Module 1
Management
Overview

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Management Overview

TOGAF is a registered trademark of The Open Group in the United States and other countries

Module Objectives

» To provide a management overview of the TOGAF Standard and its ecosystem
  – The Open Group
  – The Architecture Forum
  – Why Enterprise Architecture?
  – Why a framework?
  – The TOGAF Standard, Version 9.2
  – The TOGAF Library
  – TOGAF 9 Certification
  – Summary

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Agenda

» The Open Group
» The Architecture Forum
» Why Enterprise Architecture?
» Why a Framework?
» The TOGAF Standard, Version 9.2
» The TOGAF Library
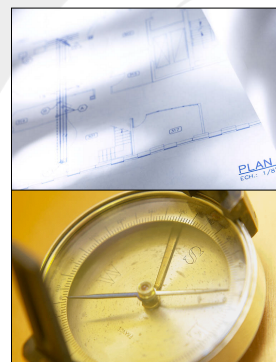» TOGAF 9 Certification
» Summary

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About The Open Group

» The Open Group is a global consortium that enables the achievement of business objectives through technology standards

» Its diverse membership of more than 500 organizations includes customers, systems and solutions suppliers, tool vendors, integrators, academics, and consultants across multiple industries.

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The Open Group Vision

Boundaryless Information Flow™
- ❑ achieved through global interoperability
- ❑ in a secure, reliable and timely manner

"Boundaryless does not mean there are no boundaries – it means that boundaries are permeable to enable business."

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The Open Group Mission

The mission of The Open Group is to drive the creation of Boundaryless Information Flow™ achieved by:

» Working with customers to capture, understand and address current and emerging requirements, establish policies, and share best practices;

» Working with suppliers, consortia and standards bodies to develop consensus and facilitate interoperability, to evolve and integrate specifications and open source technologies;

»Developing and operating the industry's premier certification service and encouraging the procurement of certified products.
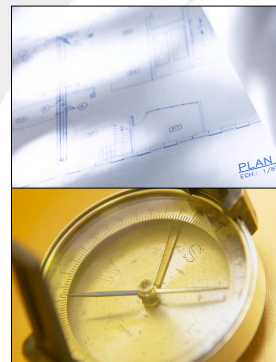
OPEN

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» Why a Framework?
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Architecture Forum – Mission

» The mission of The Open Group Architecture Forum is to advance The Open Group vision of *Boundaryless Information Flow*, for and between enterprises,

» Through a set of programs that focus on all architectural aspects, including:
  – Providing broad and deep leadership to the EA community
  – Validating, publishing, fostering, and maintaining best practices for EA
  – Developing, organizing, researching, and publishing thought leaders in EA
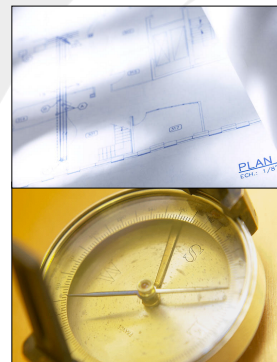 – Initiating and managing programs and projects to support these activities

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What is an Enterprise?

- » A collection of organizations that share a common set of goals
  - – Government agency
  - – Part of a corporation
  - – Corporation
- » Large corporations may comprise multiple enterprises
- » May be an "extended enterprise" including partners, suppliers and customers

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What is an Architecture?

- » An Architecture is the fundamental concepts or properties of a system in its environment embodied in:
  - – its elements,
  - – their relationships to each other and the environment,
  - – and the principles governing its design and evolution.

Adapted from ISO/IEC/IEEE 42010:2011

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What is Enterprise Architecture?

[1] MIT Center for Information Systems Research

[2] SearchCIO.com

Enterprise Architecture is:

» The organizing logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the firm's operating model.[1]

» A conceptual blueprint that defines the structure and operation of an organization. The intent of an Enterprise Architecture is to determine how an organization can most effectively achieve its current and future objectives. [2]

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Architecture Types

Business Architecture

Application Architecture

Data Architecture

Technology Architecture
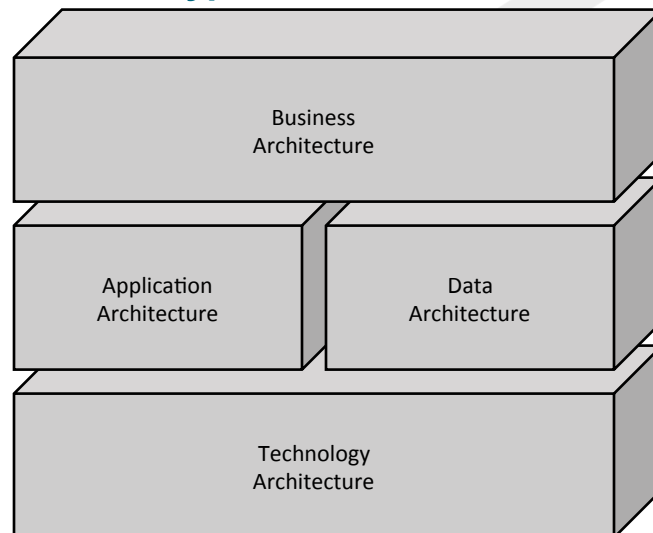
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Why Enterprise Architecture?

» Effective management and exploitation of information and Digital Transformation are key to business success
» Good information management = competitive advantage
» Current IT systems do not really meet the needs of business
  – Fragmented, duplicated
  – Poorly understood
  – Not responsive to change
» Investment in Information Technology
  – Focussed on system maintenance
  – Tactical developments rather than a strategic plan

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Why Enterprise Architecture?

» Two key reasons why you need an Enterprise Architecture:
  – A means to achieve competitive advantage
  – Enables managed innovation within the enterprise

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Pressure to develop Enterprise Architecture

» Laws and regulations
  – Clinger-Cohen Act (US Information Technology Management Reform Act 1996)
  – EU Directives on the Award of Public Contracts
  – Sarbanes-Oxley
» More extended enterprises
» More co-operative IT operations
» Greater publicity to failures
» Increase in litigation
» Audit requirements

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Business Benefits of Enterprise Architecture

» It helps an organization achieve its business strategy
» Faster time to market for new innovations and capabilities
» More consistent business processes and information across business units
» More reliability and security, less risk

Source: "Why Enterprise Architecture Matters?", The Open Group White Paper, W076

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Business Benefits of Enterprise Architecture

» A more efficient business operation
» A more efficient IT operation
» Better return on existing investment,
» Reduced risk for future investment
» Faster, simpler, and cheaper procurement

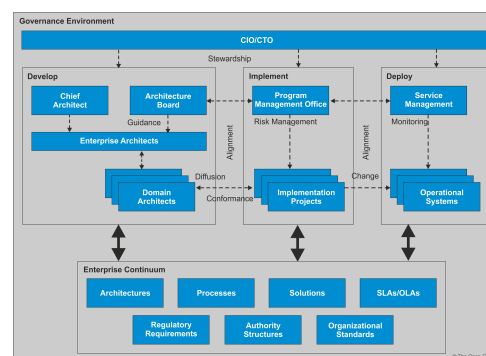See also: "Why Enterprise Architecture Matters?", The Open Group White Paper, W076

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The Importance of Governance

» An Enterprise Architecture is only as good as the decision making framework that is established around it → "governance" framework
» The Governance Framework depends on
  – Clear authority structure
  – The right participants

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What do we mean by Governance?

» The way in which decisions are made

» Who is responsible?
» Who is involved?
» Who is accountable?

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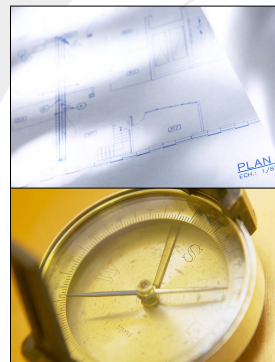# Agenda

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What is an Architecture Framework?

» TOGAF Standard Definition: Architecture Framework
  – *A conceptual structure used to develop, implement, govern, and sustain an architecture*
» It should describe a method for designing target state of the enterprise in terms of a set of building blocks, and for showing how the building blocks fit together
» It should contain a set of tools and provide a common vocabulary
» It should also include a list of recommended standards and compliant products that can be used to implement the building blocks
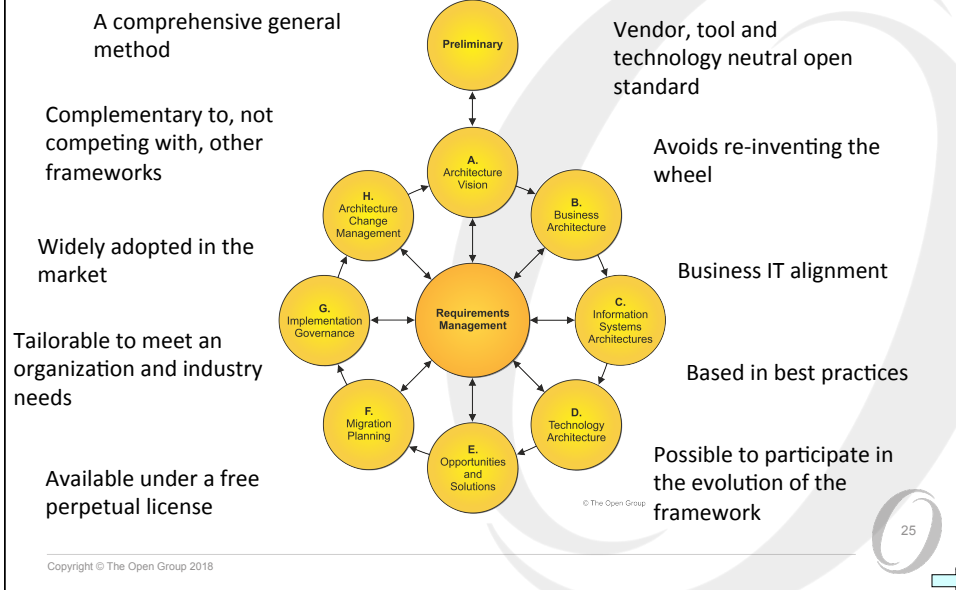
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The Value of a Framework

» Provides a practical starting point for an Architecture Project
  – Avoids the initial panic when the scale of the task becomes apparent
  – Systematic – "Codified common sense"
  – Captures what others have found to work in real life
  – Contains a Baseline set of resources for reuse

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Architecture Development Method

A comprehensive general method

Complementary to, not competing with, other frameworks

Widely adopted in the market

Tailorable to meet an organization and industry needs

Available under a free perpetual license

Vendor, tool and technology neutral open standard

Avoids re-inventing the wheel

Business IT alignment

Based in best practices

Possible to participate in the evolution of the framework

Preliminary

A. Architecture Vision

H. Architecture Change Management

B. Business Architecture

G. Implementation Governance

Requirements Management

C. Information Systems Architectures

F. Migration Planning

E. Opportunities and Solutions

D. Technology Architecture

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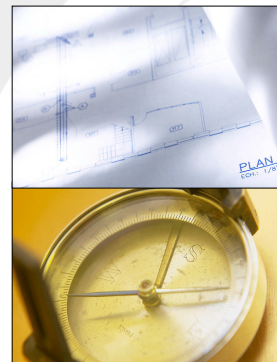
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TOGAF Origins

» A <u>customer</u> initiative

» A <u>framework</u>, not an architecture

  – A generic framework for developing architectures to meet different business needs

  – <u>Not</u> a "one-size-fits-all" architecture

» Originally based on TAFIM (U.S. DoD)

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Member (End User) Driven

• Customer members demand architecture standards …

  • Customer members select TAFIM as preferred starting point…

  • DoD Information Systems Agency (DISA) donate TAFIM as base

  • TOGAF 1st Edition

    • TOGAF 7 Technical Edition

      TOGAF 8.1.1

        • TOGAF 9 Enterprise Edition

          • TOGAF 9.1

'93 '94 '96 '01 '02 '03 '06 '09 '11 '13 '15 '17 '18

• The Interoperable Enterprise Business Scenario first published

Certifications >25k

Certifications > 50k

TOGAF Standard, Version 9.2

TOGAF 8 Enterprise Edition First TOGAF Certification Program Launched

TOGAF Library Certifications >70k

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TOGAF Scope

» The TOGAF standard emphasizes business goals as architecture drivers, and provides a set of best practices, including:
  – **TOGAF Architecture Development Method (ADM)**
  – **ADM Guidelines & Techniques**
  – **TOGAF Architecture Content Framework**
  – **Enterprise Continuum**
  – **TOGAF Capability Framework**

» In addition, the TOGAF Library provides a portfolio of guidance material to support the standard

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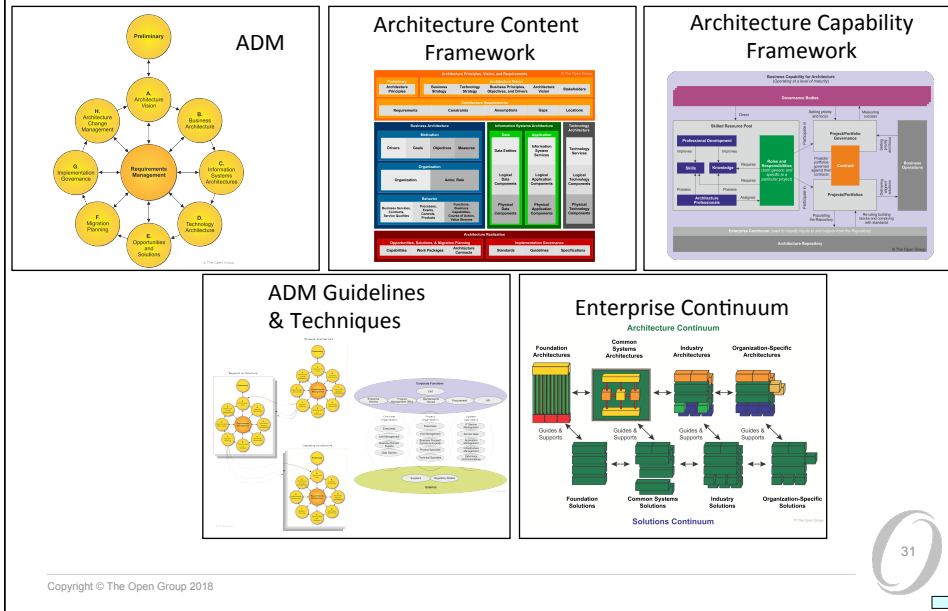
TOGAF Long-term Goals

» An industry standard, generic Enterprise Architecture method….

» ….usable on its own or in conjunction with frameworks having products relevant/specific to particular sectors.
  – Several frameworks have mind share:
    • Zachman, DODAF, MODAF, FEAF, TEAF, …
  – Almost all focus on products, not method
  – The TOGAF method <u>and</u>…. (not the TOGAF method <u>or</u>….)

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Structure of the Standard

ADM

Architecture Content Framework

Architecture Capability Framework

ADM Guidelines & Techniques

Enterprise Continuum

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The TOGAF Standard, Version 9.2
Table of Contents

Part I - Introduction
Preface, Executive Overview, Core Concepts, Definitions
Part II – Architecture Development Method
Introduction to ADM
ADM Phase Narratives
Part III – ADM Guidelines and Techniques
Guidelines for Adapting the ADM Process
Techniques for Architecture Development
Part IV – Architecture Content Framework
Content Metamodel
Architectural Artifacts
Architecture Deliverables
Building Blocks
Part V – Enterprise Continuum and Tools
Enterprise Continuum
Architecture Partitioning
Architecture Repository
Tools for Architecture Development
Part VI – Architecture Capability Framework
Architecture Board
Architecture Compliance
Architecture Contracts
Architecture Governance
Architecture Maturity Models
Architecture Skills Framework

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TOGAF Components

» Architecture Development Method (ADM)
– An iterative sequence of steps to develop an enterprise-wide architecture

» ADM Guidelines and Techniques
– Guidelines and techniques to support the application of the ADM

» Architecture Content Framework
– A detailed model of architectural work products, including deliverables, artifacts within deliverables, and the Architecture Building Blocks (ABBs) that deliverables represent.
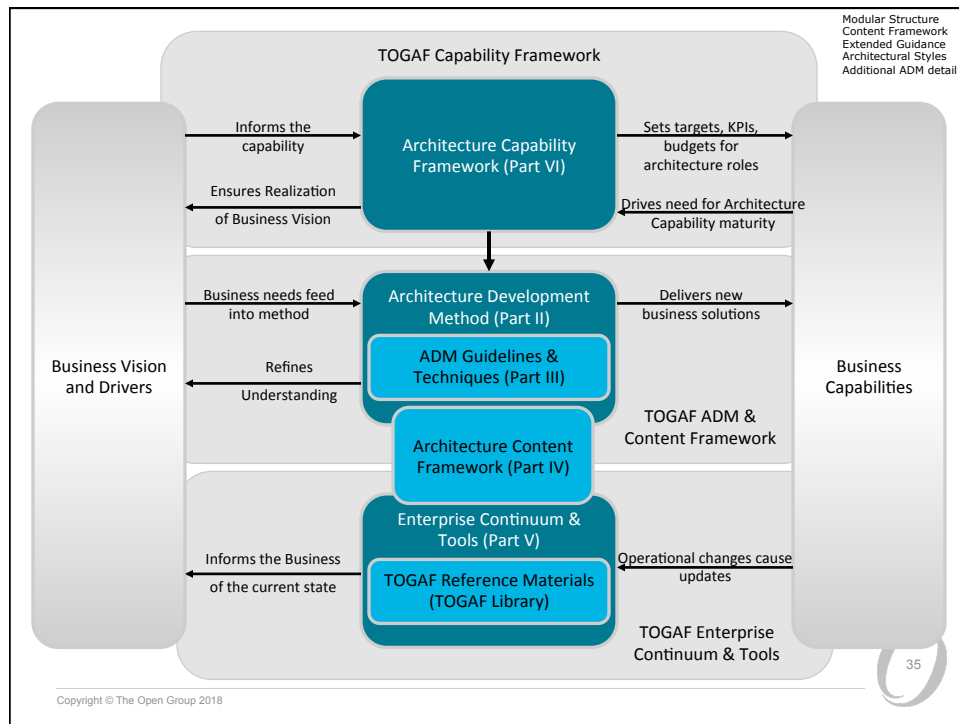
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TOGAF Components (Cont'd)

» The Enterprise Continuum
– A model for structuring a virtual repository and methods for classifying architecture and solution artifacts

» The Architecture Capability Framework
– A structured definition of the organizations, skills, roles and responsibilities to establish and operate an Enterprise Architecture.

» The TOGAF Library
– A supporting element separate to the Standard
– A reference library containing guidelines, templates, patterns, and other forms of reference material to accelerate the creation of new Enterprise Architectures.
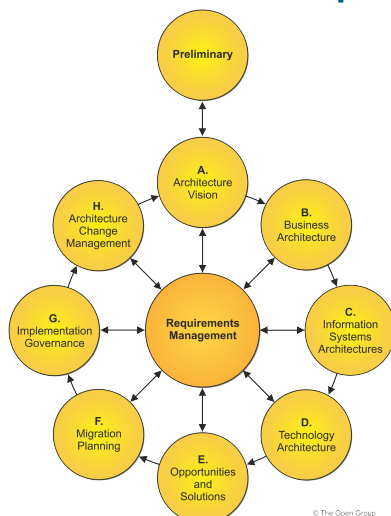
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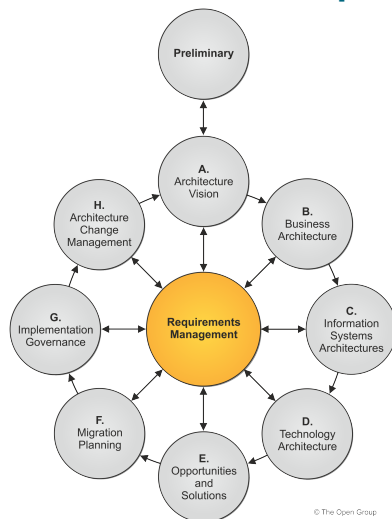*Copyright © 2009-2018 The Open Group, All Rights Reserved*

ADM – Basic Principles

An iterative method, over the whole process, between phases and within phases

Each iteration = new decisions:
>   Enterprise coverage
>   Level of detail
>   Time horizon
>   Architecture asset re-use:
>>   previous ADM iterations
>>   other frameworks, system models,
>>   industry models,…

Decisions based on:
>   Competence / resource availability
>   Value accruing to the enterprise.

ADM – Basic Principles

Every phase is validated against and validates the current requirements of the business

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Preliminary Phase
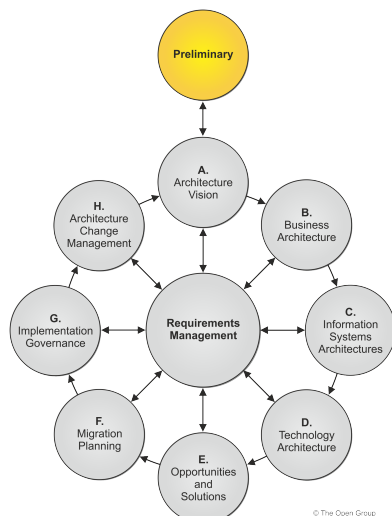
» This phase includes the preparation and initiation activities to create an Architecture Capability
  – Understand business environment
  – High level management commitment
  – Agreement on scope
  – Establish principles
  – Establish governance structure
  – Customization of the TOGAF framework

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Phase A: Architecture Vision
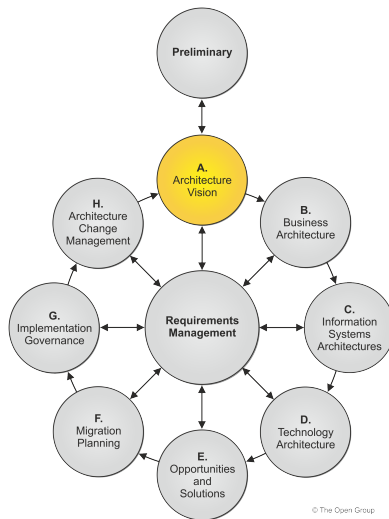
» Initiates one iteration of the architecture process
  – Sets scope, constraints, expectations
  – Required at the start of every architecture cycle
» Creates the Architecture Vision
» Validates business context
» Creates the Statement of Architecture work

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Phase B: Business Architecture
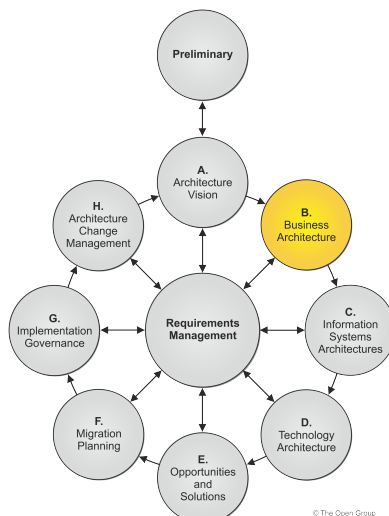
» The fundamental organization of a business, embodied in
  – its business processes and people,
  – their relationships
    • to each other and the environment,
  – and the principles governing its design and evolution
» Shows how the organization meets its business goals

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Business Architecture - Contents
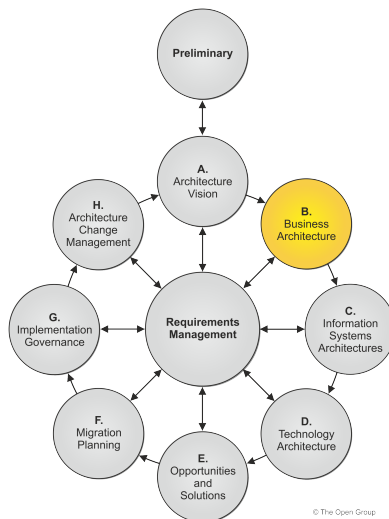
» Organization structure
» Business goals and objectives
» Business functions
» Business services
» Business processes
» Business roles
» Business data model
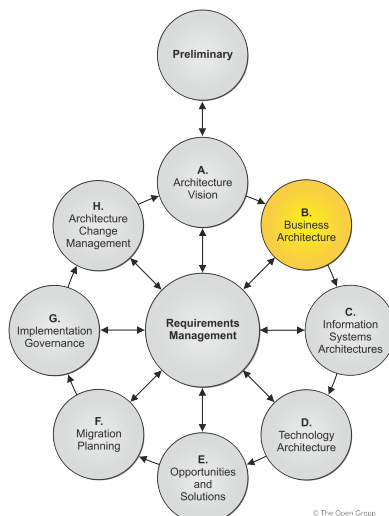» Correlation of organization and functions.

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Business Architecture - Steps

1. Select reference models, viewpoints and tools
2. Define Baseline Architecture Description
3. Define Target Architecture Description
4. Perform gap analysis
5. Define candidate roadmap components
6. Conduct formal stakeholder review
7. Finalize the Architecture
8. Create Architecture Definition Document

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Phase C: Information Systems Architectures
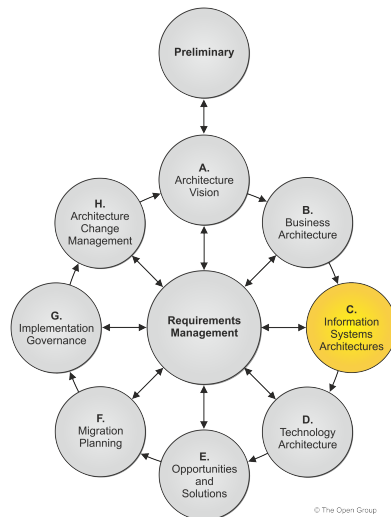
» Documenting the Information Systems Architecture for a project including development of Data and Application Architectures addressing:
  • The major types of information and applications that process them
  • relationships to each other and the environment, and the principles governing its design and evolution
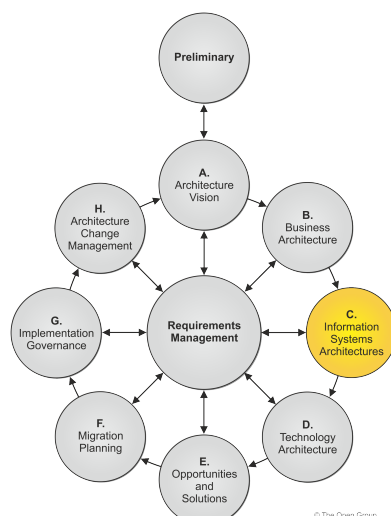
Continued

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Data or Applications first ?


» It is usually necessary to address both
  • Not always the case, depending on project scope and constraints
» May be developed in either order, or in parallel
  • Theory suggests Data Architecture comes first
  • Practical considerations may mean that starting with Application Architecture may be more efficient
» There will need to be some iteration to ensure consistency

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Phase D: Technology Architecture
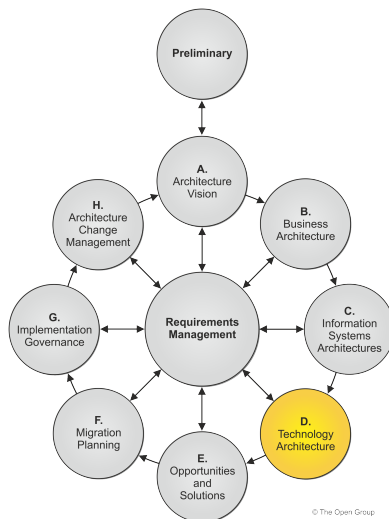
» The fundamental organization of an IT system, embodied in
  • its hardware, software and communications technology
  • their relationships to each other and the environment,
  • and the principles governing its design and evolution

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Phase E: Opportunities and Solutions
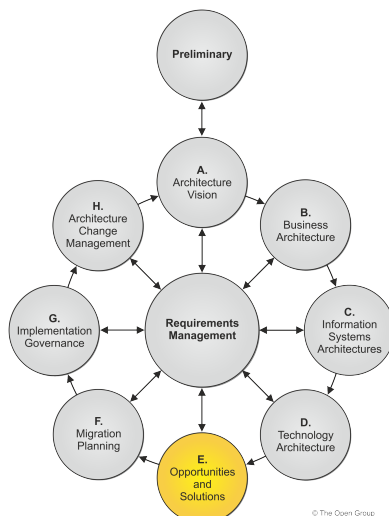
» Perform initial implementation planning
» Identify the major implementation projects
» Determine if an incremental approach is required, if so define Transition Architectures
» Decide on approach
  • Make v Buy v Re-Use
  • Outsource
  • COTS
  • Open Source
» Assess priorities
» Identify dependencies

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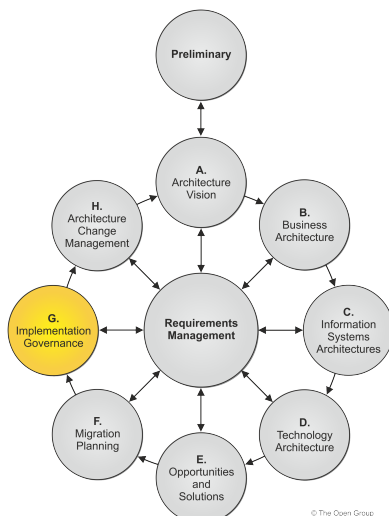Copyright © The Open Group 2018

Phase F: Migration Planning
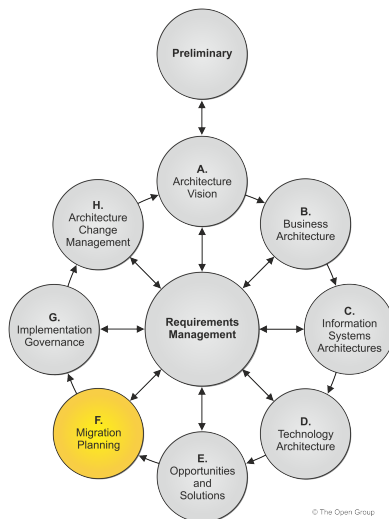
» For work packages and projects identified in Phase E perform
  • Cost/benefit analysis
  • Risk assessment
» Finalize a detailed Implementation and Migration Plan

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Phase G: Implementation Governance

» Provide architectural oversight for the implementation.
» Defines architecture constraints on implementation projects
» Govern and manage an Architecture contract
» Monitors implementation work for conformance
» Produce a *Business Value Realization.*

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Phase H: Architecture Change Management
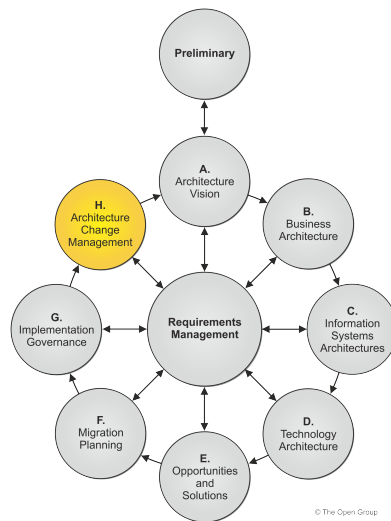
» Provide continual monitoring and a change management process
» Ensures that changes to the architecture are managed in a cohesive and architected way
» Establishes and supports the Enterprise Architecture to provide flexibility to evolve rapidly in response to changes in the technology or business environment
» Monitors the business and capacity management.

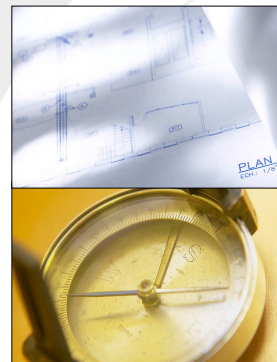Copyright © The Open Group 2018

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The TOGAF® Library

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TOGAF Library – Overview

» A portfolio of guidance material to support practical application of the TOGAF standard

» It contains guidelines, templates, patterns and other forms of reference material

» Over 120 documents (as of April 2018)

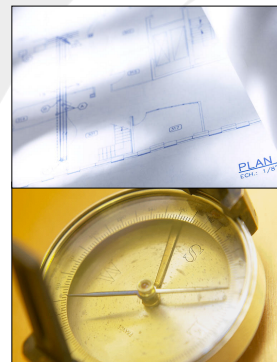Copyright © The Open Group 2018

TOGAF Library – Structure

» Section 1: Foundation Documents
  – Broadly applicable information relating to the subject of the TOGAF framework or Enterprise Architecture
» Section 2: Generic Guidance and Techniques
  – Information describing architecture styles and how the TOGAF framework and Enterprise Architecture can be adapted to exploit the characteristics of a more specific context
» Section 3: Industry-Specific Guidance and Techniques
  – Information describing how the TOGAF framework and Enterprise Architecture can be applied to meet the specific needs of a vertical industry segment
» Section 4: Organization-Specific Guidance and Techniques
  – Information describing how the TOGAF framework and Enterprise Architecture have been applied to meet the needs of specific enterprises

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TOGAF Certification

Certification Level	Purpose
TOGAF 9 Foundation	To provide validation that the candidate has gained knowledge of the TOGAF terminology, structure, and basic concepts, and understands the core principles of Enterprise Architecture and the TOGAF standard
TOGAF 9 Certified	To provide validation that in addition to knowledge and comprehension, the candidate is able to analyze and apply knowledge of the TOGAF standard

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TOGAF Foundation
Target Audience

» Individuals who require a basic understanding of the TOGAF 9 standard

» Professionals who are working in roles associated with an architecture project such as those responsible for planning, execution, development, delivery and operation

» Architects who are looking for a first introduction to the TOGAF 9 standard

» Architects who want to achieve Level 2 certification in a stepwise approach.

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**TOGAF Certified
Target Audience**

- » Individuals who require a deeper understanding of the TOGAF 9 standard;
- » Professionals who are working in an organization where TOGAF 9 has been adopted and who need to participate in architecture projects and initiatives;
- » Architects who will be responsible for developing architecture artifacts;
- » Architects who wish to introduce the TOGAF 9 standard into an architecture practice;
- » Architects who want to achieve a recognized qualification to demonstrate their detailed knowledge of the TOGAF 9 standard.
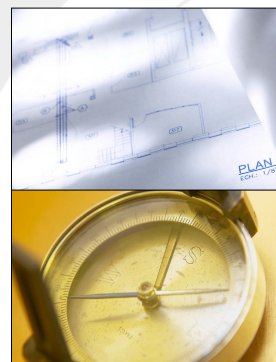
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Summary

The TOGAF® Standard is…

» An effective, industry standard framework and <u>method</u> for Enterprise Architecture.

» Complementary to, not competing with, other enterprise frameworks

» A repository of best practice

– It "demystifies" architecture development

» Vendor, tool, and technology neutral

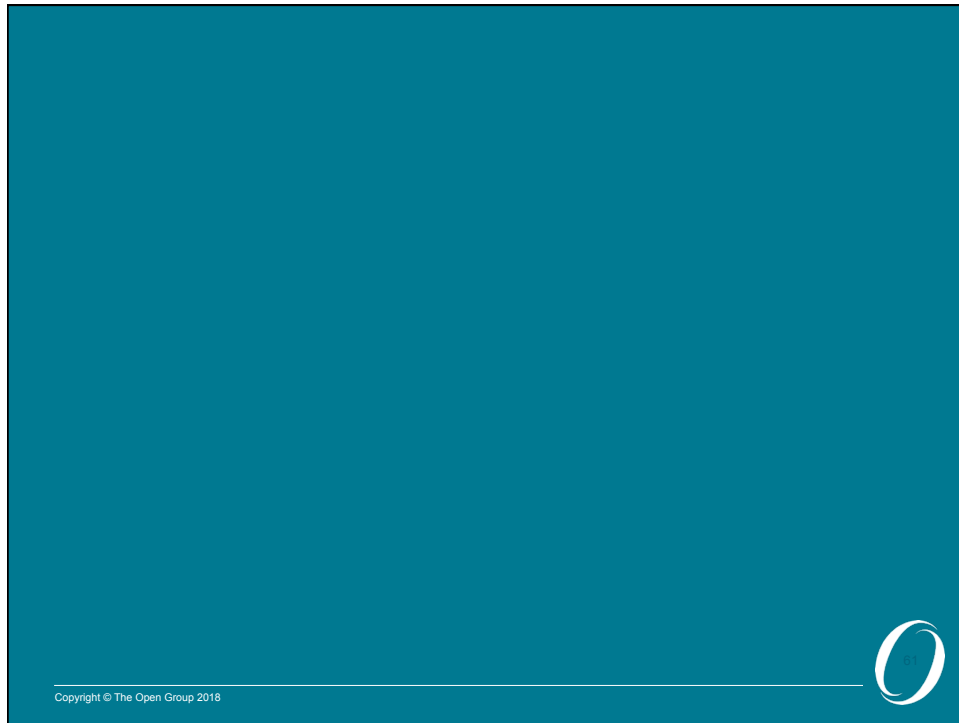» A framework and method for achieving the "Boundaryless Information Flow" vision

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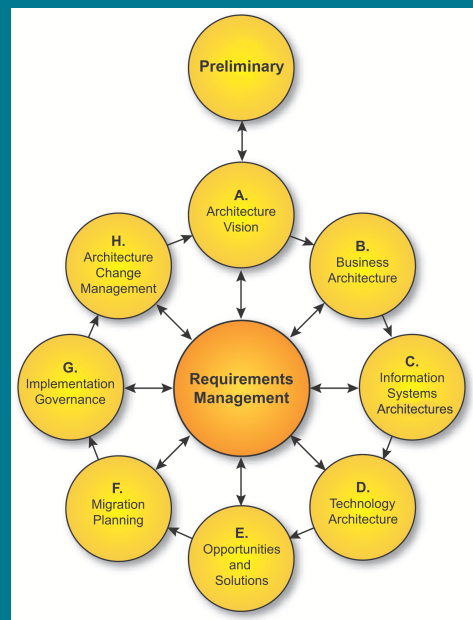
Management
Overview

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