

TOGAF Enterprise Edition Version 8.1

A Presentation to the
The Open Group Architecture Briefing
San Diego 4th February 2004

THE *Open* GROUP

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Agenda

- ❑ Goals and Objectives
- ❑ What's New?
 - Requirements Management
 - Governance
 - Architecture Maturity Models
 - Architecture Skills Framework
- ❑ Summary

Goals and Objectives

- Goals:
 - Make TOGAF and its ADM an effective, industry standard framework and method for enterprise architecture
 - Make TOGAF usable in conjunction with other frameworks, whose deliverables are more relevant / specific to particular sectors.

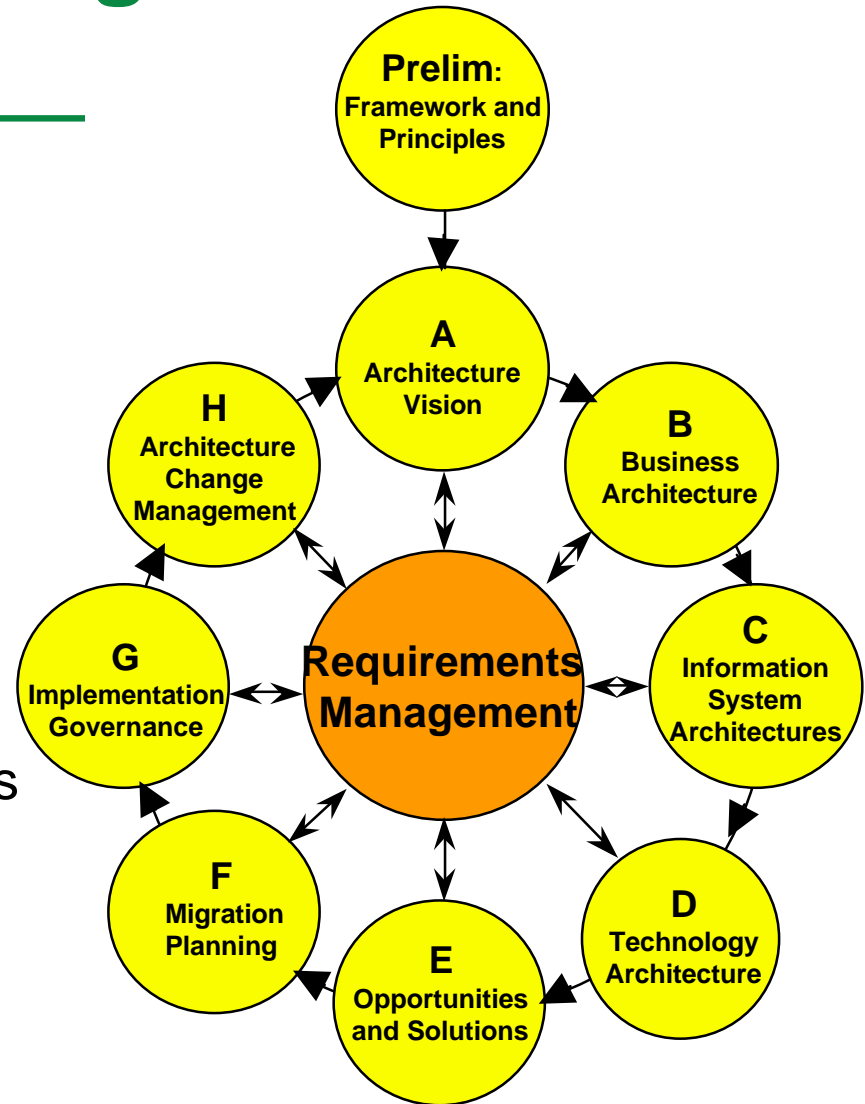
- Objectives for Version 8:
 - Overall structure and core method for enterprise architecture that can be filled out in future years

TOGAF “Enterprise Edition” Version 8.1 – What’s New?

- Requirements management
 - New section in Part II describing the Requirements Management process at center of ADM lifecycle diagram
- Architecture Governance
 - Expanded section in Part IV, now comprising three subsections:
 - Introduction to Architecture Governance
 - Architecture Governance Framework
 - Architecture Governance in Practice
- Architecture Maturity Models
 - New section in Part IV
- TOGAF Architecture Skills Framework
 - New section in Part IV

Requirements Management in the ADM

- ❑ The ADM is continuously driven by Requirements Management.
- ❑ A **dynamic** process whereby requirements for enterprise architecture, and subsequent changes to requirements, are identified, stored, and fed into and out of relevant ADM phase(s).
- ❑ Requirements Management does **not** dispose of, address, or prioritize requirements
 - This done within relevant ADM phase(s).



The Need for Effective Requirements Management

- ❑ Architecture requirements invariably subject to change in practice.
- ❑ Architecture by its very nature deals with uncertainty and change
 - The "grey area" between stakeholder aspirations and what can be provided as a solution.
- ❑ Many drivers and constraints beyond enterprise control - produce unforeseen changes in requirements.
 - Changing market conditions, new legislation, etc.

TOGAF Approach to Requirements Management

- ❑ Many emerging recommendations and processes for Requirements Management.
 - Architecture requirements a niche area.
- ❑ TOGAF does not mandate or recommend any specific Requirements Management process or tool, but simply states what an effective process should achieve.
 - The "requirements for requirements".

Requirements Management Resources

- Business Scenarios
 - An effective technique for discovering and documenting business requirements, and articulating an architecture vision that responds to them.
 - Described in detail in TOGAF Part IV.
- Volere Requirements Specification Template
 - Available from Volere web site (Atlantic Systems Guild)
 - <http://www.volere.co.uk/index.htm>
 - Not designed specifically for architecture requirements
 - Freely available - may be modified or copied for internal use (provided copyright acknowledged).
 - "Waiting Room" concept for future requirements, and/or those designated as beyond scope for current architecture iteration.
 - Helps avoid perception of requirements being discarded
 - Helps manage expectations as to what will be delivered.

Architecture Governance in TOGAF

- New structured section on **Architecture Governance** in Part IV, comprising three subsections:
 - Introduction to Architecture Governance
 - Architecture Governance Framework
 - Architecture Governance in Practice

Introduction to Architecture Governance

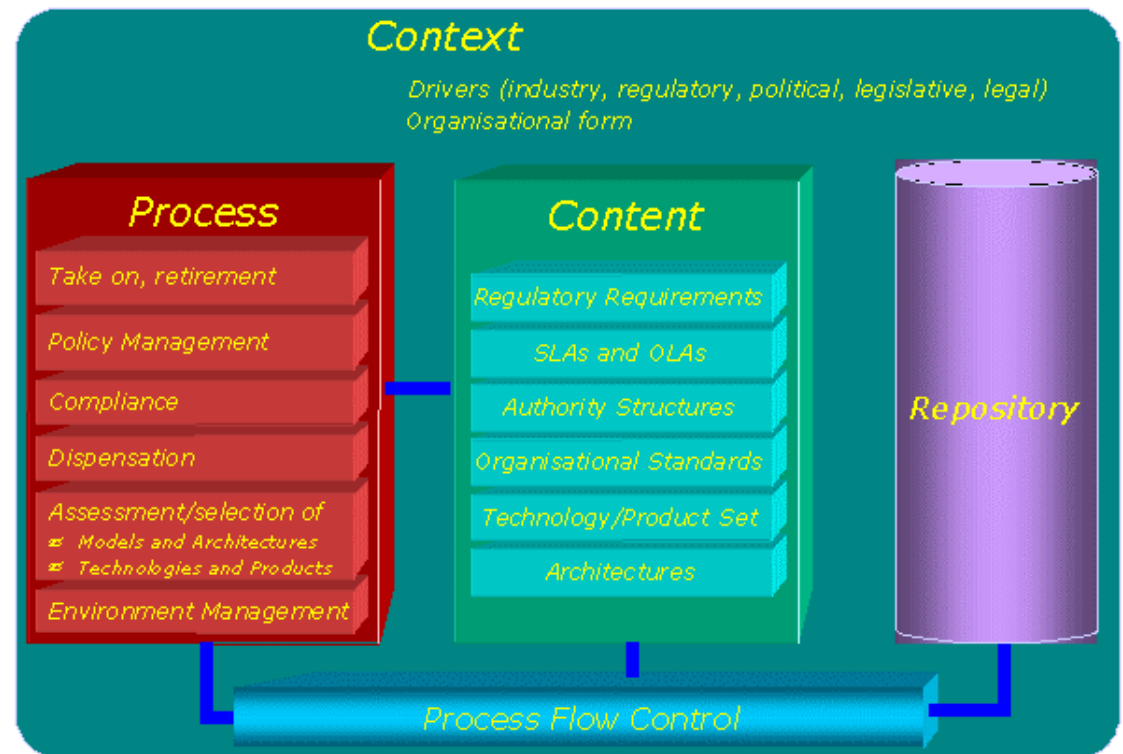
- ❑ Nature of Governance / Levels of Governance
- ❑ Corporate Governance
- ❑ Technology Governance
 - Organizations increasingly dependent on technology for operations, profitability, reputation, brand, value
- ❑ IT Governance
 - Institutionalizing best practices for planning, acquiring, implementing, and monitoring IT performance, to ensure enterprise IT assets support business objectives.
 - IT Governance Framework – COBIT
 - Open standard for control over IT, developed and promoted by IT Governance Institute, published by the Information Systems Audit and Control Foundation (ISACF).
- ❑ Architecture Governance – Overview
 - Practice and orientation whereby enterprise and other architectures are managed / controlled at enterprise-wide level.
 - Architecture Governance as board level responsibility

TOGAF and Architecture Governance

- ❑ ADM Phase G, Implementation Governance, deals with realization of architecture through change projects.
- ❑ Implementation Governance just one aspect of Architecture Governance
 - Architecture Governance covers management and control of all aspects of development and evolution of enterprise architectures and other architectures within the enterprise.
- ❑ Architecture Governance needs to be supported by an Architecture Governance Framework
 - Help identify effective processes whereby business responsibilities associated with architecture governance can be elucidated, communicated, and managed effectively.

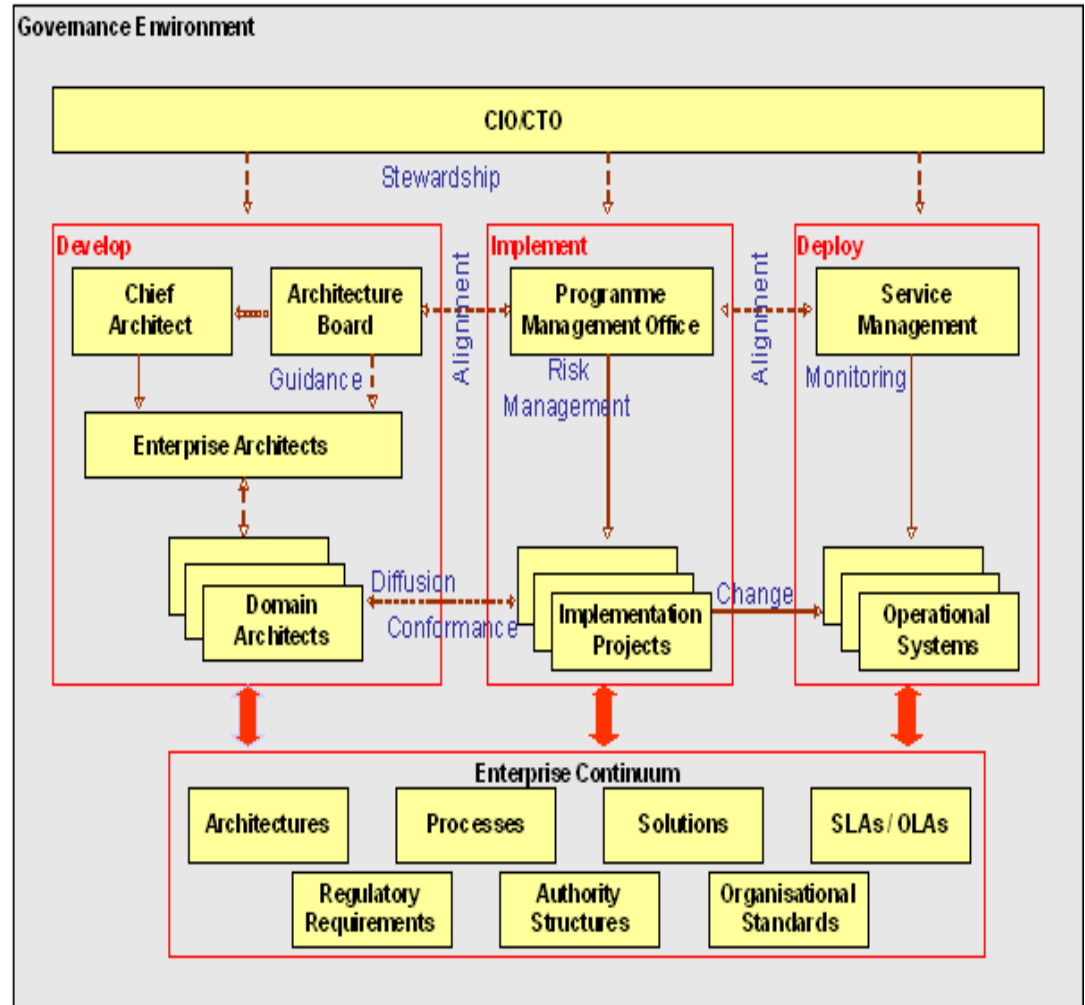
Architecture Governance Framework - Conceptual

- Split between process, content and context is key
 - Allows introduction of new governance material (legal, regulatory, standards-based) without unduly impacting processes.
- “Content-agnostic” approach
 - processes independent of content, implement proven best-practice in governance.



Architecture Governance Framework - Organizational

- Three key areas of architecture management: Develop, Implement, Deploy.
 - **Develop** relates to earlier TOGAF ADM phases
 - **Implement** relates to ADM Phase G, Implementation Governance.
 - **Deploy** relates to operational systems
- Enterprise Continuum manages all content relevant to architectures and Architecture Governance processes throughout their lifecycle.



Architecture Governance Framework in Practice

- Elements of an Effective Architecture Governance Strategy
 - A cross-organizational **Architecture Board** must be established with the backing of top management to oversee implementation of IT governance strategy.
 - A comprehensive set of **Architecture Principles**, to guide, inform and support the organization in fulfilling its mission through use of IT.
 - An **Architecture Compliance strategy** - specific measures (more than just a statement of policy) to ensure compliance with architectures.

Architecture Maturity Models

- ❑ New section introduces Capability Maturity Models and associated techniques into TOGAF
 - A widely used industry standard mature enough to consider for use in relation to Enterprise Architecture.
- ❑ The benefits of Capability Maturity Models well documented for Software and Systems Engineering.
- ❑ Application to Enterprise Architecture a more recent development, stimulated by
 - increasing interest in Enterprise Architecture
 - lack of maturity in the discipline.
- ❑ References:
 - US Department of Commerce ACMM Framework
 - SEI's Capability Maturity Models Integration (CMMI)

TOGAF Architecture Skills Framework

- ❑ Used to plan the target skills and capabilities required by an organization to successfully deliver an Enterprise Architecture, and to determine the training and development needs of individuals.
- ❑ Value in context of Enterprise Architecture – helps address derives problems arising from immaturity of Enterprise Architecture discipline.
- ❑ New section covers:
 - Need for an IT Architecture Skills Framework
 - Goals / Rationale
 - Role and Skill Categories
 - Role and Skill Definitions
 - Generic Role and Skills of the IT Architect

TOGAF Roles

- Development of Enterprise Architecture as described in TOGAF typically involves the following roles:
 - Architecture Board Members
 - Architecture Sponsor
 - IT Architecture Manager
 - IT Architects for:
 - Enterprise Architecture
 - Business Architecture
 - Data Architecture
 - Applications Architecture
 - Technology Architecture
 - Programme and/or Project Managers
 - IT Designer
 - And many others.....

Categories of Skills

- ❑ **Generic Skills:** Leadership, team working, inter-personal skills, etc.
- ❑ **Business Skills and Methods:** Business cases, business process, strategic planning, etc.
- ❑ **Enterprise Architecture Skills:** Modelling, building block design, applications and role design, systems integration
- ❑ **Program or Project Management Skills:** Managing business change, project management methods and tools.
- ❑ **IT General Knowledge Skills:** Brokering applications, asset management, migration planning, SLAs
- ❑ **Technical IT Skills:** Software engineering, security, data interchange, data management
- ❑ **Legal Environment:** Data protection laws, contract law, procurement law, fraud

Proficiency Levels

Level	Achievement	Description
1	Background	Not a required skill though should be able to define and manage skill if required
2	Awareness	Understands the background, issues and implications sufficiently to be able to understand how to proceed further and advise client accordingly.
3	Knowledge	Detailed knowledge of subject area and capable of providing professional advice and guidance. Ability to integrate capability into architecture design
4	Expert	Extensive and substantial practical experience and applied knowledge on the subject.

Example – Enterprise Architecture Skills

IT Architect Roles	Architecture Board Member	Architecture Sponsor	IT Architect Manager	IT Architect Technology	IT Architect Data	IT Architect Application	IT Architect Business	Programme or Project Manager	IT Designer
Enterprise Architecture Skills									
Business Modelling	2	2	4	3	3	4	4	2	2
Business Process design	1	1	4	3	3	4	4	2	2
Role design	2	2	4	3	3	4	4	2	2
Organization Design	2	2	4	3	3	4	4	2	2
Data Design	1	1	3	3	4	3	3	2	3
Application Design	1	1	3	3	3	4	3	2	3
Systems Integration	1	1	4	4	3	3	3	2	2
IT Industry Standards	1	1	4	4	4	4	3	2	3
Services Design	2	2	4	4	3	4	3	2	2
Architecture Principles design	2	2	4	4	4	4	4	2	2
Architecture Views & Viewpoints design	2	2	4	4	4	4	4	2	2
Building Block Design	1	1	4	4	4	4	4	2	3
Solutions Modelling	1	1	4	4	4	4	4	2	3
Benefits Analysis	2	2	4	4	4	4	4	4	2
Business Inter-working	3	3	4	3	3	4	4	3	1
Systems Behaviour	1	1	4	4	4	4	3	3	2
Project Management	1	1	3	3	3	3	3	4	2

TOGAF Version 8 “Enterprise Edition” - Summary

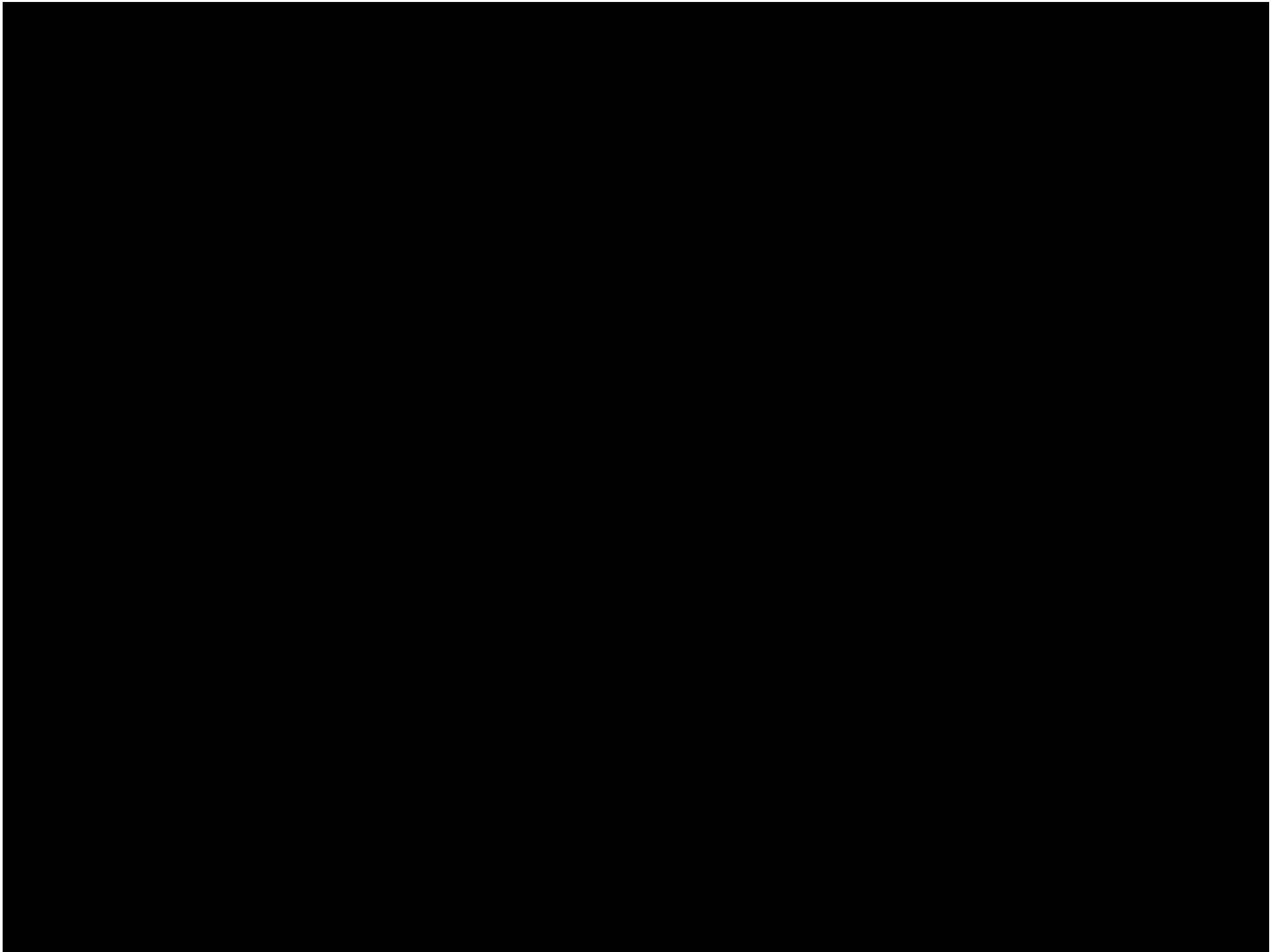
- ❑ An effective, industry standard framework and method for enterprise architecture.
- ❑ Complementary to, not competing with, other enterprise frameworks
 - Use in conjunction with frameworks having defined deliverables more specific to particular sectors.
- ❑ “Demystifies” architecture development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

For More Information . . .

- The Architecture Forum:
 - <http://www.opengroup.org/architecture/>

- TOGAF Version 8.1 on-line:
 - <http://www.opengroup.org/architecture/togaf8-doc/arch/>

- TOGAF Version 8.1 licensing and downloads:
 - <http://www.opengroup.org/architecture/togaf8/index8.htm>



Background - TOGAF Technical Edition (Version 7)

- ❑ 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
- ❑ Underpinned by certification

Background - TOGAF Enterprise Edition (Version 8)

- Covers the four kinds of “architecture” commonly accepted as subsets of an overall Enterprise Architecture:
 - Business Architecture
 - Data / Information Architecture
 - Application (Systems) Architecture
 - Technology Architecture

TOGAF Version 8 Motivations

- ❑ Make TOGAF and its ADM an industry standard enterprise architecture framework and method
 - Increasing interest in Enterprise Architecture
 - Strong interest in US Federal Government
 - Several enterprise frameworks have mindshare:
 - Zachman, Spewak, DoD Framework, FEAF, TEAF, ...
 - Most focus on deliverables, not method
 - No industry standard method for enterprise architecture
- ❑ Enterprise Architecture key enabler for Boundaryless Information Flow
 - Integrated access to integrated information across the enterprise
 - Problem space shared by many Open Group members (and non-members)
 - The vision at the core of The Open Group corporate mission

TOGAF and Requirements Management Tools

- ❑ A large and increasing number of commercial off-the-shelf (COTS) tools available for support of requirements management
- ❑ Not necessarily designed for architecture requirements.
- ❑ Volere web site has useful list of leading requirements tools.

Requirements Management Inputs and Outputs

- Inputs: the requirements-related outputs of each ADM phase.
 - First high-level requirements articulated in Architecture Vision
 - Generated by Business Scenario or analogous technique
 - Each subsequent phase generates detailed requirements specific to that phase, and potentially to others.
- Outputs:
 - Changed Requirements in Requirements Repository
 - Structured Requirements Impact Statement
 - Identifies ADM phases needing to be (re)visited to address the requirements / changes.
 - Includes implications on architecture development (costs, timescales, business metrics, etc.)

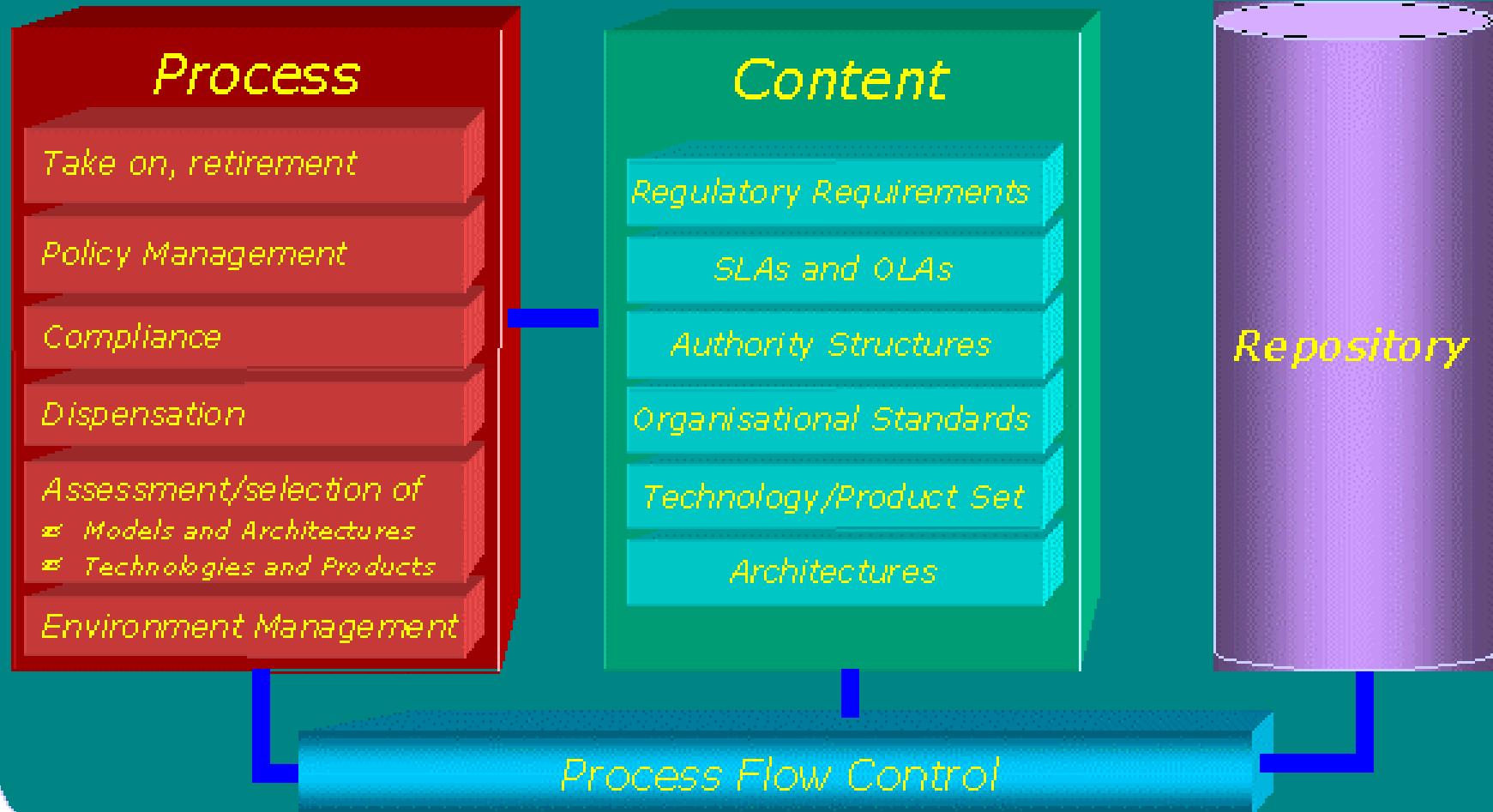
Architecture Governance

Overview

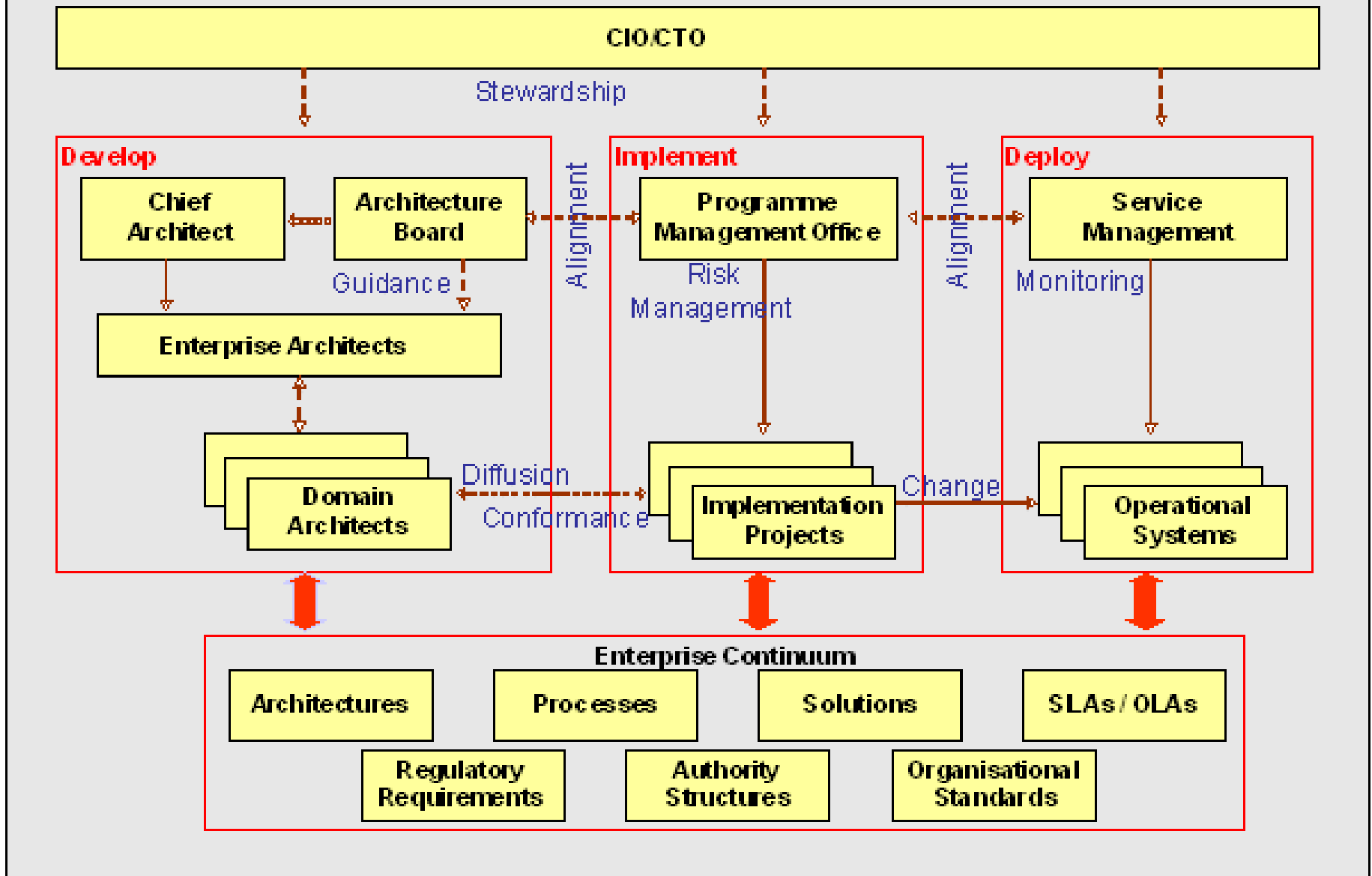
- ❑ Managing enterprise and other architectures at enterprise-wide level.
 - Control over creation and monitoring of architectural components and activities, to ensure effective introduction, implementation, and evolution of architectures within the organization.
 - Ensure compliance with internal and external standards and regulatory obligations.
 - Support effective management of processes within agreed parameters.
 - Ensure accountability to clearly identified stakeholder community, both inside and outside.

Context

*Drivers (industry, regulatory, political, legislative, legal)
Organisational form*



Governance Environment



Example - General Skills

IT Architect Roles	Architecture Board Member	Architecture Sponsor	IT Architect Manager	IT Architect Technology	IT Architect Data	IT Architect Application	IT Architect Business	Programme or Project Manager	IT Designer
Framework Skills Areas									
Generic Skills									
Leadership	4	4	4	3	3	3	3	4	1
Team Work	3	3	4	4	4	4	4	4	2
Inter-personal skills	4	4	4	4	4	4	4	4	2
Oral Communications	3	3	4	4	4	4	4	4	2
Written Communications	3	3	4	4	4	4	4	3	3
Logical Analysis	2	2	4	4	4	4	4	3	3
Stakeholder Management	4	3	4	3	3	3	3	4	2
Risk Management	3	3	4	3	3	3	3	4	1

Skills Frameworks

- ❑ Skills Frameworks provide a view of competency levels required for specific roles, defining:
 - roles within a work area
 - skills required by each role
 - depth of knowledge required to fulfil role successfully
- ❑ Relatively common for defining skills required for consultancy and/or project management.
- ❑ Also widely used by recruitment and search agencies to match candidates and roles.
- ❑ Value derives from ability to rapidly identify skill matches and gaps.
 - Successfully applied, ensure that candidates are fit for the jobs assigned to them.

ACMM Framework Overview

□ Six levels:

0. None
1. Initial
2. Under Development
3. Defined
4. Managed
5. Measured /
Optimizing

□ Nine IT Architecture Characteristics:

- IT Architecture Process
- IT Architecture Development
- Business Linkage
- Senior Management Involvement
- Operating Unit Participation
- Architecture Communication
- IT Security
- Architecture Governance
- IT Investment and Acquisition Strategy

US Department of Commerce ACMM Framework

- ❑ All US Federal Agencies now expected to provide Maturity Models and ratings as part of their IT investment management and audit requirements.
- ❑ US Department of Commerce (DoC) has developed IT Architecture Capability Maturity Model (ACMM) to aid in conducting internal assessments.
 - Provides a framework representing the key components of a productive IT Architecture process.
 - Goal - enhance overall odds for success of IT Architecture by identifying weak areas and providing a defined evolutionary path to improving the overall Architecture process.

Capability Maturity Models Integration (CMMI)

- ❑ One of several capability models that the SEI is involved in developing, expanding, and/or maintaining
- ❑ A response to problems caused by multiplicity of models in recent years
 - How to integrate different models to produce a meaningful metric for overall process maturity.
- ❑ Standard CMMI Appraisal Method for Process Improvement (SCAMPI)
 - The appraisal method associated with CMMI.
 - Used to identify strengths, weaknesses, and ratings relative to CMMI reference models.

Plans for the Future - TOGAF 9+

- ❑ Building on 8.1 additions
- ❑ Boundaryless Information Flow
- ❑ Enterprise Continuum
- ❑ Integrating TOGAF with DSDM: Architecture Implementation
- ❑ Integrating TOGAF with EAIC / TBI: Architecture based Integration
- ❑ Integrating TOGAF with OMG-MDA
- ❑ IT Architect Certification
- ❑ TOGAF Development Lifecycle

- ❑ **ADM Workshop Thursday p.m.**