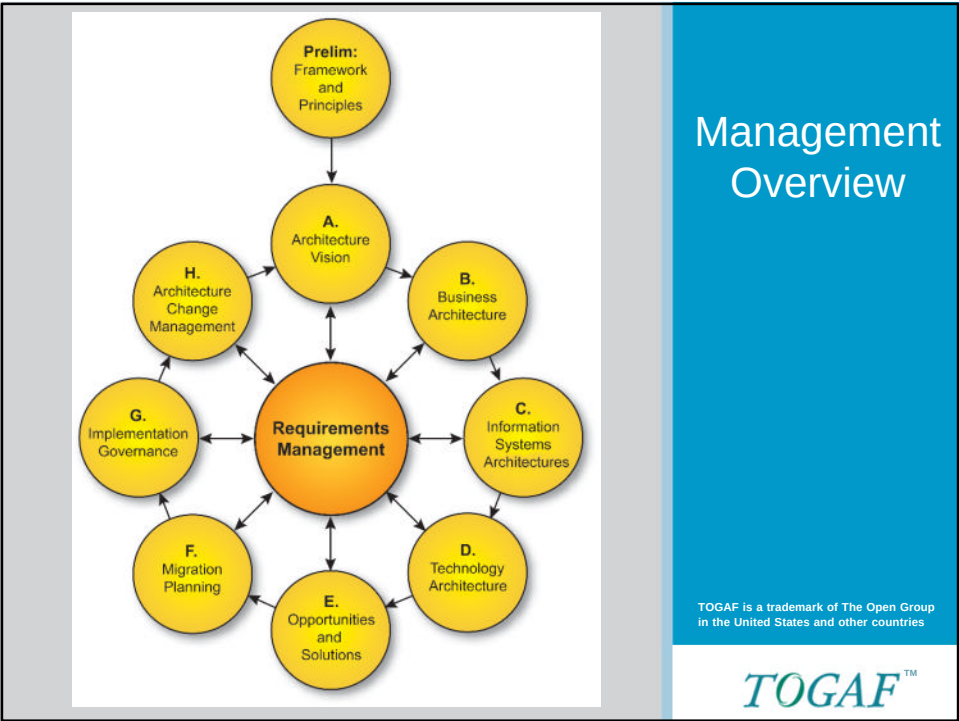




Module Objectives

- 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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TOGAF™

Agenda

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

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TOGAF™

About The Open Group

Global Operation
Cross-Industry
Vendor Neutral
Technology Neutral

San Francisco,
Boston, UK, Tokyo
Regional chapters
50+ staff

Brings the key
constituencies together
in an open process

Industry Consortium
Not-for-profit operations
Established >20 years
~250 member organizations

Operates the industry's
premier
certification service

Slide 5 of 50

TOGAF™

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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TOGAF™

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-perimeterisation)
 - Messaging, Platform,
 - Real Time & Embedded,
 - Security, UDEF, SOA,
 - Semantic Interoperability



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TOGAF™

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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TOGAF™

Agenda

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

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TOGAF™

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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TOGAF™

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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TOGAF™

Agenda

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

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TOGAF™

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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TOGAF™

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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TOGAF™

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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TOGAF™

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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TOGAF™

Pressure to develop Enterprise Architecture

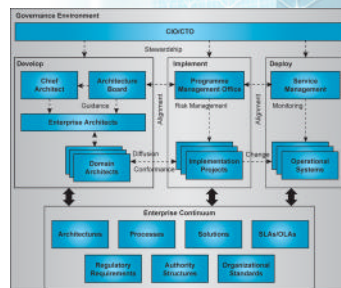
- Laws and regulations
 - Clinger-Cohen Act (US Information Technology Management Reform Act 1996)
 - EU Directives on the Award of Public Contracts
 - Sarbanes-Oxley
- More extended enterprises
- More co-operative IT operations
- Greater publicity to failures
- Increase in litigation
- Audit requirements

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TOGAF™

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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TOGAF™

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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TOGAF™

Agenda

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

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TOGAF™

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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TOGAF™

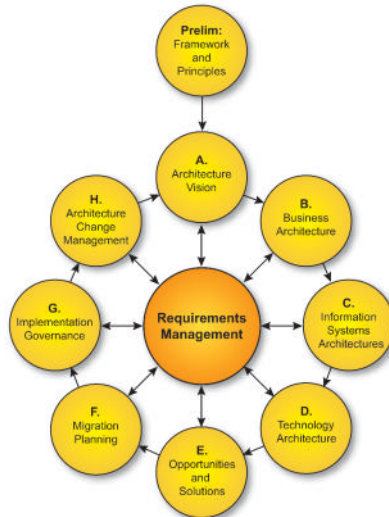
The Value of a Framework

- 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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TOGAF™

Enterprise Architecture Development Method



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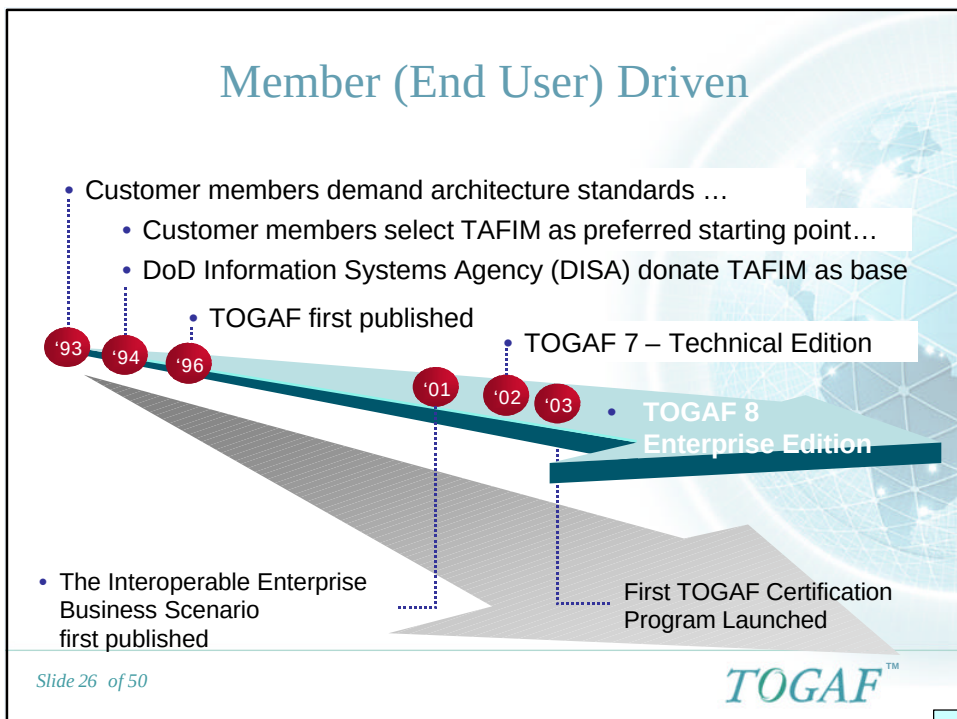
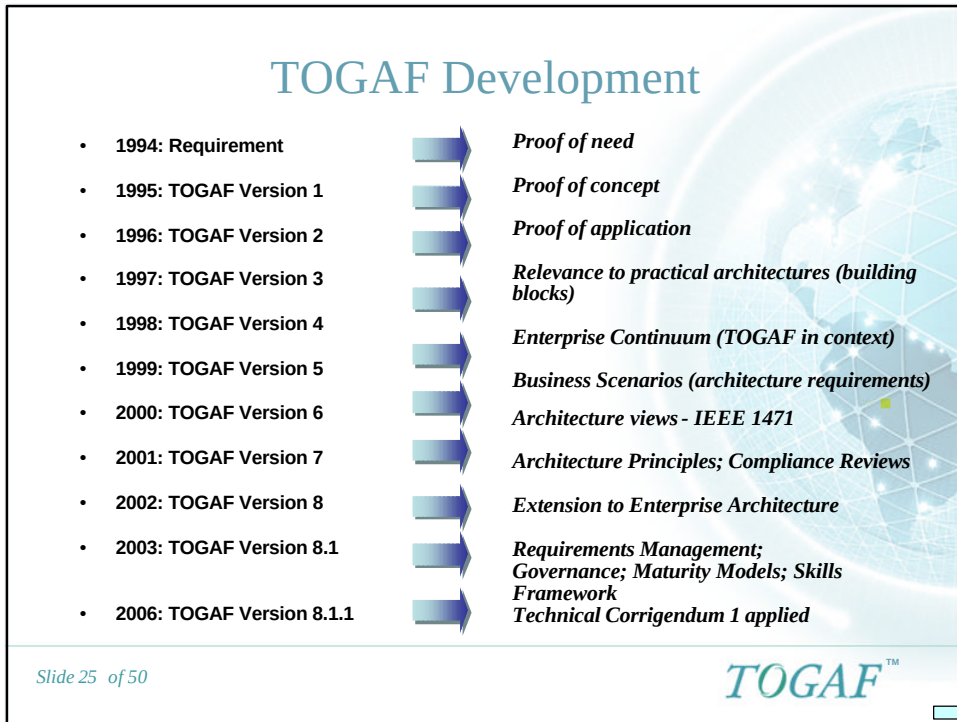
TOGAF™

Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
- **TOGAF 8.1**
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TOGAF™



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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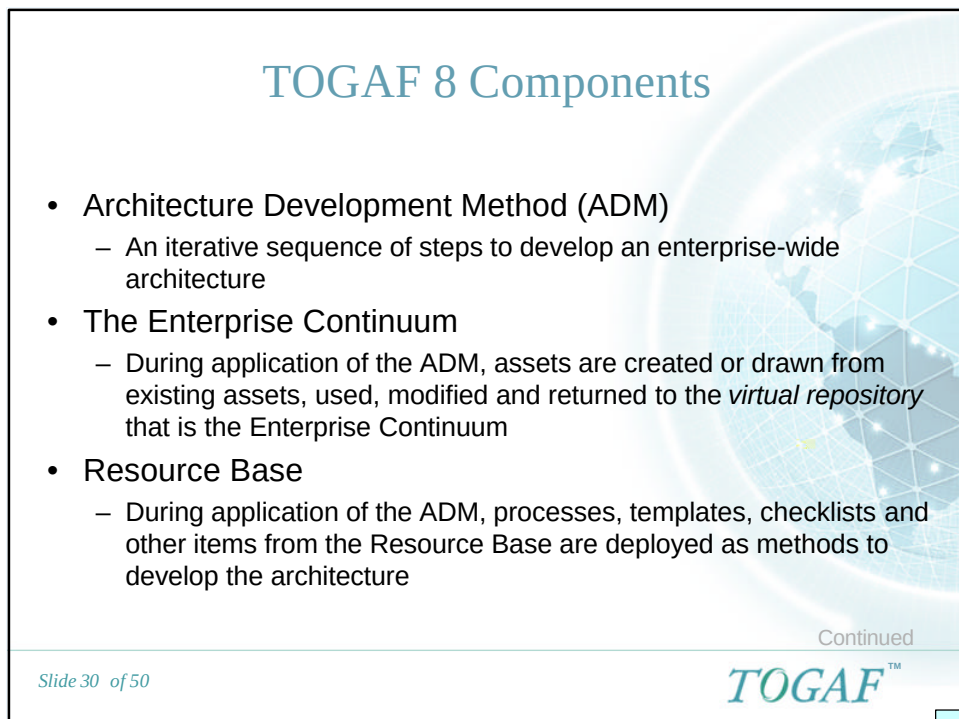
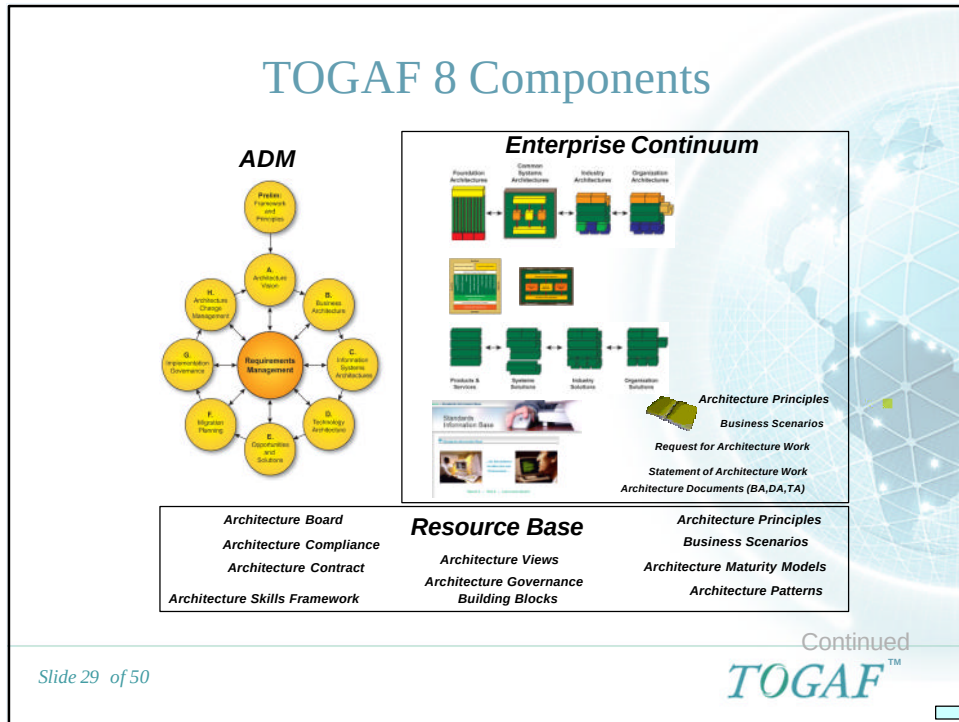
TOGAF™

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™



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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TOGAF™

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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TOGAF™

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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TOGAF™

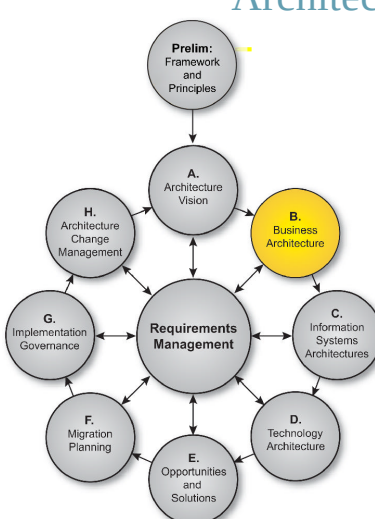
Phase B Business Architecture

- 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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TOGAF™

Business Architecture - Contents



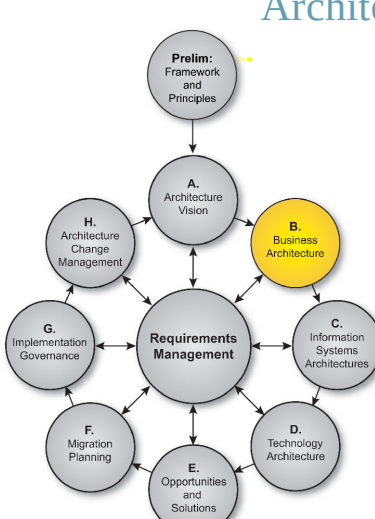
The diagram illustrates the components of Business Architecture. At the top is a circle labeled 'Prelim: Framework and Principles'. Below it is 'A. Architecture Vision'. To the right of 'A' is 'B. Business Architecture', which is highlighted in yellow. Below 'A' and 'B' is a central circle labeled 'Requirements Management'. To the left of 'Requirements Management' are 'H. Architecture Change Management' and 'G. Implementation Governance'. To the right are 'C. Information Systems Architectures' and 'D. Technology Architecture'. Below 'Requirements Management' are 'F. Migration Planning' and 'E. Opportunities and Solutions'. Arrows indicate relationships between these components.

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

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TOGAF™

Business Architecture - Steps



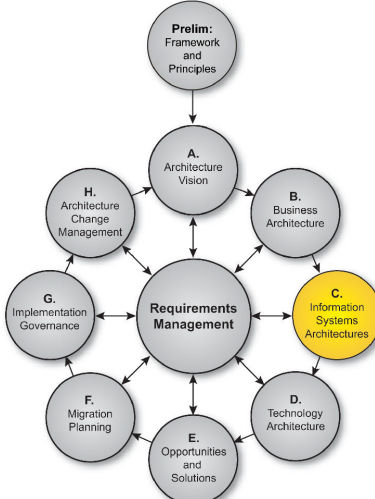
The diagram illustrates the steps of Business Architecture. At the top is a circle labeled 'Prelim: Framework and Principles'. Below it is 'A. Architecture Vision'. To the right of 'A' is 'B. Business Architecture', which is highlighted in yellow. Below 'A' and 'B' is a central circle labeled 'Requirements Management'. To the left of 'Requirements Management' are 'H. Architecture Change Management' and 'G. Implementation Governance'. To the right are 'C. Information Systems Architectures' and 'D. Technology Architecture'. Below 'Requirements Management' are 'F. Migration Planning' and 'E. Opportunities and Solutions'. Arrows indicate relationships between these components.

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

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TOGAF™

Phase C Information Systems Architecture



The diagram illustrates the TOGAF Phase C Information Systems Architecture. It features a central circle labeled 'Requirements Management'. Surrounding this central circle are eight other circles, each representing a different aspect of the architecture: 'Prelim: Framework and Principles' (top), 'A. Architecture Vision' (top-right), 'B. Business Architecture' (right), 'C. Information Systems Architectures' (bottom-right, highlighted in yellow), 'D. Technology Architecture' (bottom), 'E. Opportunities and Solutions' (bottom-left), 'F. Migration Planning' (left), and 'G. Implementation Governance' (top-left). Arrows indicate a clockwise flow from Prelim to A, B, C, D, E, F, G, and back to Prelim. Additionally, double-headed arrows connect the central 'Requirements Management' circle to each of the eight surrounding circles.

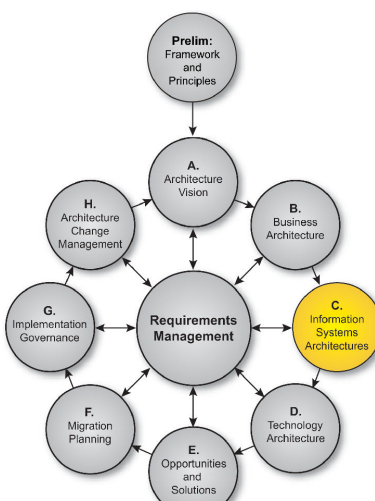
- The fundamental organization of an IT system, embodied in
 - relationships to each other and the environment, and the principles governing its design and evolution
- Shows how the IT systems meets the business goals of the enterprise

Continued

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TOGAF™

Data or Applications first ?



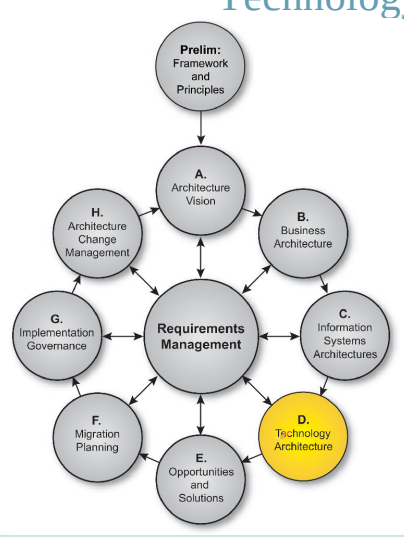
The diagram is identical to the one in Slide 37, showing the TOGAF Phase C Information Systems Architecture. It features a central circle labeled 'Requirements Management' surrounded by eight other circles: 'Prelim: Framework and Principles', 'A. Architecture Vision', 'B. Business Architecture', 'C. Information Systems Architectures' (highlighted in yellow), 'D. Technology Architecture', 'E. Opportunities and Solutions', 'F. Migration Planning', and 'G. Implementation Governance'. Arrows indicate a clockwise flow from Prelim to A, B, C, D, E, F, G, and back to Prelim. Double-headed arrows also connect the central 'Requirements Management' circle to each of the eight surrounding circles.

- 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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TOGAF™

Phase D Technology Architecture



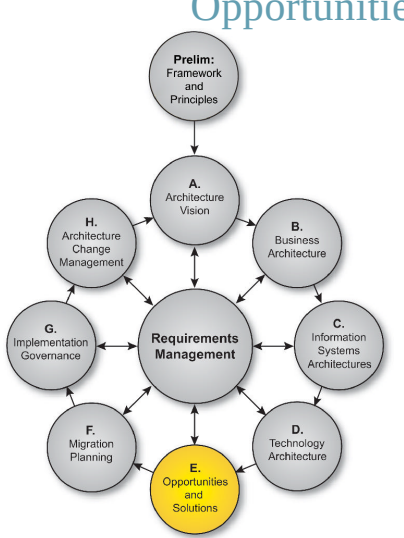
The diagram illustrates the TOGAF Phase D Technology Architecture. It features a central 'Requirements Management' circle connected to eight surrounding circles: 'Prelim: Framework and Principles' (top), 'A. Architecture Vision' (top-right), 'B. Business Architecture' (right), 'C. Information Systems Architectures' (bottom-right), 'D. Technology Architecture' (bottom, highlighted in yellow), 'E. Opportunities and Solutions' (bottom-left), 'F. Migration Planning' (left), and 'G. Implementation Governance' (top-left). Arrows indicate a clockwise flow from Prelim to A, B, C, D, E, F, G, and back to Prelim. A double-headed arrow connects Requirements Management to each of the eight surrounding circles.

- 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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TOGAF™

Phase E Opportunities and Solutions



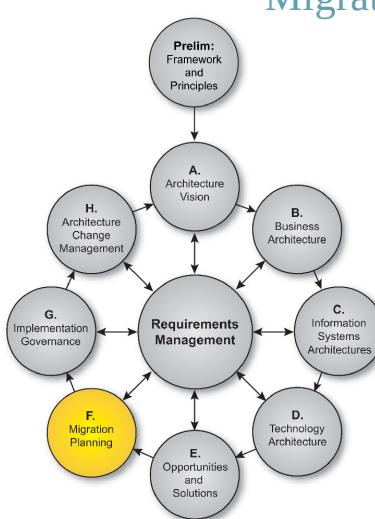
The diagram illustrates the TOGAF Phase E Opportunities and Solutions. It features a central 'Requirements Management' circle connected to eight surrounding circles: 'Prelim: Framework and Principles' (top), 'A. Architecture Vision' (top-right), 'B. Business Architecture' (right), 'C. Information Systems Architectures' (bottom-right), 'D. Technology Architecture' (bottom), 'E. Opportunities and Solutions' (bottom-left, highlighted in yellow), 'F. Migration Planning' (left), and 'G. Implementation Governance' (top-left). Arrows indicate a clockwise flow from Prelim to A, B, C, D, E, F, G, and back to Prelim. A double-headed arrow connects Requirements Management to each of the eight surrounding circles.

- 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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TOGAF™

Phase F Migration Planning



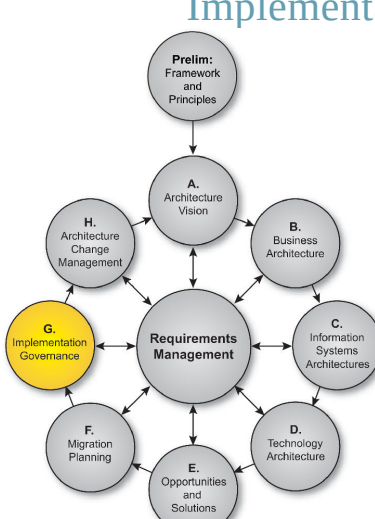
The diagram illustrates the TOGAF Architecture Change Management Cycle. At the center is a circle labeled 'Requirements Management'. Surrounding it are eight circles: 'A. Architecture Vision' (top), 'B. Business Architecture' (top-right), 'C. Information Systems Architectures' (right), 'D. Technology Architecture' (bottom-right), 'E. Opportunities and Solutions' (bottom), 'F. Migration Planning' (bottom-left, highlighted in yellow), 'G. Implementation Governance' (left), and 'H. Architecture Change Management' (top-left). Arrows connect these outer circles in a clockwise cycle. Above the cycle is a circle labeled 'Prelim: Framework and Principles' with an arrow pointing down to 'A. Architecture Vision'.

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

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TOGAF™

Phase G Implementation Governance



The diagram illustrates the TOGAF Architecture Change Management Cycle. At the center is a circle labeled 'Requirements Management'. Surrounding it are eight circles: 'A. Architecture Vision' (top), 'B. Business Architecture' (top-right), 'C. Information Systems Architectures' (right), 'D. Technology Architecture' (bottom-right), 'E. Opportunities and Solutions' (bottom), 'F. Migration Planning' (bottom-left), 'G. Implementation Governance' (left, highlighted in yellow), and 'H. Architecture Change Management' (top-left). Arrows connect these outer circles in a clockwise cycle. Above the cycle is a circle labeled 'Prelim: Framework and Principles' with an arrow pointing down to 'A. Architecture Vision'.

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

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TOGAF™

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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TOGAF™

Agenda

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

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TOGAF™

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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TOGAF™

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™

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™

Agenda

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

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TOGAF™

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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TOGAF™

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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