance model
12. Architecture contract
13. Request for architecture work for next ADM cycle (Phase F)
14. Implementation and migration plan , version 1.0 (Phase F)



## Steps for Phase G

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



# Outputs from Phase G

1. Architecture contract

“...joint agreements between development partners and sponsors on the deliverables, quality, and fitness-for-purpose of an architecture”

Read Chapter 43 of the TOGAF 9.2 specification

2. Compliance assessments
3. Change requests
4. Architecture-compliant solutions deployed



# Artifacts Produced

None

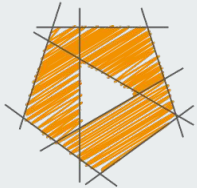


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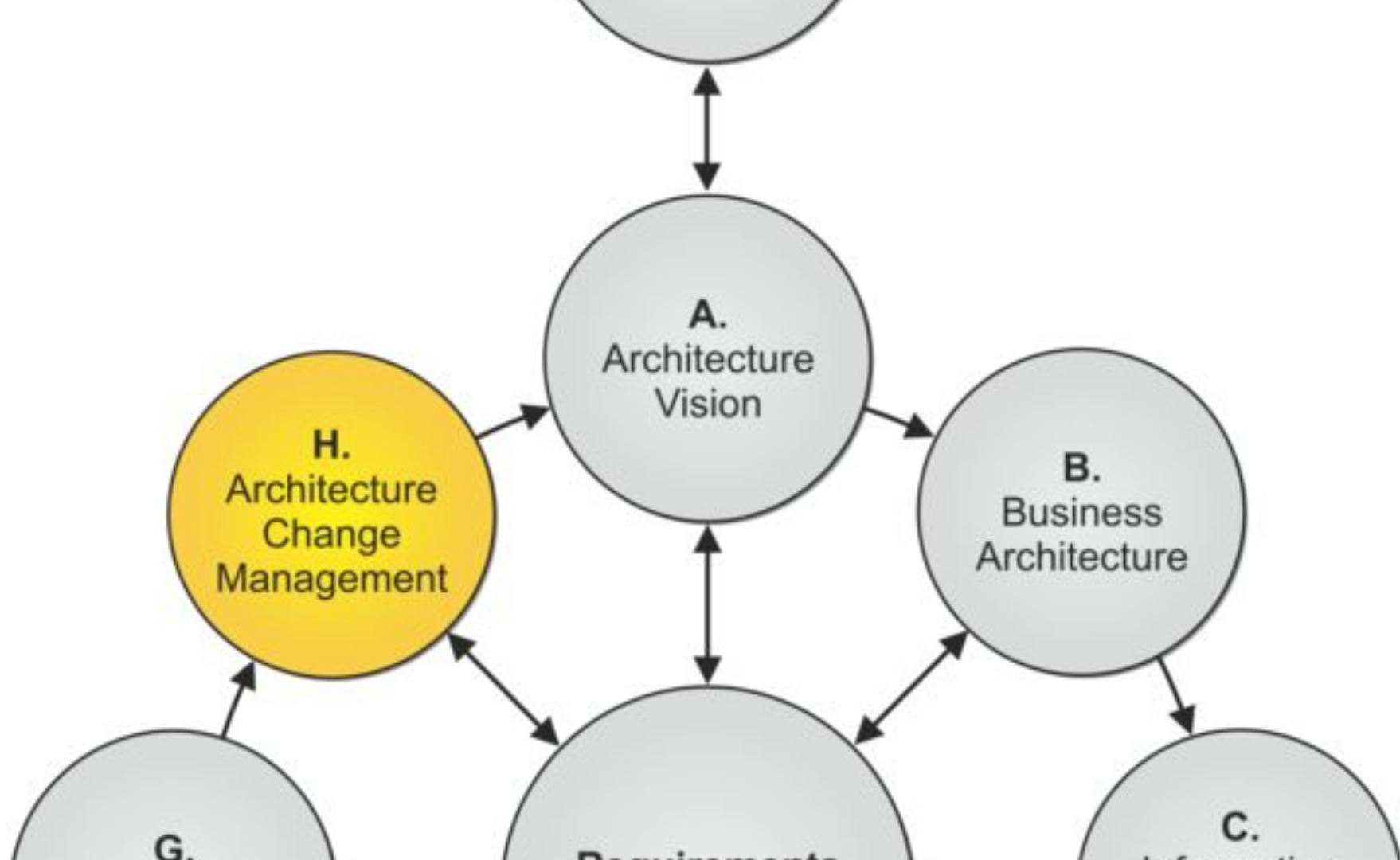


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# Phase H, Architecture Change Management

---



The purpose is to:  
maintain architecture lifecycle

---

The purpose is to:  
execute architecture  
governance

---

The purpose is to:  
maintain architecture  
capability

---



# Inputs to Phase H

1. External reference materials
2. Request for Architecture Work (optional) (Prelim Phase)
3. Organization Model for Enterprise Architecture (Prelim Phase)
4. Tailored Architecture Framework (Prelim Phase)
5. Statement of Architecture Work (Phase A)
6. Architecture vision (Phase A)
7. Architecture Repository



## Inputs to Phase H

8. Architecture definition documents and requirements (BDAT)
9. Architecture roadmap (Phase F)
10. Change requests – technology changes, business changes, lessons learned
11. Implementation governance model
12. Architecture contract (Phase G)
13. Compliance assessments (Phase G)
14. Implementation and migration plan , version 1.0 (Phase F)



## Steps for Phase H

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





## Outputs from Phase H

1. Architecture updates (maintenance)
2. Change to architecture framework and principles (maintenance)
3. New Request for Architecture Work (for major changes)
4. Statement of architecture work (updated if necessary)
5. Architecture contract (updated if necessary)
6. Compliance assessments (updated if necessary)



# Artifacts Produced

None

**Does a proposed change  
require a new ADM cycle?**

—

**Or support the change as part  
of change management?**

—

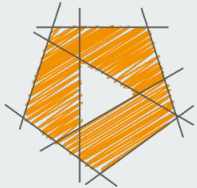


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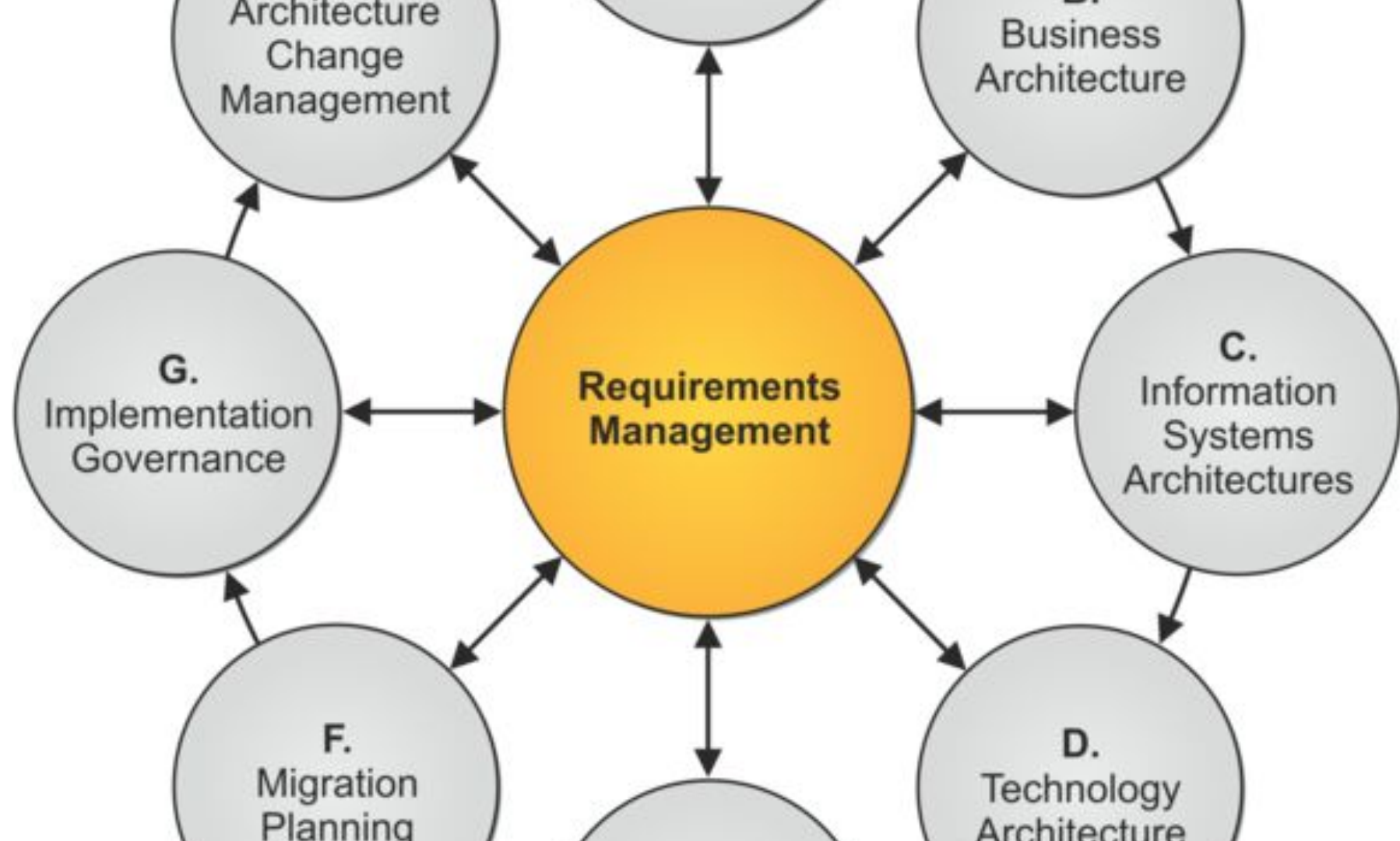
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# Requirements Management

---





**Technically, it's a phase. But it's  
constant.**

—

**Continuous process of  
handling change during any  
phase of the ADM process.**

---

**Being able to handle change at any time is crucial for the ADM to succeed.**

---

The purpose is:  
ensure the process is  
sustained through all phases

---

**The purpose is:  
manage change while the ADM  
cycle is in progress**

---

**The purpose is:  
provide the requirements to  
each ADM phase**

---

**The RM Phase manages the  
“flow” of requirements**

---

**Requirements Management is  
the process that manages the  
repository**

---



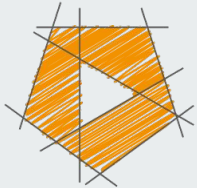


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# TOGAF Techniques

---



# ADM Guidelines and Techniques

- Using the TOGAF ADM in the context of a specific Architectural Style
- Architecture Principles
- Stakeholder Management
- Architecture Patterns
- Business Scenarios
- Gap Analysis
- Migration Planning Techniques
- Interoperability Requirements
- Business Transformation Readiness Assessment
- Risk Management
- Capability-Based Planning

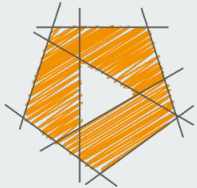


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# TOGAF ADM and Architectural Styles

---

# New in TOGAF 9.2

---



**As software development  
matures...**

---

**many styles of application  
architecture have been  
adopted**

—

**TOGAF does not need to  
change much based on your  
style**

—

**But you might want to change  
the content of your documents  
to fit**

—

# Architecture Content Metamodel

---

**Adopt different views, models,  
and tools**

---

**TOGAF has a Service Oriented  
Architecture work group**

—



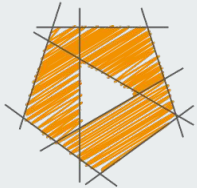
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# Architecture Principles

---

**An enduring set of general  
rules and guidelines about  
architecture**

---

**Not intended to change very  
often**

---

**Defined during the Preliminary  
Phase**

---

**Serves as a statement by  
which you can use to make  
decisions**

—

# Example - Data Architecture Principle

---

**“Data Trustee”**

---



**“Each data element has a trustee accountable for data quality.”**

—



# Five Elements of a Good Principle

- Understandability
- Robustness
- Completeness
- Consistency
- Stability

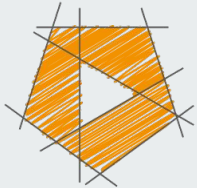


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# Part 1 Enterprise Architect

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# Stakeholder Management

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**“An individual, team,  
organization, or class thereof,  
having an interest in a system.”**

—

**As an architect, being able to  
win support for your plans is a  
skill.**

---

**Knowing who the most  
powerful stakeholders are...**

---



**Makes things easier for  
approval and budgets.**

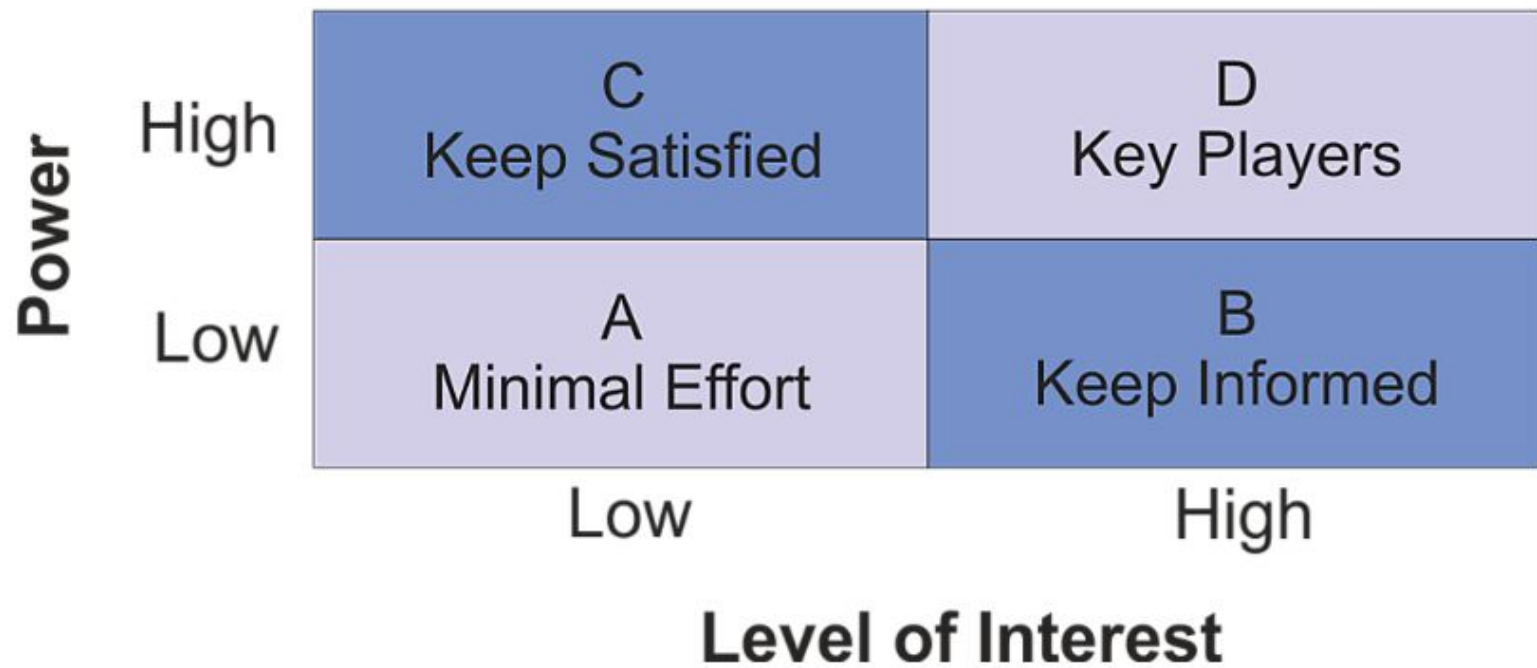
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**Can establish a  
communication plan to keep  
them informed**

—

**Identify problems and conflicts  
early in order to avoid them.**

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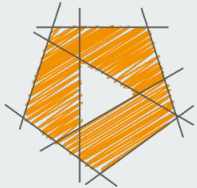


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# Architecture Patterns

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**“an idea that has been useful  
in one practical context and  
will probably be useful in  
others” - M. Fowler**

---



**TOGAF has the concept of  
building blocks: what you use**

---

**Architecture patterns is: when,  
why and how you use**

---

**Do not currently play a big role  
in the TOGAF Standard**

---

**Once you have developed a number of building blocks, you may want to establish patterns for them.**

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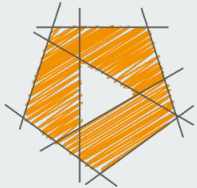


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# Business Scenarios

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**TOGAF 9.2 made this existing  
tool more prominent**

—



**What is a business scenario? 4 parts.**

---

**1. A business process,  
application, or set of  
applications**

—

## 2. The business and technology environment

---

### **3. The people and software systems (“actors”) involved**

---

## 4. The desired outcome

---

**Anyone should be able to  
understand a business  
problem and solution by  
reading the business scenario.**

—

**A neatly laid out business case.**

---



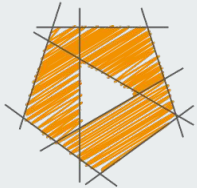
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# Gap Analysis

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# Key step in the BDAT Phases and Migration Planning (Phases B-E)

---

# Baseline architecture

---

# Target architecture

---

**Gaps are anything added,  
changed or intentionally  
omitted**

—

**Will also identify things  
accidentally omitted**

---

**It should be clear and easy to  
explain why things were added  
or removed**

—



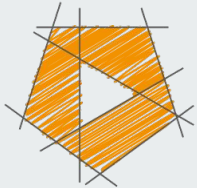


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# Migration Planning

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**TOGAF contains a number of  
tools for migration planning**

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# Migration Planning, Phase F

- Implementation Factor Assessment & Deduction Matrix
- Consolidated Gaps, Solutions, & Dependencies Matrix
- Architecture Definition Increments Table
- Transition Architecture State Evolution Table
- Business Value Assessment Technique

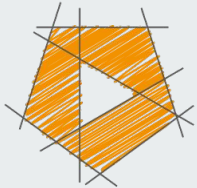


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# Interoperability

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**“the ability to share  
information and services”**

---

# **Business Interoperability: how business teams work together**

---

# Information Interoperability: how data is shared

---

**Technical Interoperability: how  
technical services connect to  
one another**

—

**Each of the architecture  
definition phases has elements  
of interoperability.**

—

**Architects think about how  
what they do interacts with the  
“outside world” during the  
process**

---

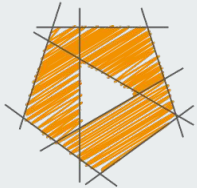


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# **Business Transformation Readiness Assessment (BTRA)**

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**“evaluating and quantifying an organization's readiness to undergo change”**

—

**No point creating architecture  
if it'll be ignored.**

---

**Understanding how to get your organization to change is a key to success.**

---



# Recommended Activities for BRTA

- Determine the readiness factors that will impact the organization
- Present the readiness factors using maturity models
- Assess the readiness factors, including determination of readiness factor ratings
- Assess the risks for each readiness factor and identify improvement actions to mitigate the risk
- Work these actions into Phase E and F Implementation and Migration Plan



# Example Factors

- Vision
- Desire, Willingness, Resolve
- Need
- Business Case
- Funding
- Leadership, Sponsor, Champion
- Governance
- Accountability
- IT Capacity to Execute
- Enterprise Capacity to Execute



## Example Factor: Need

How strong is the business need for enterprise architecture?

Does every part of the business recognize this as being required?

How committed is the senior leadership to this?



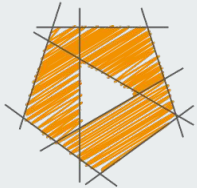
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# Risk Management

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**What are the risks of migrating  
to the target architecture?**

—

**Identify them, and track them**

---

**TOGAF has the concept of  
Initial Level of Risk and  
Residual Level of Risk**

—

**Initial Level of Risk is the risk  
that exists if you do nothing to  
mitigate them**

—

**Residual Level of Risk is the risk that remains after you have mitigated them**

—

# Example: Client acceptance risk

---



# How do you measure it?

---

**How do you mitigate it?**

—

**And what would the cost to the business be if it comes true?**

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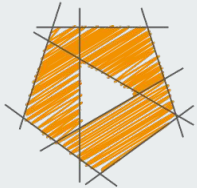


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# Capability-Based Planning

---

**“a business planning  
technique that focuses on  
business outcomes”**

---

**Capabilities are  
business-driven and ideally  
business-led.**

---



**Designed to combat the fact  
that organizations are split  
along functions**

—

**Many business functions work  
together to deliver one  
capability**

—

**Example: Ability to create  
flawless products.**

---

**Requires multiple business  
functions to work together**

—

**Product design, software  
development, manufacturing,  
retail/sales**

—

**The company plans for the  
capability of “flawless  
products”, not just “best sales  
team”**

—

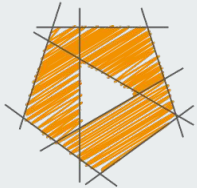


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# Architecture Governance

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**A system of controls over  
architecture**

---

**A system to ensure compliance  
with architecture**

---

**Effective management of those  
systems**

---

**Accountability to the business  
for that**

---

**Governance is layered within  
most organizations**

---

# Corporate governance

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# Technology governance

---



# IT governance

---

# Architecture governance

---



# Principles of Good Governance

- Discipline
- Transparency
- Independence
- Accountability
- Responsibility
- Fairness

# Architecture Board

---

**Representative of all the key  
stakeholders in the  
architecture**

—

# Architecture Contracts

---

**“joint agreements between  
development partners and  
sponsors on the deliverables,  
quality, and  
fitness-for-purpose of an  
architecture”**

---

# Architecture Compliance

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- Irrelevant
- Consistent
- Compliant
- Conformant
- Fully conformant
- Non-conformant

---

# Compliance Reviews

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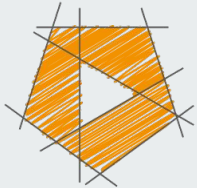


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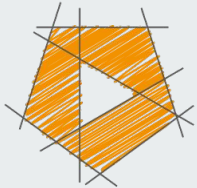


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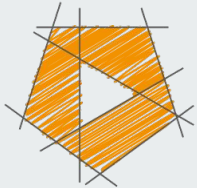


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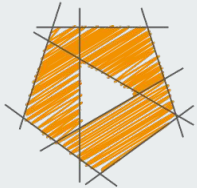


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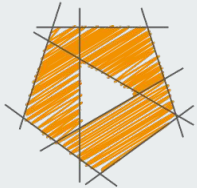


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