The Open Group Architecture Framework (TOGAF)

John Spencer, Director – Architecture Forum

Boston, July 24th 2002
Agenda

- The Architecture Forum
- TOGAF background
- TOGAF components
- Plans for the Future
- Summary
Architecture Forum - Stakeholders

- **Customer Architects**: reduced time, cost, risk
  - procuring effective IT architecture tools
  - developing an IT architecture
  - procuring products to implement an IT architecture

- **Tools Vendors**: bigger market, bigger market share
  - supporting open methods for architecture

- **IT Solution Vendors**: greater cost-efficiency
  - reduced cost of bidding, greater share of procurements

- **Integrators**: greater cost-efficiency, better service
  - better service delivery to clients
  - more effective use / re-use of own architecture assets

- **Academic / Research Organizations**: funding support
  - demonstrated relevance to market, route to standardization
  - “technology transfer” important in bids for funding
Membership – 1st July 2002

48 members:

- Arthur Andersen Business Consulting (US)
- BMC Software Inc. (US)
- Boeing Corporation (US)
- CC and C Solutions (Australia)
- Centre For Open Systems (Australia)
- ChiSurf (Hong Kong)
- Compaq (US)
- Computacentre (UK)
- Computas (Norway)
- Computer Associates (US)
- Conclusive Logic (US)
- Department of Defense / DISA (US)
- Department of Works and Pensions (UK)
- Desktop Management Task Force (US)
- Frietuna Consultants (UK)
- Fujitsu (Japan)
- Hewlett-Packard (US)
- Hitachi (Japan)
- IBM (US)
- Innenministerium NordRhein-Westfalen (Ger)
- Jet Propulsion Labs (US)
- Lockheed Martin (US)
- Ministry of Defence (UK)
- Motorola (US)
- Mitre Corporation (US)
- Monash University (Australia)
- NASA Goddard Space Flight Center (US)
- National Computerization Agency (Korea)
- NATO C3 Agency (Belgium)
- NEC (Japan)
- NeTraverse, Inc. (US)
- Nexor, Inc. (US)
- Open GIS Consortium, Inc. (US)
- PASS Network Consulting (Germany)
- POSC (US)
- Predictive Systems AG (Germany)
- ReGIS (Japan)
- QA Consulting (UK)
- SCO (US)
- Sun Microsystems (US)
- Teamcall (Belgium)
- The Terasoft Group (US)
- Tivoli (US)
- Toyota InfoTechnology Center (Japan)
- TRON Association (Japan)
- Veriserve Corporation (US)
- Visa International (US)
- Westpac Banking Corporation (Australia)
Architecture Forum - Vision

- An effective, open framework and method
- Knowledgeable and professional practitioners
- Adequate “Commercial Off-The-Shelf” tools
TOGAF Origins

- A customer initiative
- A framework, not an architecture
  - Main themes:
    - A single, unifying architectural framework for the IT industry
    - 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

<table>
<thead>
<tr>
<th>Year</th>
<th>Version</th>
<th>Development Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>Requirement</td>
<td>Proof of need</td>
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<tr>
<td>1995</td>
<td>TOGAF Version 1</td>
<td>Proof of concept</td>
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<tr>
<td>1996</td>
<td>TOGAF Version 2</td>
<td>Proof of application</td>
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<tr>
<td>1997</td>
<td>TOGAF Version 3</td>
<td>Relevance to practical architectures (building blocks)</td>
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<tr>
<td>1998</td>
<td>TOGAF Version 4</td>
<td>Enterprise Continuum (TOGAF in context)</td>
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<tr>
<td>1999</td>
<td>TOGAF Version 5</td>
<td>Business Scenarios (architecture requirements)</td>
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<tr>
<td>2000</td>
<td>TOGAF Version 6</td>
<td>Architecture views - IEEE 1471</td>
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<tr>
<td></td>
<td></td>
<td>US DoD work (C4ISR A/F, C2STA)</td>
</tr>
<tr>
<td>2001</td>
<td>TOGAF Version 7</td>
<td>Architecture Principles; Compliance Reviews; TOGAF &amp; enterprise frameworks</td>
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</tbody>
</table>
TOGAF Today

- An industry consensus framework and method
  - Successful customer / vendor collaboration
- Technology and tool neutral
- Proven in practice
  - 8 years continuous development & evolution
  - Used successfully in major projects / procurements around the world
- Publicly available
  - http://www.opengroup.org/public/arch (view on-line)
  - http://www.opengroup.org/architecture/togaf (download)
TOGAF Structure and Components

- Architecture Development Method
- Foundation Architecture
- Resource Base
TOGAF Architecture Development Method (ADM)

- Open, industry consensus method for IT architecture
- Quick-start foundation
- Practical, experience based guidance
- Emphasizes continual validation against requirements
Phases A through C

(Relevant to all architecture developments)

A – Initiation and Framework:
- Use Business Scenarios to define relevant business requirements
- Identify stakeholders / concerns
- Build consensus with partners

B – Baseline Description
- Build description of current system
- Identify “what’s wrong”
- Inventory of re-usable building blocks

C – Target Architecture:
- Identify all needed services
- Multiple views to address stakeholder concerns
Phases A through C

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Identifying Requirements: Business Scenarios

1 - problem

2 - environment

3 - objectives

4 - human actors

5 - computer actors

6 - roles & responsibilities

7 - refine
Phases A through C

(Relevant to all architecture developments)

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Phase C – Target Architecture (Steps)

1 Create baseline
2 Consider views
3 Create arch. model
4 Select services
5 Confirm bus. Objs.
6 Determine criteria
7a Define architecture
7b Identify Arch. Building Blocks
8 Conduct gap analysis
Phases D through G

(Relevant when taking architecture through to implementation)

- **D - Opportunities and Solutions**: evaluate and select major work packages
- **E - Migration Planning**: prioritize work, develop outline plan
- **F - Implementation**: develop full plan and execute
- **G - Architecture Maintenance**: establish procedure for maintenance of new baseline
TOGAF Components

- Architecture Development Method
- Foundation Architecture
  - Technical Reference Model
  - Standards Information Base
  - Enterprise Continuum (Foundation Architecture in context)
- Resource Base
Foundation Architecture: Technical Reference Model (TRM)

- Associated with detailed taxonomy of services
  - defines scope of each service category
- Identifies system-wide capabilities (“qualities”), e.g.:
  - Internationalization
  - Security
  - Management
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
- Regularly updated
- Available for public web access
  - http://www.db.opengroup.org/sib.htm
- Gateway to many linked resources
The Foundation Architecture in Context: The “Enterprise Continuum”

The Open Group

Architecture Continuum

Foundation Architectures

Common Systems Architectures

Industry Architectures

Organization Architectures

Solutions Continuum

Products & Services

Systems Solutions

Industry Solutions

Organization Solutions

guides & supports

guides & supports

guides & supports

guides & supports
Resource Base

- Resources available in applying the TOGAF Architecture Development Method; e.g.
  - Architecture Compliance Reviews
  - Architecture Principles
  - Architecture Views
  - Business Scenarios (requirements method)
  - Case Studies
  - Comparisons with other Frameworks
  - IT Governance Strategies
  - Relating architecture to the enterprise
The Future

- TOGAF “Enterprise Edition”
- IT Architect Certification
- “TOGAF Tools Challenge”
Four kinds of “architecture” commonly accepted as subsets of an overall Enterprise Architecture:
- business architecture
- data/information architecture
- application (systems) architecture
- infrastructure (technology) architecture

TOGAF originally focused on last of these.

Significant value added to TOGAF over the years; e.g.
- Business Scenarios
- “Enterprise Continuum”
- Architecture Views (Software View, Data View, …)

TOGAF's ADM sufficient today for adapting as basis of enterprise architecture framework and method.
Increasing interest in Enterprise Architecture in recent years
  - Applications architecture / enterprise application integration often a key focus
  - Closer to the business => clearer RoI for architecture work

Particularly strong interest in US Federal Government
  - Clinger-Cohen a key driver
  - Many US Federal Agencies doing enterprise architecture

Several enterprise frameworks have significant mindshare:
  - Zachman Framework, Spewak Enterprise Architecture Planning, DoD Framework, FEAF, TEAF, …

Most focus primarily on deliverables, not method
No industry standard method for enterprise architecture
TOGAF “Enterprise Edition” - Goals

- Goals:
  - Make TOGAF an effective, industry standard framework and method for enterprise architecture
  - Preserve existing value as a framework and method for infrastructure / technology architecture
  - Make usable in conjunction with other frameworks whose deliverables may be perceived as more relevant to specific sectors.

- Target for 2002:
  - Overall structure for enterprise architecture that can be filled out in future years
Summary

- **Adopt and use TOGAF**
  - “Demystifies” and speeds up architecture development
  - Enables IT users to build genuinely open systems-based solutions to their business needs.
  - Vendor, tool, and technology neutral
  - Faster response to business needs
  - More flexibility to introduce new technology
  - Faster, simpler, cheaper procurement
  - Faster time-to-market

- **Participate in the Architecture Forum**
  - Worldwide forum for customers, tools vendors, solution vendors, integrators, academic & research organizations
  - Contribute to and access work in progress
  - Network with experienced peers and industry experts
  - Practical information and experience
For More Information . . .

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

- TOGAF Public Document:
  - [http://www.opengroup.org/public/arch](http://www.opengroup.org/public/arch)

- TOGAF Information and Download:
  - [http://www.opengroup.org/architecture/togaf](http://www.opengroup.org/architecture/togaf)

- Standards Information Base (SIB):
  - [http://www.db.opengroup.org/sib.htm](http://www.db.opengroup.org/sib.htm)