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

Agenda

- The Open Group
- The Architecture Forum
- Why Enterprise Architecture
- Why a Framework
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About The Open Group

- Global Operation
- Cross-Industry
- Vendor Neutral
- Technology Neutral
- Brings the key constituencies together in an open process
- San Francisco, Boston, UK, Tokyo
- Regional chapters
- 50+ staff
- Industry Consortium
- Not-for-profit operations
- Established >20 years
- ~250 member organizations
- Operates the industry’s premier certification service

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

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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Architecture Forum – Vision

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

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
Architecture Types

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

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
Pressure to develop Enterprise Architecture

- Laws and regulations
  - 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

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
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.

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
Enterprise Architecture Development Method

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TOGAF Development

- 1994: Requirement
- 1995: TOGAF Version 1
- 1996: TOGAF Version 2
- 1997: TOGAF Version 3
- 1998: TOGAF Version 4
- 1999: TOGAF Version 5
- 2000: TOGAF Version 6
- 2001: TOGAF Version 7
- 2002: TOGAF Version 8
- 2003: TOGAF Version 8.1
- 2006: TOGAF Version 8.1.1

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
- The Interoperable Enterprise Business Scenario first published
- First TOGAF Certification Program Launched
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.

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.
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
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.

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
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

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
Business Architecture - Contents

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

Business Architecture - Steps

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

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
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

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
Phase F
Migration Planning

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

Phase G
Implementation Governance

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

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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
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

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/