TOGAF
Version 8 Enterprise Edition
Module 1
Management
Overview
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Making standards work™
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Prelim: Framework and Principles
A. Architecture Vision
B. Business Architecture
C. Information Systems Architectures
D. Technology Architecture
E. Opportunities and Solutions
F. Migration Planning
G. Implementation Governance
H. Architecture Change Management
Requirements Management
Management Overview
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Module Objectives

- To provide a management overview of TOGAF 8.1.1
  - The Open Group
  - The Architecture Forum
  - Why enterprise architecture
  - Why a framework
  - TOGAF 8.1
  - TOGAF Certification
  - Summary

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Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
- TOGAF 8.1
- TOGAF Certification
- Summary

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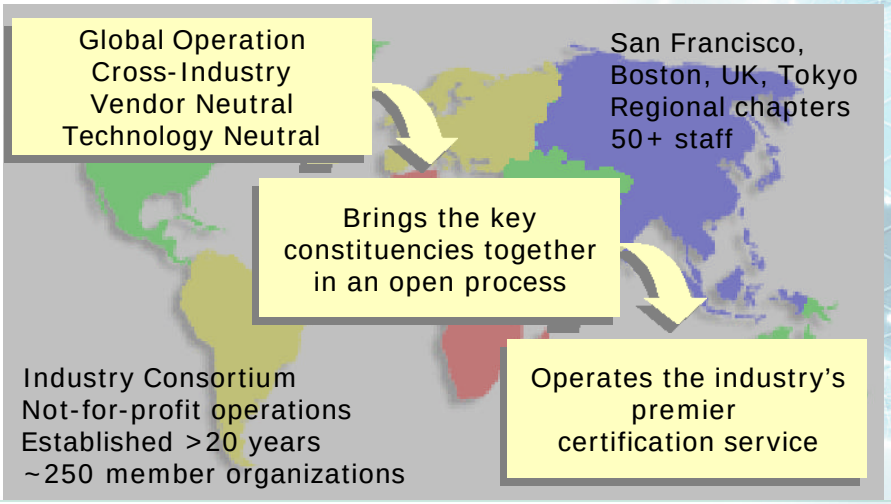
About The Open Group



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Mission and Strategy

- Mission:
  - Drive the creation of **Boundaryless Information Flow.**
- Strategy:
  - Work with **customers** to capture, understand and address current and emerging requirements, establish policies and share best practices.
  - Work with **suppliers**, **consortia** and **standards bodies** to develop consensus and facilitate interoperability, to evolve and integrate open specifications and open source technologies;
  - Develop and operate the IT industry's premier **certification service** and encourage procurement of certified products.

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Activities

- Certification Services
  - For specifications of The Open Group and other consortia
- Conferences
  - Quarterly member meetings
  - Architecture Practitioners Conferences
- Member Forums and Technical Working Groups
  - Architecture,
  - Management,
  - Grid Enterprise Services, Identity,
  - "Jericho" (de-perimiterisation)
  - Messaging, Platform,
  - Real Time & Embedded,
  - Security, UDEF, SOA,
  - Semantic Interoperability

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Forums/Work Areas of The Open Group

- Meeting points for Suppliers and Buyers
- Each Forum is effectively an autonomous consortium operating within The Open Group
  - Direction determined by members
  - Outputs approved by members
  - Must obey some rules to respect anti-trust legislation
- Forums initiate new areas of work, often in partnership with other Forums
  - …leading to industry standards
  - …leading to certification programs based on those standards

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Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
- TOGAF 8.1
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Architecture Forum – Vision

- An effective open framework and method for architecture
- Architecture as a professional discipline
- Adequate “Commercial Off-The-Shelf” architecture tools

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Stakeholders and Value

- Customer Architects
  - reduced time, cost, risk
- Tools Vendors
  - bigger market, bigger market share
- IT Solution Vendors
  - greater cost-efficiency
- Integrators
  - greater cost-efficiency, better service
- Academic / Research Organizations
  - funding support

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What is an Enterprise?

- 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 organization of something, embodied in:
  - its components,
  - their relationships to each other and the environment,
  - and the principles governing its design and evolution.

Adapted from ANSI/IEEE Standard 1471-2000

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Architecture Types

- There are four types of Architecture commonly accepted as subsets of Enterprise Architecture
  - Business (Process) Architecture
  - Data Architecture
  - Applications Architecture
  - Technology Architecture

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Why Enterprise Architecture?

- Effective management and exploitation of information through IT is 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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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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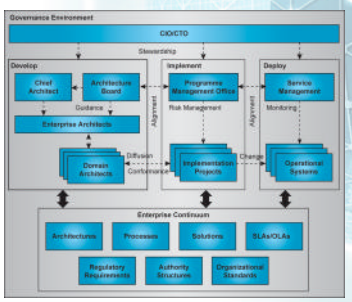
The Importance of Governance

- 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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What is an Architecture Framework?

- An **architecture framework** is a toolkit which can be used for developing a broad range of different architectures.
- It should describe a method for designing an information system 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
  - Foundation architecture in the Enterprise Continuum

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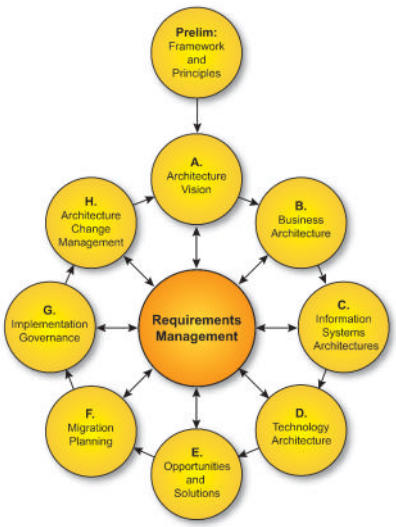
Enterprise Architecture Development Method



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TOGAF Development

• 1994: Requirement	*Proof of need*
• 1995: TOGAF Version 1	*Proof of concept*
• 1996: TOGAF Version 2	*Proof of application*
• 1997: TOGAF Version 3	*Relevance to practical architectures (building blocks)*
• 1998: TOGAF Version 4	*Enterprise Continuum (TOGAF in context)*
• 1999: TOGAF Version 5	*Business Scenarios (architecture requirements)*
• 2000: TOGAF Version 6	*Architecture views - IEEE 1471*
• 2001: TOGAF Version 7	*Architecture Principles; Compliance Reviews*
• 2002: TOGAF Version 8	*Extension to Enterprise Architecture*
• 2003: TOGAF Version 8.1	*Requirements Management; Governance; Maturity Models; Skills Framework*
• 2006: TOGAF Version 8.1.1	*Technical Corrigendum 1 applied*

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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 first published
- TOGAF 7 – Technical Edition
- TOGAF 8 Enterprise Edition

'93 '94 '96 '01 '02 '03

- The Interoperable Enterprise Business Scenario first published

First TOGAF Certification Program Launched

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TOGAF Scope

- TOGAF emphasizes business goals as architecture drivers, and provides a repository of best practice.
- It includes:
  - the TOGAF ADM, an iterative approach to planning, designing, realizing, and governing the architecture
  - reference architectures that provide a set of templates for an organization to adapt to their specific requirements
  - a resource base.

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TOGAF 8 Goals

- Long-term:
  - An industry standard, generic enterprise architecture method….
  - ….usable in conjunction with frameworks having products relevant/specific to particular sectors.
    - Several frameworks have mind share:
      - Zachman, Spewak, DoD Framework, FEAF, TEAF, …
    - Almost all focus on products, not method
    - TOGAF and…. (not TOGAF or….)
- Version 8:
  - An overall structure and core method for enterprise architecture that can be filled out in future years.

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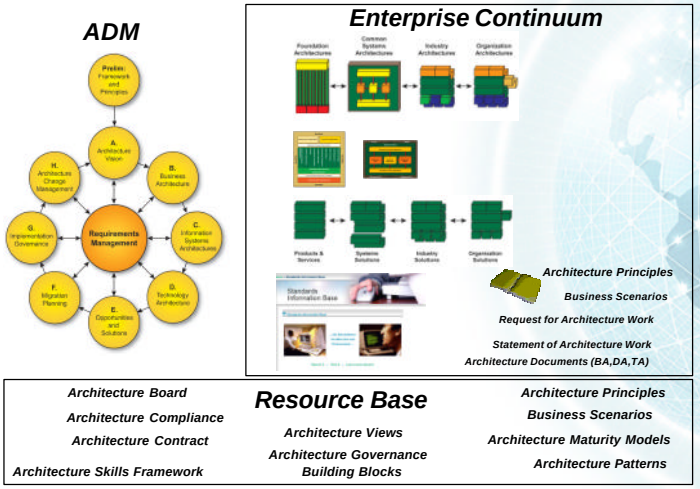
TOGAF 8 Components



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TOGAF 8 Components

- Architecture Development Method (ADM)
  - An iterative sequence of steps to develop an enterprise-wide architecture
- The Enterprise Continuum
  - During application of the ADM, assets are created or drawn from existing assets, used, modified and returned to the *virtual repository* that is the Enterprise Continuum
- Resource Base
  - During application of the ADM, processes, templates, checklists and other items from the Resource Base are deployed as methods to develop the architecture

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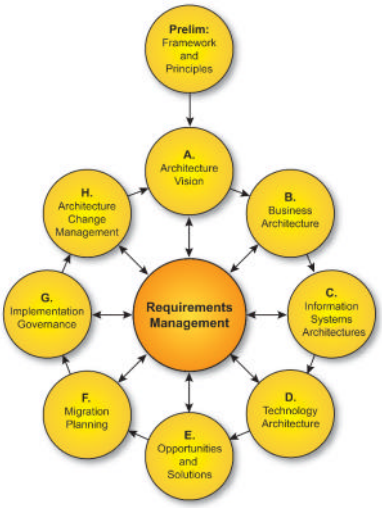
Enterprise Architecture Development Method



- The core of TOGAF
- An iterative method
- 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.

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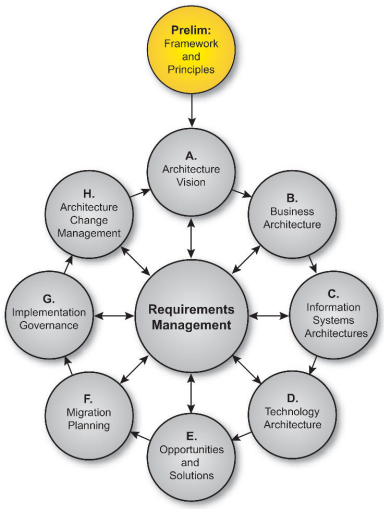
Preliminary Phase Frameworks & Principles



- This phase prepares the organisation for undertaking Enterprise Architecture successfully
  - Understand business environment
  - High level management commitment
  - Agreement on scope
  - Establish principles
  - Establish governance structure
  - Agree method to be adopted

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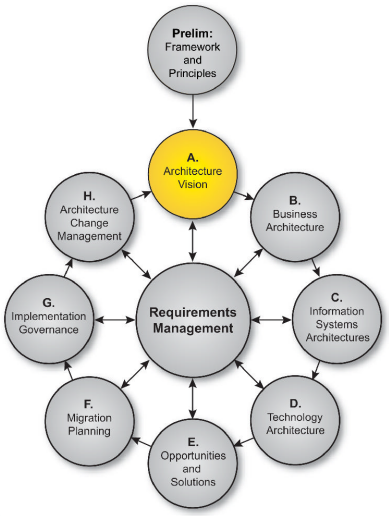
Phase A
Architecture Vision



- Initiates one iteration of the architecture process
  - Sets scope, constraints, expectations
  - Required at the start of every architecture cycle
- Validates business context
- Creates Statement of Architecture work

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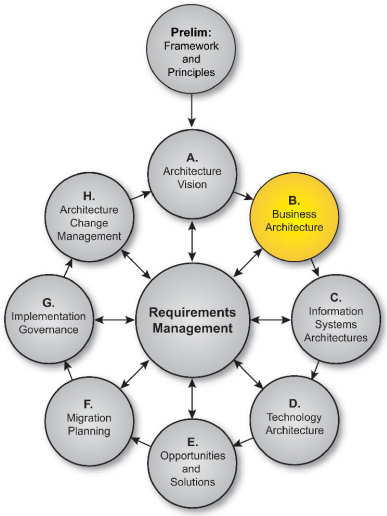
Phase B
Business Architecture



- 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 it's business goals

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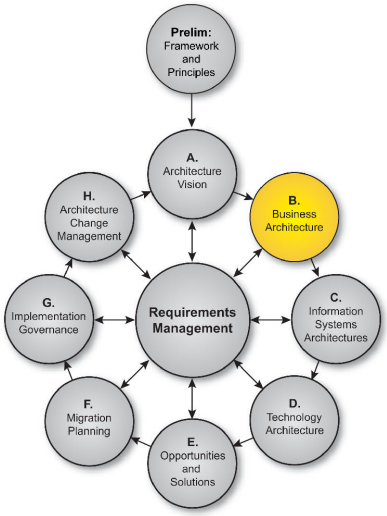
Business Architecture - Contents



- Organization structure
- Business goals and objectives
- Business functions
- Business Services
- Business processes
- Business roles
- Correlation of organization and functions.

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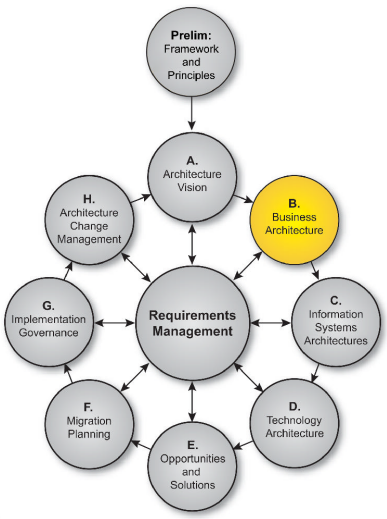
Business Architecture - Steps



- Confirm context
- Define baseline
- Define target
  - Views are important
- Validate
  - Requirements
  - Concerns
- Perform Gap analysis
- Produce report

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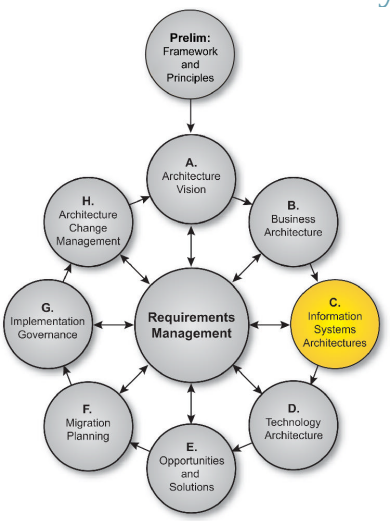
Phase C
Information Systems Architecture



- The fundamental organization of an IT system, embodied in
  - relationships to each other and the environment, and the principles governing its design and evolution
- Shows how the IT systems meets the business goals of the enterprise

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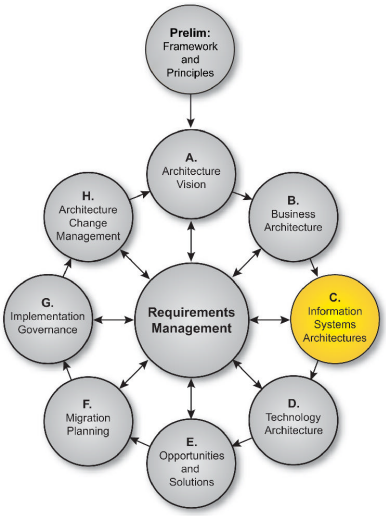
Data or Applications first ?



- 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 Systems may be more efficient
- There will need to be some iteration to ensure consistency

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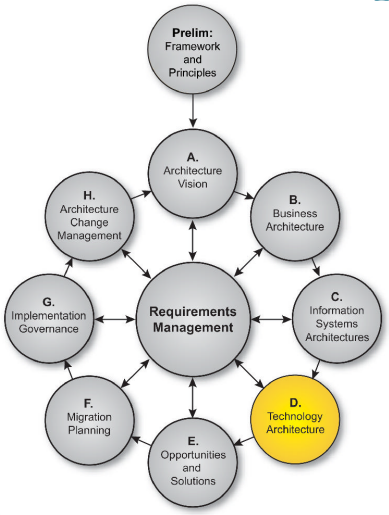
Phase D
Technology Architecture



- 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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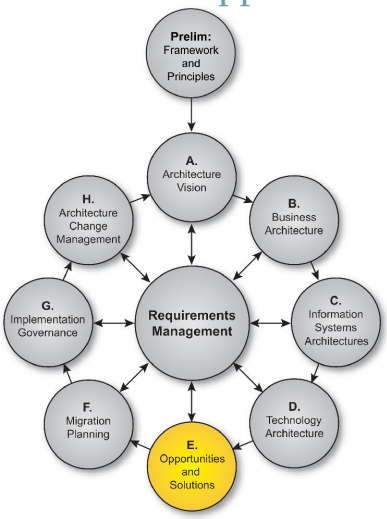
Phase E
Opportunities and Solutions



- Identify the major implementation projects
- Decide on approach
  - Make v Buy v Re-Use
  - Outsource
  - COTS
  - Open Source
- Assess priorities
- Identify dependencies

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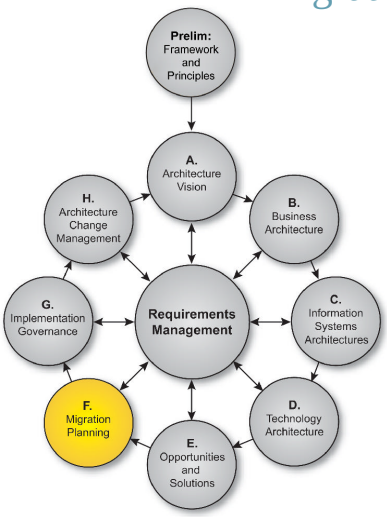
Phase F
Migration Planning



- For projects identified in Phase E perform
  - Cost/benefit analysis
  - Risk assessment
- Produce an implementation road-map

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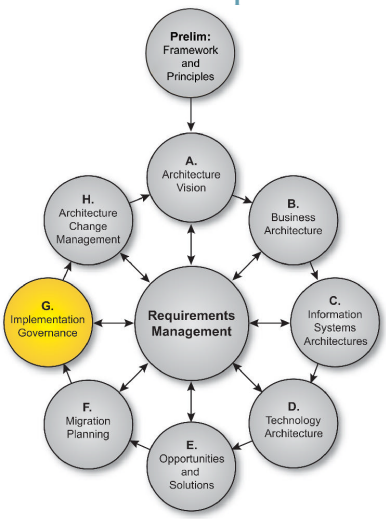
Phase G
Implementation Governance



- Defines architecture constraints on implementation projects
- Architecture contract
- Monitors implementation work for conformance

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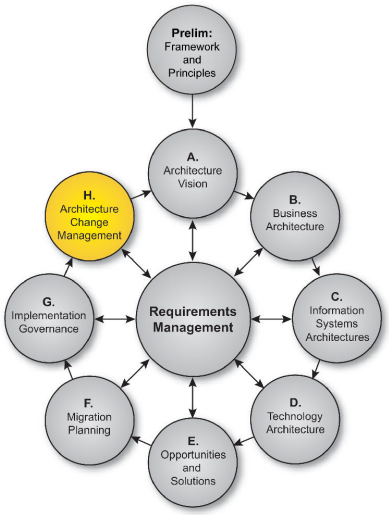
Phase H
Architecture Change Management



- 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

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Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
- TOGAF v8
- A Look Ahead
- TOGAF Certification
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TOGAF Certification

TOGAF 8 Certified	For Individuals	Knowledge based
TOGAF 8 Training	For organizations providing training courses	Course syllabus meets requirements. Instructor certified
TOGAF 8 Professional Services	For organizations providing professional services	Abide by code of practice. Services provided by certified Architects
TOGAF 8 Tool Support	For organizations providing tools	The tool supports the TOGAF ADM

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Some Figures about TOGAF

- Developed by 200+ organisations worldwide involved in its development
  - Large IT users
  - IT vendors
  - System Integrators
  - Academics
- Used in major IT projects worldwide
  - IBM, EDS, HP, Sun, Infosys, …..
- Community of knowledgeable TOGAF practitioners
  - More than 1750 certified
- Supported by Architecture Tools

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TOGAF 8 - Recent Developments

- Hewlett-Packard's internal IT used TOGAF8 in its recent successful merger with Compaq
- Raytheon integrating TOGAF8 into its REAP methodology
- Sun Microsystems incorporating TOGAF8 into a composite best-of-breed of EA frameworks
- TOGAF8 supported in the Troux/Metis, ProFroma/ProVision, and Telelogic/System Architect architecture tools
- Collaboration with Raytheon and MITRE Corporation to map TOGAF8 to DODAF
- Collaboration with OMG and Integration Consortium to map TOGAF8 to OMG's Model Driven Architecture (MDA)
- TOGAF8 Certification Program launched February 2004
- >1500 TOGAF certified individuals to date

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TOGAF 8 Summary

- An effective, industry standard framework and method for enterprise architecture.
- Complementary to, not competing with, other enterprise frameworks
- A repository of best practice
  - "Demystifies" architecture development
- Vendor, tool, and technology neutral
- A framework and method for achieving the "Boundaryless Information Flow" vision

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For More Information . . .

- The TOGAF Web Site
  - http://www.opengroup.org/togaf/
- The Architecture Forum
  - http://www.opengroup.org/architecture/
- TOGAF Version 8 on-line
  - http://www.opengroup.org/architecture/togaf8-doc/arch/
- TOGAF Version 8 licensing and downloads
  - http://www.opengroup.org/togaf/

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