

## Module Objectives

- To provide a management overview of TOGAF 9
  - The Open Group
  - The Architecture Forum
  - Why enterprise architecture
  - Why a framework
  - TOGAF 9
  - TOGAF 9 Certification
  - Summary

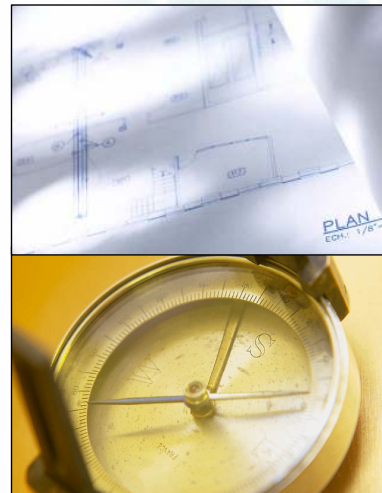
*Slide 3 of 68*

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## Agenda

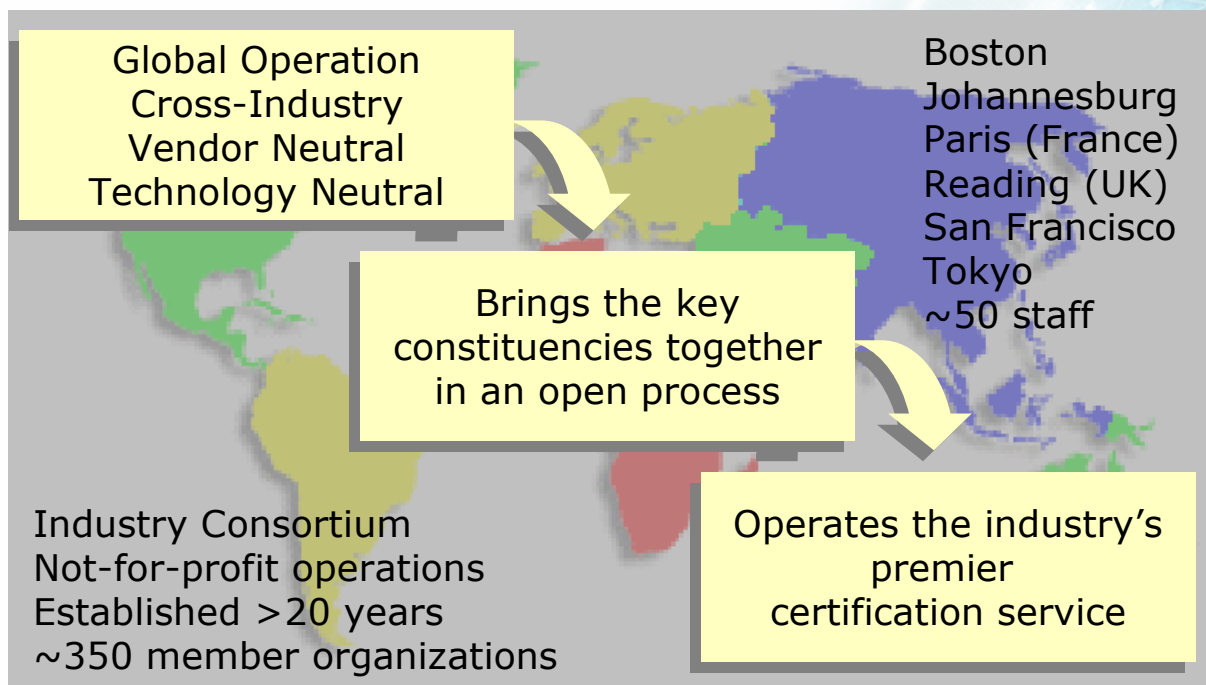
- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
- TOGAF 9
- TOGAF 9 Certification
- Summary



Slide 4 of 68

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## About The Open Group



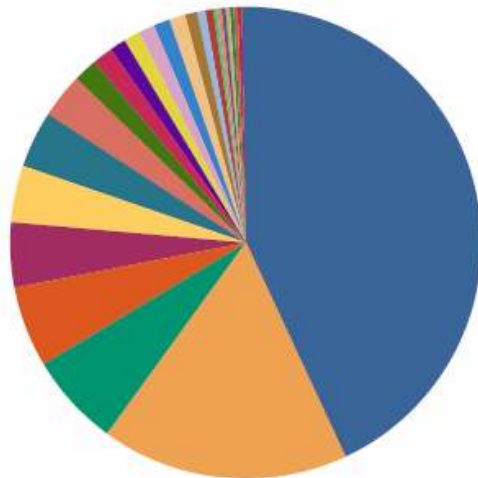
Slide 5 of 68

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## The Open Group Membership by Country

As at September 30th, 2008



Total 350 enterprises

USA	43.1%
UK	16.9%
South Africa	6.3%
Japan	5.7%
Canada	4.3%
Germany	4.0%
Netherlands	4.0%
Australia	2.9%
France	1.7%
India	1.4%
Denmark	1.1%
New Zealand	1.1%
Sweden	1.1%
Switzerland	1.1%
Belgium	0.9%
Norway	0.9%
Singapore	0.6%
Spain	0.6%
Brazil	0.3%
China	0.3%
Finland	0.3%
Ireland	0.3%
Israel	0.3%
Poland	0.3%
South Korea	0.3%
United Arab Emirates	0.3%
Total:	100.0%

Based on country of HQ

Slide 6 of 68

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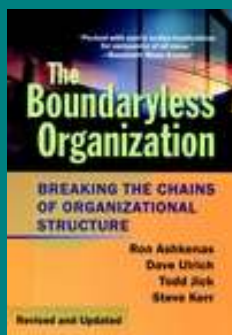
## What is the shared vision of The Open Group?

The Open Group's  
Platinum Members



### 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.

### Vision

Slide 7 of 68

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## How Important...

- Not having Boundaryless Information Flow where systems interoperate, i.e. easily exchange information and use that information to improve operations, is causing organizations real pain \*
    - 100s of millions in lost opportunities
    - Billions spent to make systems interoperate or to recover from mistakes
    - *The risks are not only financial but deal with lost lives*
      - *Hospitals, 911/999 systems, Critical infrastructure, Air Traffic Control...*
- \* respondents to survey taken at conference

Slide 8 of 68

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## What is The Open Group's role?

- **Customers**
  - Articulate current and emerging requirements, establish policies, and share best practices
  - Provide feedback on deliverables
- **Suppliers**
  - Develop consensus to evolve and integrate specifications and open source technologies and deliver open standards
- **Other consortia and standards bodies**
  - Collaborate openly when it is in the best interest of their and our members or the industry generally, and share information freely
- **Staff**
  - Support the work of the members
  - Offer a comprehensive set of services to enhance the operational efficiency of other consortia; and
  - Develop and operate the industry's premier certification service and encouraging the market adoption of certified products and people

Slide 9 of 68

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## Activities

- Board work groups
  - IT Architect Certification
  - IT Specialist Certification
- Councils
  - Customer Council, Supplier Council
- Member Forums
  - Architecture, ArchiMate®
  - Enterprise Management,
  - Real Time & Embedded,
  - Security and Identity Management, “Jericho” (de-perimiterisation)
- Work Groups
  - Business Architecture
  - Semantic Interoperability, including
    - Universal Data Element Framework (UDEF)
  - Service Oriented Architecture (SOA)
- Technical Working Groups
  - Platform, Base Working Group



Slide 10 of 68

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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

*Slide 11 of 68*

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## How members work

- Mostly virtual
  - E-mail, teleconference, web conference
- Collaboration infrastructure
  - Track activities for projects, forums etc
- Quarterly Global Member Meetings
- Local Member Meetings

### Key Deliverables

- Open Standards
  - Professional
  - Process and methodology
  - Software, technical
- Certification of conformance to standards
- Conferences and events – global and local

Slide 12 of 68

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## Why “Customers” join

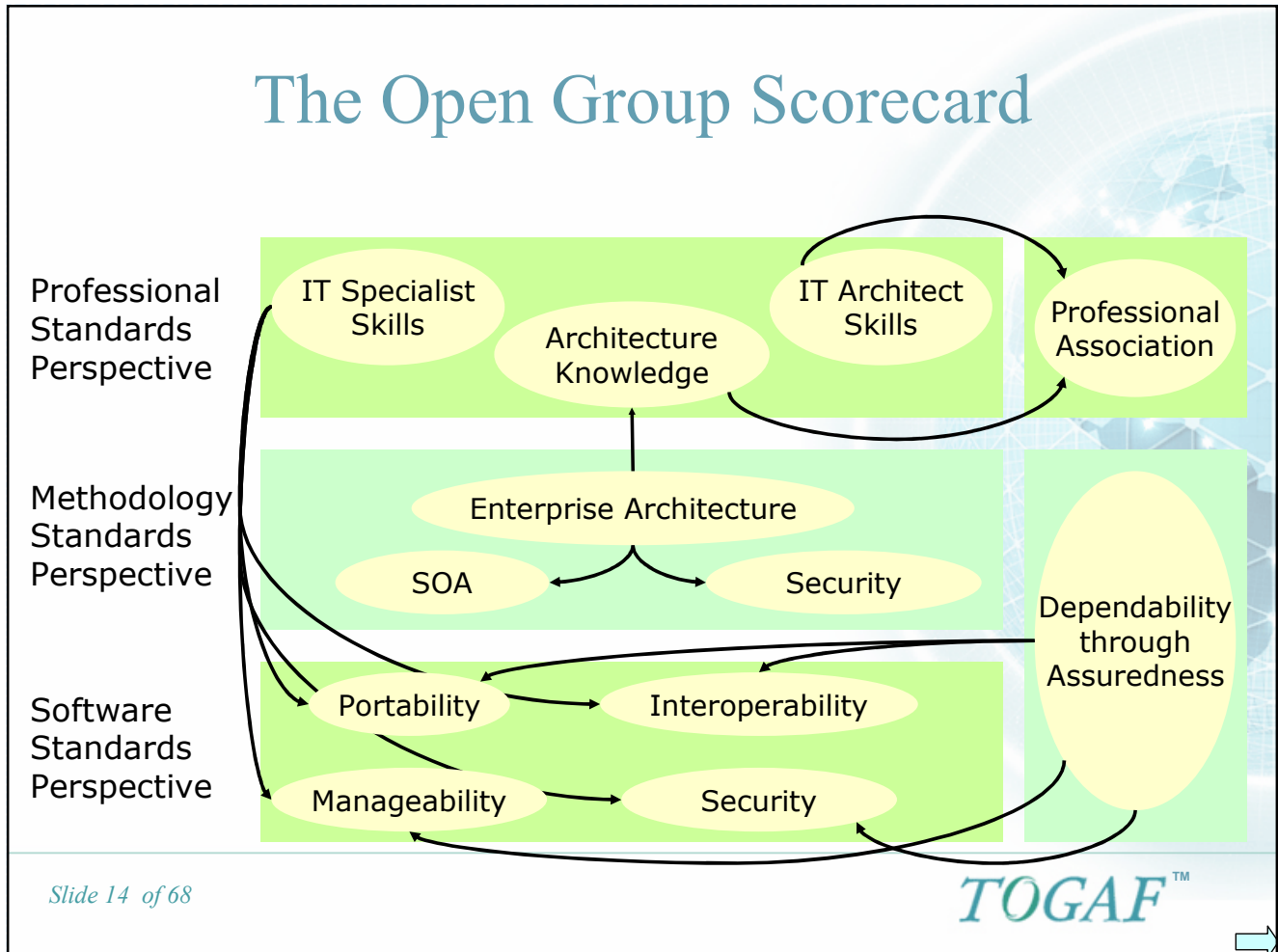
- We can build relationships with peers in our or other industries and share knowledge
- **We can talk to suppliers in a non-selling environment**
- We can influence the priorities being addressed by the industry
- **We have early access to the solutions being developed to address our urgent issues**
- We can track forums, work groups, projects and activities that are relevant to our enterprise



Slide 13 of 68

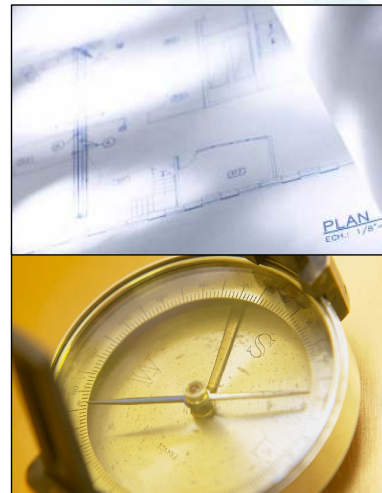
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## Agenda

- The Open Group
- **The Architecture Forum**
- Why Enterprise Architecture
- Why a Framework
- TOGAF 9
- TOGAF 9 Certification
- Summary



Slide 15 of 68

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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

*Slide 16 of 68*

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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

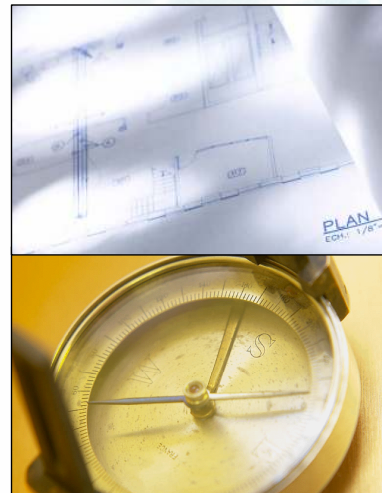
*Slide 17 of 68*

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## Agenda

- The Open Group
- The Architecture Forum
- **Why Enterprise Architecture**
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*Slide 18 of 68*

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## What is an Enterprise?

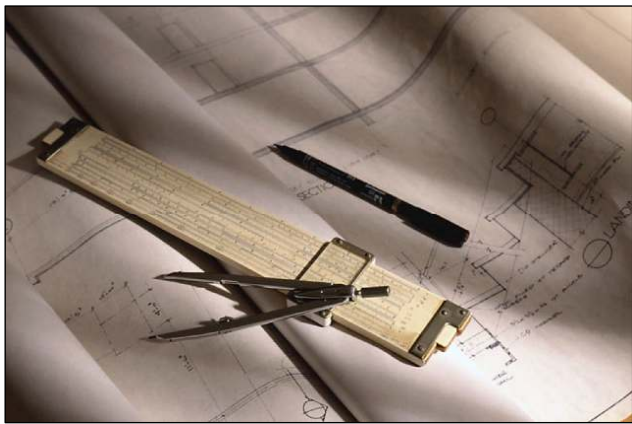
- A collection of organizations that share a common set of goals
  - Government agency
  - Part of a corporation
  - Corporation
- Large corporations may comprise multiple enterprises
- May be an “extended enterprise” including partners, suppliers and customers

Slide 19 of 68

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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.

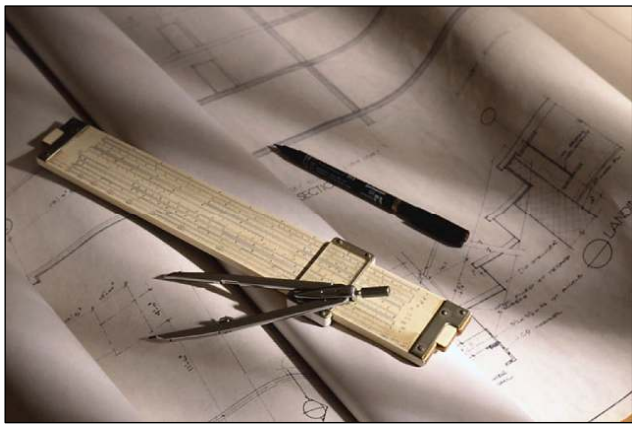
Adapted from ANSI/IEEE Standard 1471-2000

Slide 20 of 68

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# What is Enterprise Architecture?



## **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]

[1] MIT Center for Information Systems Research

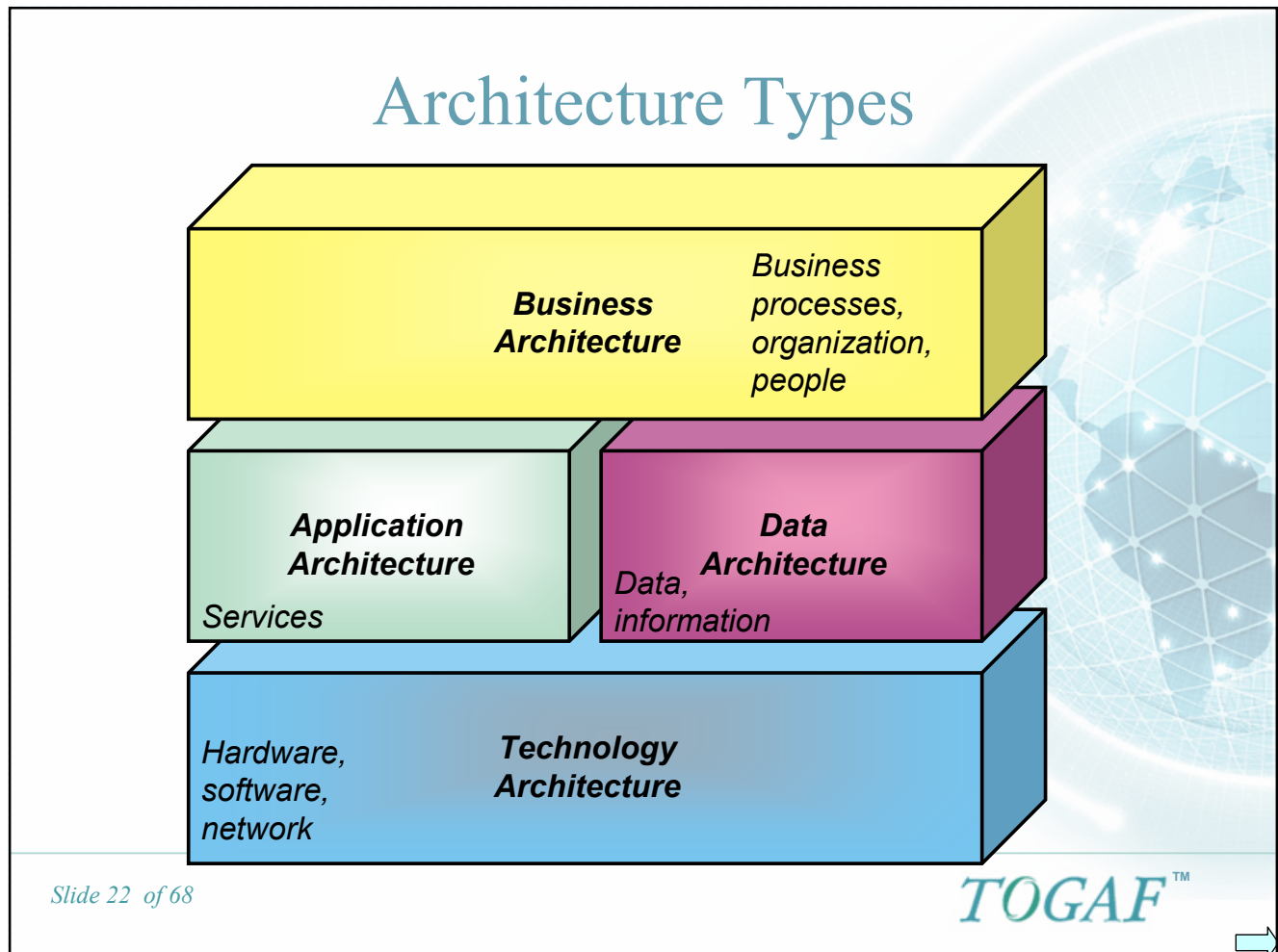
[2] SearchCIO.com

Slide 21 of 68

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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

Slide 23 of 68

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## Why Enterprise Architecture?

- Two key reasons why you need an enterprise architecture:
  - Critical to business survival and success
  - Enables managed innovation within the enterprise

*Slide 24 of 68*

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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

Slide 25 of 68

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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

Slide 26 of 68

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## IT Benefits of Enterprise Architecture

- Better traceability of IT costs
- Lower IT costs – design, buy, operate, support, change
- Faster design and development
- Less complexity
- Less IT risk

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

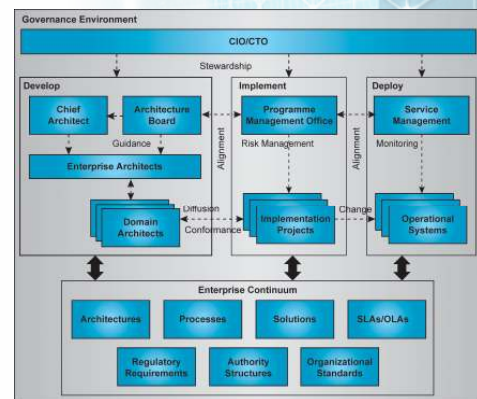
Slide 27 of 68

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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



Slide 28 of 68

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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?

*Slide 29 of 68*

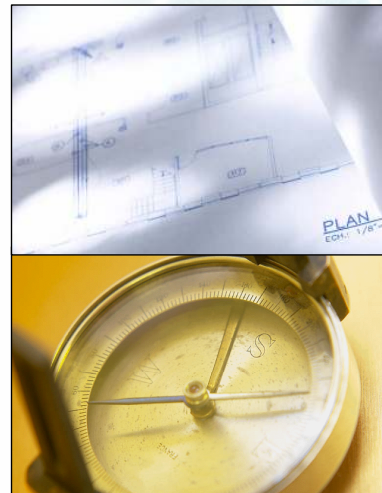
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## Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- **Why a Framework**
- TOGAF 9
- TOGAF 9 Certification
- Summary



Slide 30 of 68

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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.

Slide 31 of 68

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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

*Slide 32 of 68*

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## Enterprise 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**

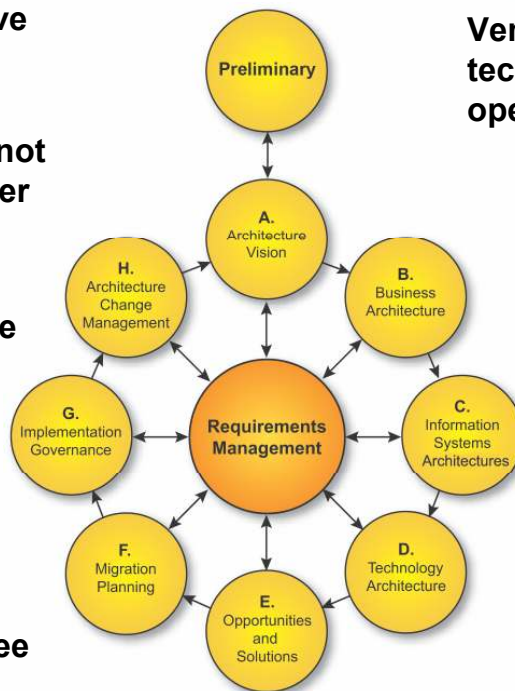
**Vendor, tool and  
technology neutral  
open standard**

**Avoids re-inventing the  
wheel**

**Business IT alignment**

**Based in best practices**

**Possible to participate  
in the evolution of the  
framework**

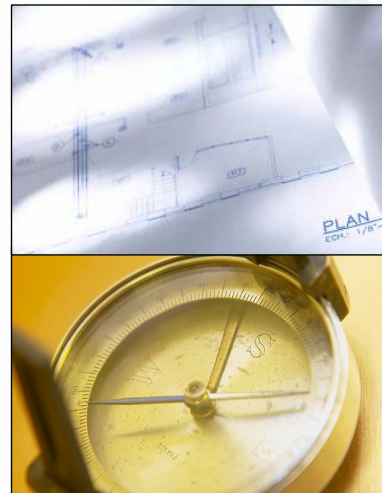


Slide 33 of 68

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## Agenda

- The Open Group
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- Why a Framework
- **TOGAF 9**
- TOGAF 9 Certification
- Summary



## TOGAF Origins

- A customer initiative
- A framework, not an architecture
  - A generic framework for developing architectures to meet different business needs
  - Not a “one-size-fits-all” architecture
- Originally based on TAFIM (U.S. DoD)

Slide 35 of 68

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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)

Slide 36 of 68

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## TOGAF Development

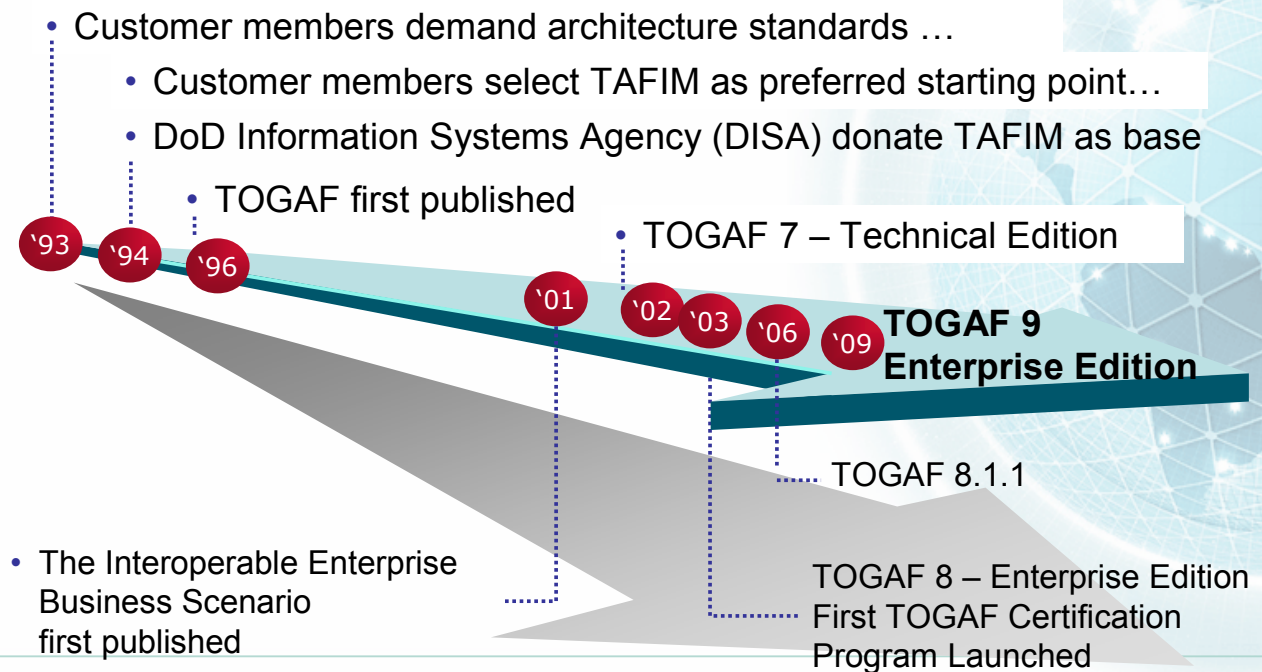
2000	TOGAF Version 6	Architecture Views (IEEE Std 1471)
2001	TOGAF Version 7	Architecture Principles; Compliance Reviews
2002	TOGAF Version 8	Extension to Enterprise Architecture
2003	TOGAF Version 8.1	Requirements Management; Governance; Maturity Models; Skills Framework
2006	TOGAF Version 8.1.1	Technical Corrigendum 1 applied
2009	TOGAF Version 9	Evolutionary restructure; Architecture Content Framework

Slide 37 of 68

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## Member (End User) Driven



Slide 38 of 68

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## TOGAF Scope

- TOGAF emphasizes business goals as architecture drivers, and provides a repository of best practice, including:
  - **TOGAF Architecture Development Method (ADM)**
  - **ADM Guidelines & Techniques**
  - **TOGAF Architecture Content Framework**
  - **Enterprise Continuum**
  - **TOGAF Reference Models**
  - **TOGAF Capability Framework**

*Slide 39 of 68*

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## TOGAF Goals

- Long-term:
  - 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, Spewak, DoD Framework, FEAF, TEAF, ...
    - Almost all focus on products, not method
    - TOGAF and.... (not TOGAF or....)
- Version 9:
  - An evolution from TOGAF 8.1.1. Closer alignment with the business. Restructuring for ease of use. Overall structure and core method for enterprise architecture that can be filled out in future years.

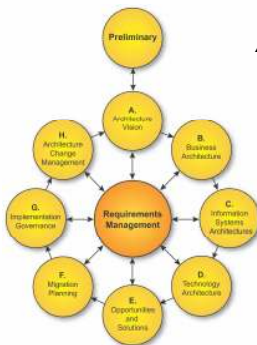
Slide 40 of 68

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# TOGAF 9 Components

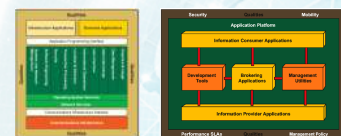
## ADM



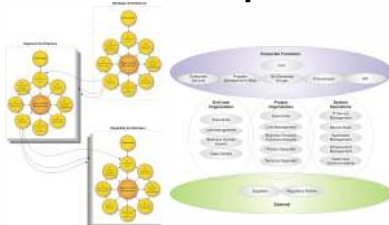
## Architecture Content Framework



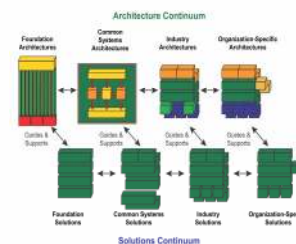
## Reference Models



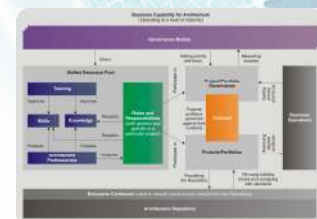
## ADM Guidelines & Techniques



## Enterprise Continuum



## Architecture Capability Framework



Slide 41 of 68

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# TOGAF 9 Specification

<b>Part I - Introduction</b>
Preface, Executive Overview, Core Concepts, Definitions and Release Notes
<b>Part II - Architecture Development Method</b>
Introduction to ADM
ADM Phase Narratives
<b>Part III - ADM Guidelines and Techniques</b>
Guidelines for Adapting the ADM Process
Techniques for Architecture Development
<b>Part IV - Architecture Content Framework</b>
Architecture Content Metamodel
Architectural Artifacts
Architecture Deliverables
Building Blocks
<b>Part V - Enterprise Continuum and Tools</b>
Enterprise Continuum
Architecture Partitioning
Architecture Repository
Tools for Architecture Development
<b>Part VI - TOGAF Reference Models</b>
Foundation Architecture: Technical Reference Model
Integrated Information Infrastructure Reference Model
<b>Part VII - Architecture Capability Framework</b>
Architecture Board
Architecture Compliance
Architecture Contracts
Architecture Governance
Architecture Maturity Models
Architecture Skills Framework

Slide 42 of 68

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## TOGAF 9 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.

Slide 43 of 68

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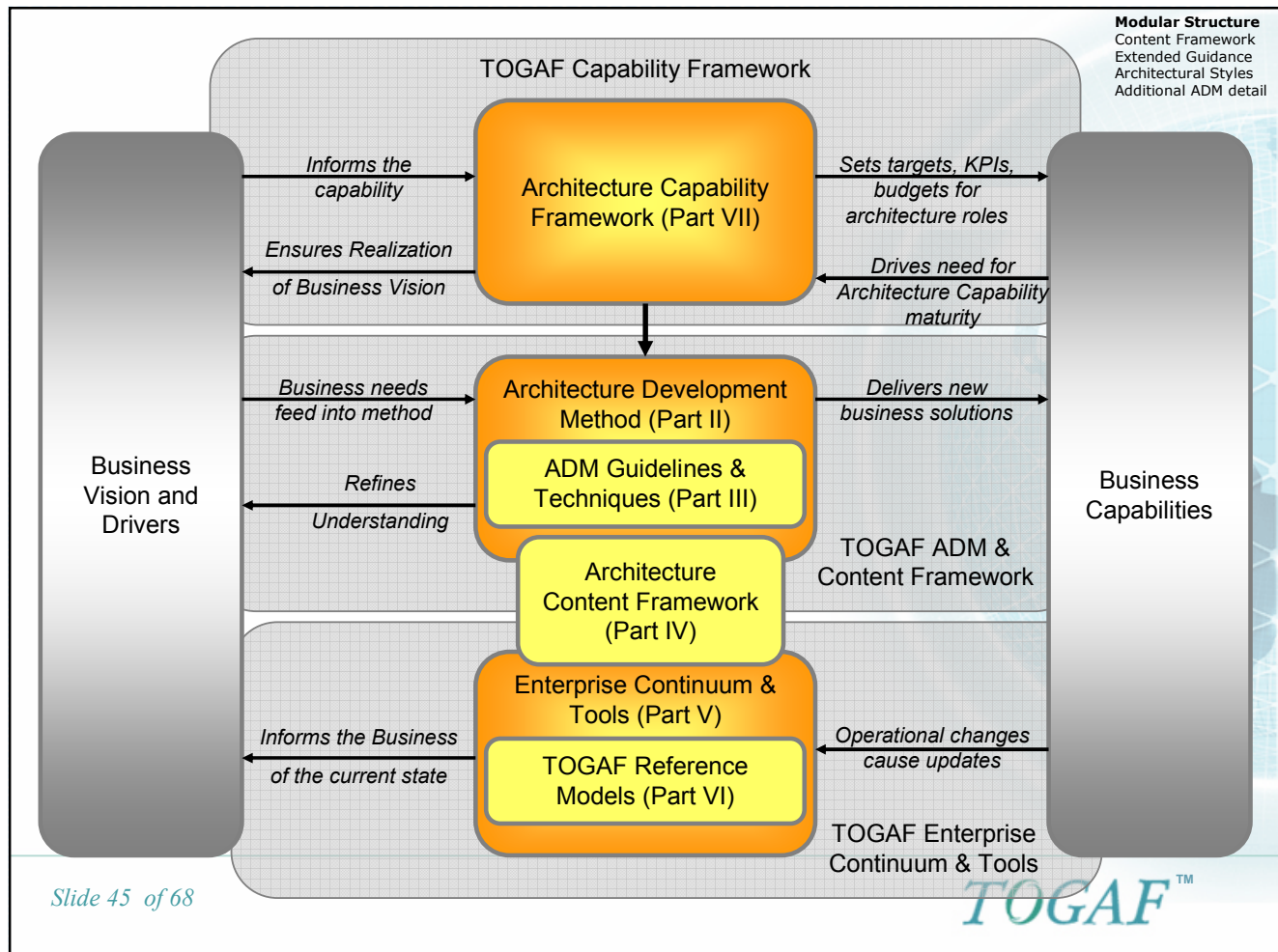
## TOGAF 9 Components

- The Enterprise Continuum
  - A model for structuring a virtual repository and methods for classifying architecture and solution artifacts
- TOGAF Reference Models:
  - The TOGAF **Technical Reference Model** (TRM)
  - The **Integrated Information Infrastructure Model** (III-RM).
- The Architecture Capability Framework
  - A structured definition of the organizations, skills, roles and responsibilities to establish and operate an Enterprise Architecture.

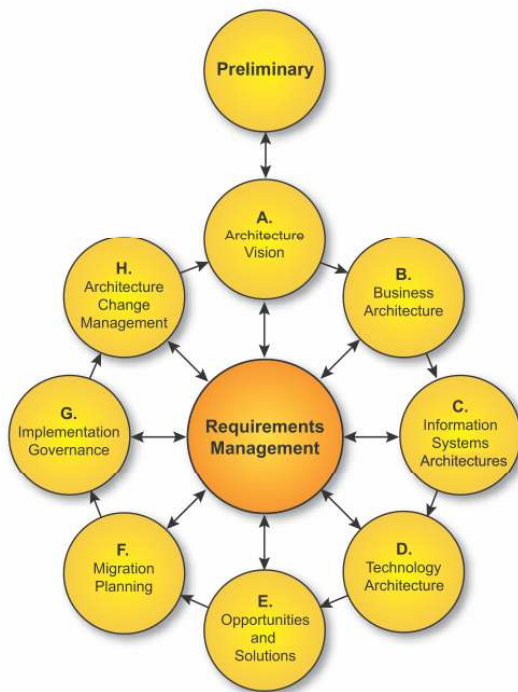
Slide 44 of 68

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## 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

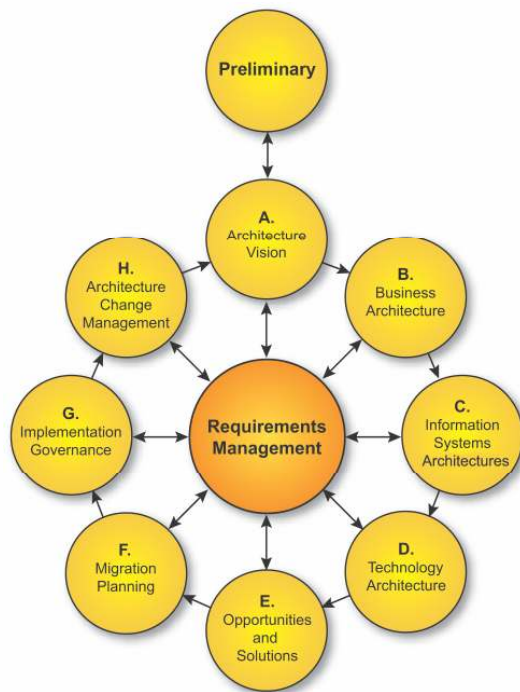
- Value accruing to the enterprise.

Slide 46 of 68

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## ADM – Basic Principles



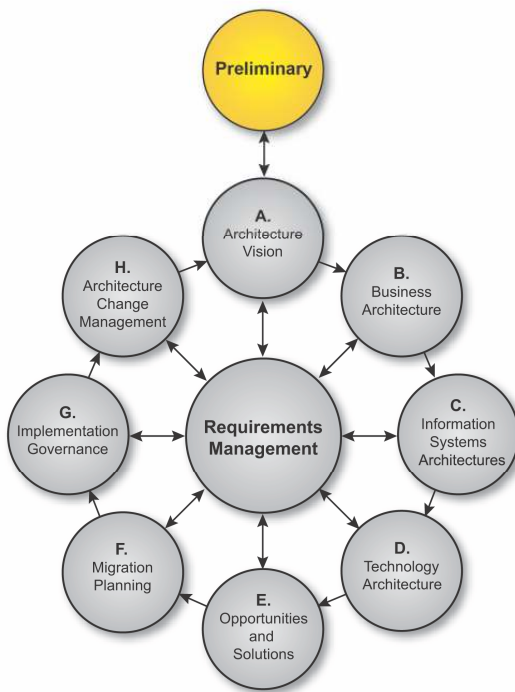
Every phase is validated against and validates the current requirements of the business

Slide 47 of 68

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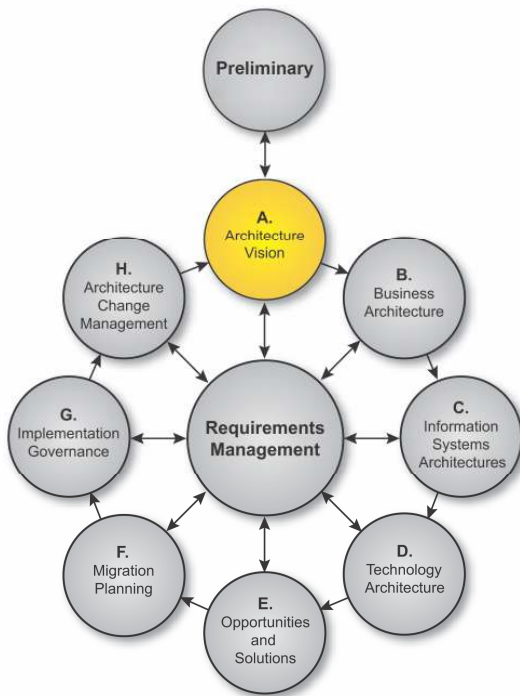
## Preliminary Phase



- This phase prepares the organisation for undertaking successful enterprise architecture projects
  - Understand business environment
  - High level management commitment
  - Agreement on scope
  - Establish principles
  - Establish governance structure
  - Agree method to be adopted



## Phase A Architecture Vision

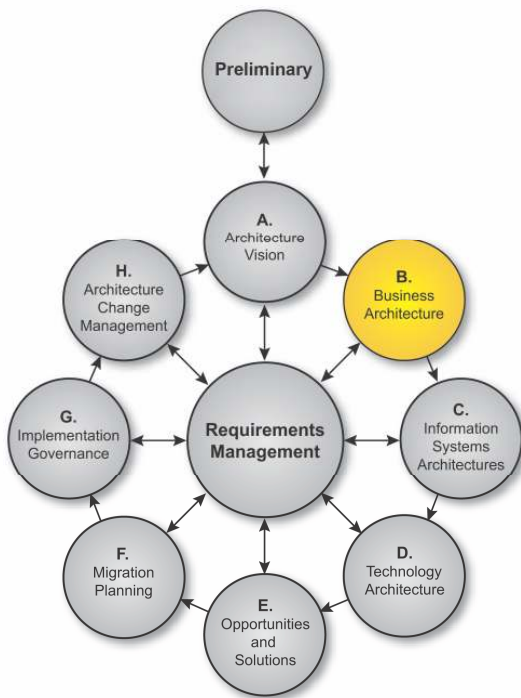


- Initiates one iteration of the architecture process
  - Sets scope, constraints, expectations
  - Required at the start of every architecture cycle
- Create the Architecture Vision
- Validates business context
- Creates Statement of Architecture work

Slide 49 of 68

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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

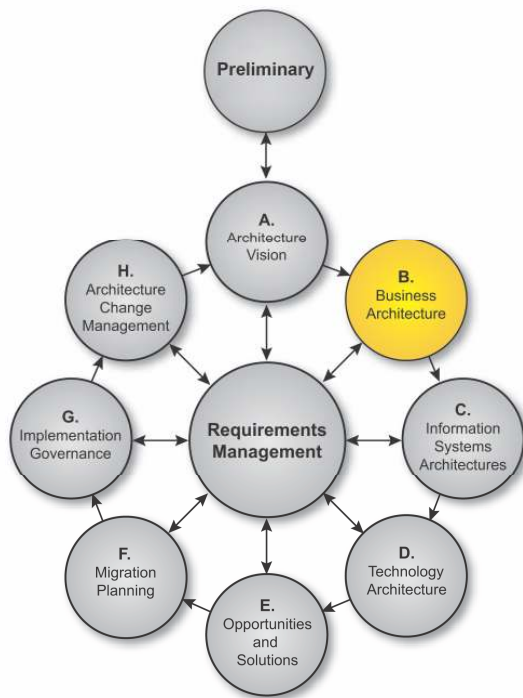
Slide 50 of 68

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## Business Architecture - Contents



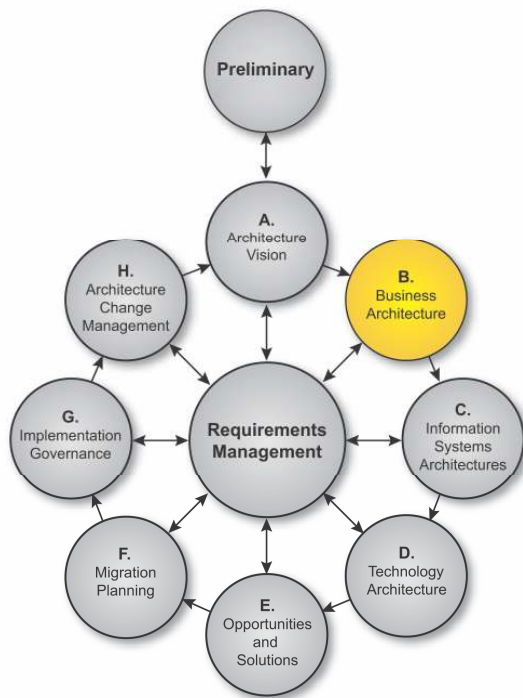
- Organization structure
- Business goals and objectives
- Business functions
- Business Services
- Business processes
- Business roles
- Correlation of organization and functions.

Slide 51 of 68

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## Business Architecture - Steps



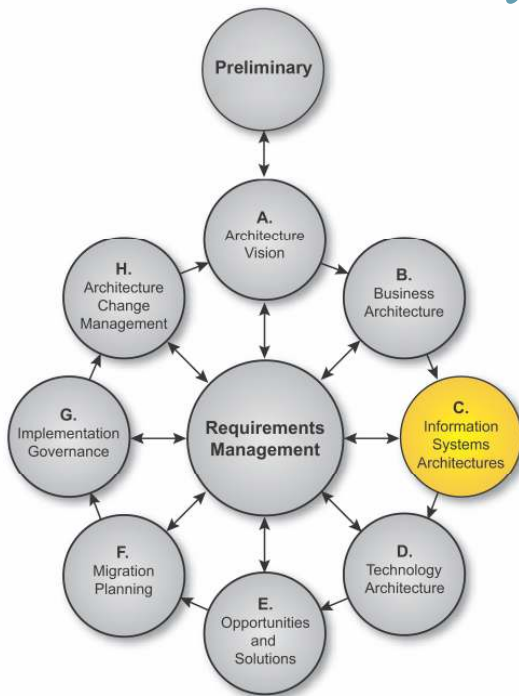
1. Select reference models, viewpoints and tools
2. Define Baseline Architecture Description
3. Define Target Architecture Description
4. Perform gap analysis
5. Define roadmap components
6. Conduct formal stakeholder review
7. Finalize the Architecture
8. Create Architecture Definition Document

Slide 52 of 68

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## Phase C Information Systems Architectures



- The fundamental organization of an IT system, embodied in
  - The major types of information and application systems that process them
  - 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

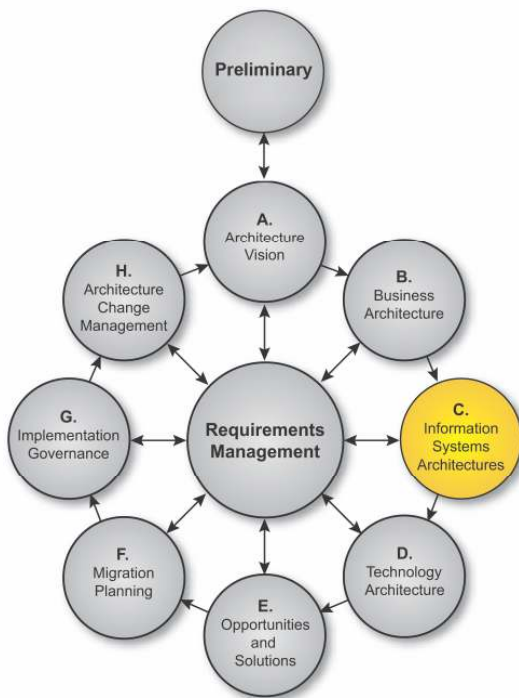
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Slide 53 of 68

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## Data or Applications first ?

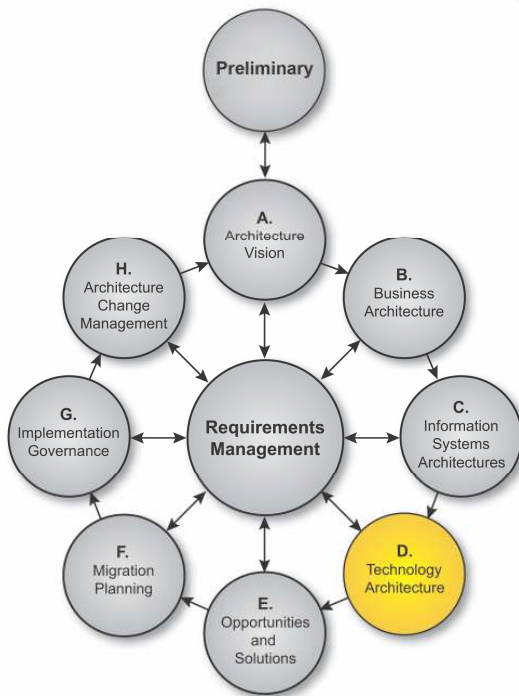


- It is usually necessary to address both
  - Not always the case, depending on project scope and constraints
- May be developed in either order, or in parallel
  - Theory suggests Data Architecture comes first
  - Practical considerations may mean that starting with Application Systems may be more efficient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

Slide 54 of 68

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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

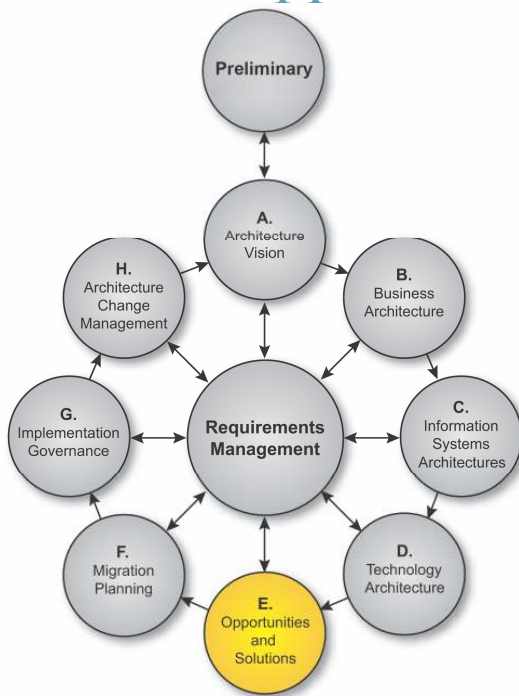
Slide 55 of 68

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## Phase E Opportunities and Solutions



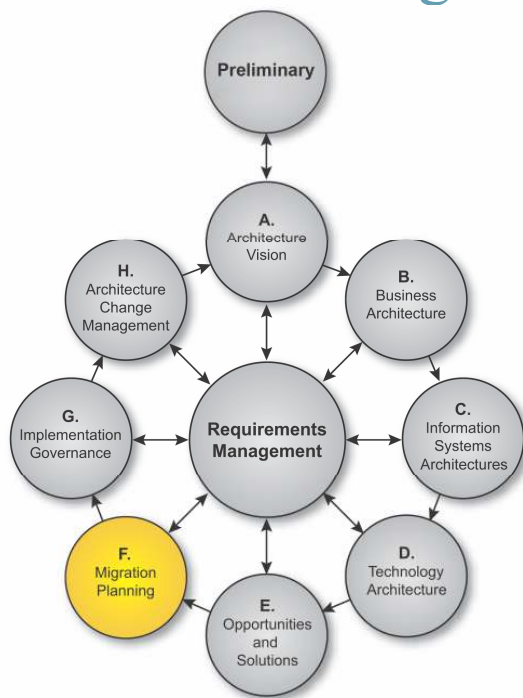
- Perform initial implementation planning
- Identify the major implementation projects
- Group projects into Transition Architectures
- Decide on approach
  - Make v Buy v Re-Use
  - Outsource
  - COTS
  - Open Source
- Assess priorities
- Identify dependencies

Slide 56 of 68

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## Phase F Migration Planning



- For projects identified in Phase E perform
  - Cost/benefit analysis
  - Risk assessment
- Develop a detailed Implementation and Migration Plan

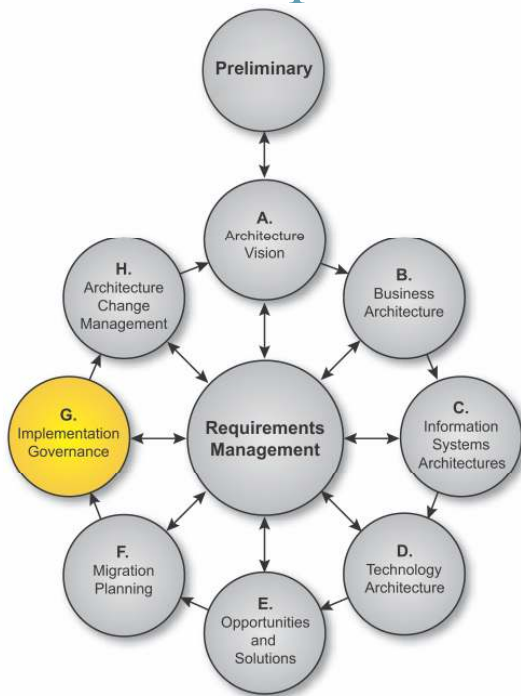
Slide 57 of 68

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## Phase G Implementation Governance

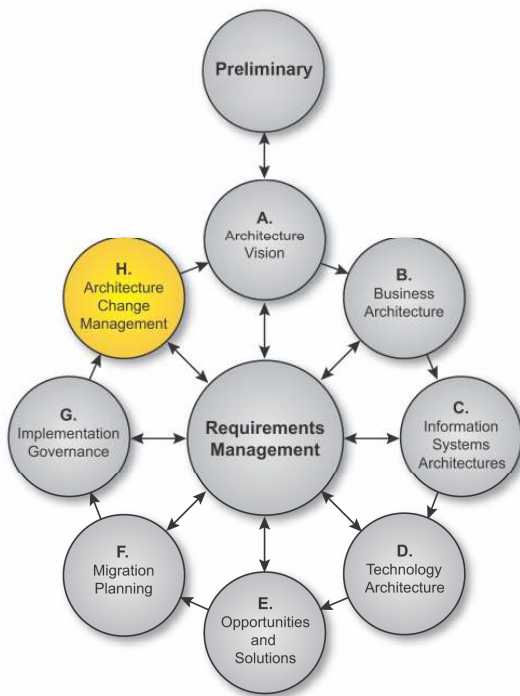


- Provide architectural oversight for the implementation.
- Defines architecture constraints on implementation projects
- Architecture contract
- Monitors implementation work for conformance
- Produce a *Business Value Realization*.

Slide 58 of 68

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## Phase H Architecture Change Management



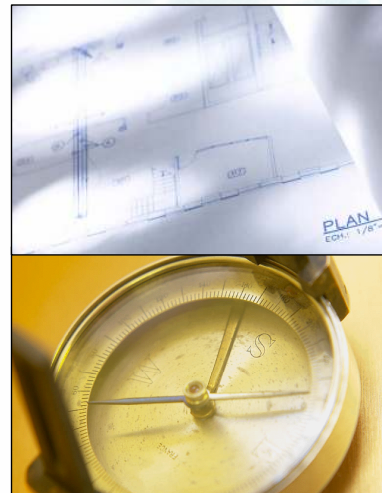
- Provide continual monitoring and a change management process
- Ensures that changes to the architecture are managed in a cohesive and architected way
- Establishes and supports the Enterprise Architecture to provide flexibility to evolve rapidly in response to changes in the technology or business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

Slide 59 of 68

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## Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
- TOGAF 9
- **TOGAF 9 Certification**
- Summary



Slide 60 of 68

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## TOGAF Certification

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

Slide 61 of 68

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## TOGAF Foundation Target Audience

- Individuals who require a basic understanding of TOGAF 9
- 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 TOGAF 9
- Architects who want to achieve Level 2 certification in a stepwise approach.

*Slide 62 of 68*

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## TOGAF Certified Target Audience

- Individuals who require a deeper understanding of TOGAF 9;
- 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 TOGAF 9 into an architecture practice;
- Architects who want to achieve a recognized qualification to demonstrate their detailed knowledge of TOGAF 9.

*Slide 63 of 68*

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## Some Figures about TOGAF

- Developed by 300+ 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 7500 certified
- Supported by Architecture Tools

*Slide 64 of 68*

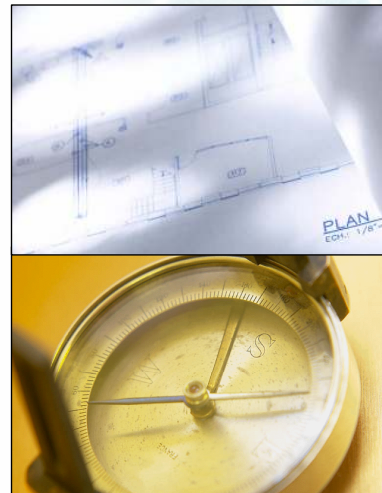
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## Agenda

- The Open Group
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Slide 65 of 68

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## TOGAF 9 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

Slide 66 of 68

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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 9 on-line
  - <http://www.opengroup.org/architecture/togaf9-doc/arch/>
- TOGAF Version 9 licensing and downloads
  - <http://www.opengroup.org/togaf/>

*Slide 67 of 68*

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