Open Architecture Methods: TOGAF
(The Open Group Architecture Framework)

A Presentation to the Real-Time and Embedded Systems Forum, Boston, 23rd July 2003
Agenda

- The Architecture Forum
- TOGAF
  - background
  - components
- Summary
Architecture Forum – Vision and Achievements

TOGAF “Enterprise Edition”
TOGAF “Technical Edition”

TOGAF Training Certification
TOGAF Practitioner Certification
TOGAF Prof. Svcs. Certification

TOGAF Tool Support Certification

25 July 2003
TOGAF Origins

- A **customer** initiative
- A framework, not an architecture
  - A framework for developing architectures to meet different business needs
  - **Not** a “one-size-fits-all” architecture
- Originally based on TAFIM (U.S. DoD)
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)
- 1999: TOGAF Version 5 → Business Scenarios (architecture requirements)
- 2001: TOGAF Version 7 → Architecture Principles; Compliance Reviews
- 2002: TOGAF Version 8 → Extension to Enterprise Architecture
TOGAF Scope

- TOGAF covers the development of four related types of architecture:
  - Business architecture
  - Data or information architecture
  - Application architecture
  - Technology architecture

- TOGAF 7 “Technical Edition”
- TOGAF 8 “Enterprise Edition”
TOGAF Version 8 (“Enterprise Edition”)  

- An effective, industry standard framework and method for enterprise architecture.  
- Complementary to, not competing with, other enterprise frameworks  
  - Use in conjunction with frameworks having defined deliverables more specific to particular sectors.  
- “Demystifies” architecture development  
- Emphasizes business goals as architecture drivers  
- A framework and method for achieving the “Boundaryless Information Flow” vision
TOGAF Structure and Components

- Architecture Development Method (ADM)
- Reference Architectures
  - Foundation Architecture
    - Technical Reference Model
    - Standards Information Base
  - Boundaryless Information Flow Reference Model (TOGAF Version 8)
  - Enterprise Continuum (reference architecture “framework”)
- Resource Base
TOGAF ADM Overview

- An open, industry consensus method for IT architecture
- Developing an organization-specific architecture to address business needs
- Architecture views to ensure that complex requirements are adequately addressed
- Practical, experience based guidance
- Adaptable to specific needs of a project
“Enterprise” ADM – Key Points

- 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.
Foundation Architecture: Technical Reference Model

- Associated with detailed taxonomy of services
  - defines scope of each service category
- Identifies system-wide capabilities or “qualities”; e.g.:
  - Security
  - Manageability
Foundation Architecture: Standards Information Base (SIB)

- A database of open industry standards
  - The complete set of Open Group endorsed standards
  - Content determined by Open Group consensus process
- Structured according to TOGAF Technical Reference Model taxonomy
- Available for public web access
  - [http://www.db.opengroup.org/sib.htm](http://www.db.opengroup.org/sib.htm)
- Gateway to many linked resources
Boundaryless Information Flow Reference Model

- A model of the major component categories for developing, managing, and operating an integrated information infrastructure.
- A model of a set of applications that sit on top of an application platform.
- An expanded subset of the TOGAF Technical Reference Model, using different orientation.
Boundaryless Information Flow Reference Model – Detailed Model

**Application Platform**

- **Web Portal**
  - Streaming audio / video

- **Information Consumer Applications**
  - Information Access
  - Mail
  - Desktop Video Conference
  - Phone / Fax

- **Development Tools**
  - Business modeling tools
  - Design tools
  - Construction tools
  - Languages and Libraries

- **Brokering Applications**
  - Information Brokers
  - Application Integrators

- **Management Utilities**
  - Monitors
  - Executory Utilities
  - Copy Managers

**Qualities**

- **Security**
  - Digital Signature
  - Intrusion Detection
  - Key Management
  - Firewall
  - Encryption
  - AAAC
  - SSO

- **Mobility**
  - Presentation
  - Transformation
  - Browser services
  - Portal and personalization
  - Meta indices

- **Performance**
  - Messaging/Event Brokering
  - Process/Workflow Control

- **Qualities**
  - Application Messaging
  - Application to application communications services
  - Enterprise Appl Integration

- **Manageability**
  - Info Format
  - eForm services
  - Instant messaging services
  - Information Access
  - Transformation Mapping
  - Query distribution
  - Aggregation
  - Search
  - File services
  - Web services
The “Enterprise Continuum”

Architecture Continuum

Foundation Architectures

Common Systems Architectures

Industry Architectures

Organisation Architectures

Guides & Supports

Products & Services

Systems Solutions

Industry Solutions

Organisation Solutions

Solutions Continuum
Resource Base

- Resources available in applying the TOGAF Architecture Development Method; e.g.
  - Architecture Compliance Reviews
  - Architecture Principles
  - Architecture Views
  - Architecture Tool evaluation criteria
  - Business Scenarios (requirements method)
  - Case Studies
  - Comparisons with other Frameworks
  - IT Governance Strategies
  - Mapping to Zachman Framework
For More Information . . .

- The Architecture Forum:
  - [http://www.opengroup.org/architecture/](http://www.opengroup.org/architecture/)

- Viewing TOGAF on-line:
  - TOGAF Version 8:
    - [http://www.opengroup.org/architecture/togaf8-doc/arch/](http://www.opengroup.org/architecture/togaf8-doc/arch/)
  - TOGAF Version 7:
    - [http://www.opengroup.org/architecture/togaf7-doc/arch/](http://www.opengroup.org/architecture/togaf7-doc/arch/)

- TOGAF licensing and downloads:
  - TOGAF Version 8:
    - [http://www.opengroup.org/architecture/togaf8/index8.htm](http://www.opengroup.org/architecture/togaf8/index8.htm)
  - TOGAF Version 7: