EA Frameworks & TOGAF
The Open Group Architecture Framework
Vorlesung IT-Unternehmensarchitektur

VL 05; Freitag 23. Mai 2014;
Fachgebiet Software-Architekturen, Prof. Dr. Robert Hirschfeld
Dr. Sabine Buckl; Dipl.-Inform. (univ.) Wolfgang Keller,
Classifying existing approaches and frameworks for EA(M) – from a method perspective

- Integration – unidirectional, bidirectional
- Develop & describe – current, planned, target, principle, question
- Communicate & enact – current, planned, target, principle, question
- Analyze & evaluate – current, planned, target, delta analysis
- Configure to – organizational context, scope & reach
- Adapt to – organizational context, scope & reach

Diagram:

- Organizational Context
- EAM Goals
- EAM Concerns
Classifying existing approaches and frameworks for EA(M) – from a language perspective

- Black-box perspective
- White-box perspective
- Strategies & Projects
- Visions & Goals
- Principles & Standards
- Questions & KPIs
- Configure & Adapt – initially, evolutionary
Revisiting 22 approaches from academia and practice – Results from a method perspective

<table>
<thead>
<tr>
<th>Integration</th>
<th>unidirectional</th>
<th>bidirectional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop &amp; Describe</td>
<td>current</td>
<td>planned</td>
</tr>
<tr>
<td>Communicate &amp; Enact</td>
<td>current</td>
<td>planned</td>
</tr>
<tr>
<td>Analyze &amp; Evaluate</td>
<td>current</td>
<td>planned</td>
</tr>
<tr>
<td>Configure to</td>
<td>organizational context</td>
<td>Scope and reach</td>
</tr>
<tr>
<td>Adapt to</td>
<td>organizational context</td>
<td>Scope and reach</td>
</tr>
</tbody>
</table>

Addressed by at least 10 of the analyzed approaches
Addressed by at most 3 of the analyzed approaches

### Revisiting 22 approaches from academia and practice – Results from a language perspective

<table>
<thead>
<tr>
<th>Approach Type</th>
<th>Business &amp; Organization</th>
<th>Application &amp; Information</th>
<th>Infrastructure &amp; Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Black-box Perspective</strong></td>
<td>business &amp; organization</td>
<td>application &amp; information</td>
<td>infrastructure &amp; data</td>
</tr>
<tr>
<td><strong>White-box Perspective</strong></td>
<td>business &amp; organization</td>
<td>application &amp; information</td>
<td>infrastructure &amp; data</td>
</tr>
<tr>
<td>Strategies &amp; Projects</td>
<td>business &amp; organization</td>
<td>application &amp; information</td>
<td>infrastructure &amp; data</td>
</tr>
<tr>
<td>Visions &amp; Goals</td>
<td>business &amp; organization</td>
<td>application &amp; information</td>
<td>infrastructure &amp; data</td>
</tr>
<tr>
<td>Principles &amp; Standards</td>
<td>business &amp; organization</td>
<td>application &amp; information</td>
<td>infrastructure &amp; data</td>
</tr>
<tr>
<td>Questions &amp; KPIs</td>
<td>business &amp; organization</td>
<td>application &amp; information</td>
<td>infrastructure &amp; data</td>
</tr>
<tr>
<td><strong>Configure &amp; Adapt</strong></td>
<td>initially</td>
<td>evolutionary</td>
<td></td>
</tr>
</tbody>
</table>

Addressed by at least 10 of the analyzed approaches

Addressed by at most 3 of the analyzed approaches

TOGAF in a Nutshell

Contents

• Flavors of Enterprise Architecture
  • Layers of Planning and Layers of Architectures
  • EA Frameworks in the World of IT Frameworks
• TOGAF
  • What’s in it
  • what’s not in it
• Example: TOGAF in a Telco
  • Relation between TOGAF and frameworx
  • Customizing TOGAF for your Telco / Opco
Layers of Enterprise Planning and Execution

- **vision**
  - **strategy**₁
    - **tactics**₁₁
      - **execution**₁₂₁
  - **strategy**₂
    - **tactics**₁₂
      - **execution**₁₂₂
  - **CEO Level**
  - **CxO Level + Senior Mgmnt**
  - **Middle Mgmnt**
  - **Teams, Technicians, …**
Term „Enterprise Architecture“ far from being defined unambiguously

<table>
<thead>
<tr>
<th>Layer / Term</th>
<th>Scope</th>
<th>Important Artifacts</th>
</tr>
</thead>
</table>
| Enterprise Architecture | • Define the Vision and Business Model of an Enterprise  
                         | • Define the Business Strategy of an Enterprise  
                         | • Architect the Organization & Processes  
                         | • Use IT as one of many possible means to implement capabilities | Vision, Mission, Business Strategy, Business Model, Capabilities, Business Processes |
| Enterprise IT Architecture | • Define the IT Strategy how to support value creation using IT  
                         | • Manage IT portfolios  
                         | • Define target architectures  
                         | • Enforce target architectures | IT-Strategy, Application Portfolio, TAM, Strategic IT-Plan, Enterprise Repository, …. |
Term „Enterprise Architecture“ far from being defined unambiguously

<table>
<thead>
<tr>
<th>Layer / Term</th>
<th>Scope</th>
<th>Important Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Scale Solution Architecture</td>
<td>• Design overall architecture for the enterprise application portfolio</td>
<td>Domain models, blueprints, target landscapes, large project architectures,</td>
</tr>
<tr>
<td>Solution architecture</td>
<td>• Design single application systems or clusters thereof</td>
<td>Package diagrams, Architectural views, Use Cases, Process Models, …</td>
</tr>
</tbody>
</table>
Different View on the same matter
Static without the Management Processes
Business Architecture is an emerging Discipline – One Sample Model

Business Architecture

Goals

Facades

Communication
(internal & external)

Processes

Entities of the Business
Business Architecture is an Emerging Discipline – Another Sample Model
### Types of Architectures assigned to Layers

<table>
<thead>
<tr>
<th></th>
<th>Enterprise Architecture</th>
<th>Enterprise IT Architecture</th>
<th>Large Scale Solution Architecture</th>
<th>Solution Architecture</th>
<th>Good Coding Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>vision</strong></td>
<td><img src="image1" alt="Vision" /></td>
<td><img src="image2" alt="Vision" /></td>
<td><img src="image3" alt="Vision" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>strategy</strong></td>
<td><img src="image4" alt="Strategy" /></td>
<td><img src="image5" alt="Strategy" /></td>
<td><img src="image6" alt="Strategy" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>tactics</strong></td>
<td><img src="image7" alt="Tactics" /></td>
<td><img src="image8" alt="Tactics" /></td>
<td><img src="image9" alt="Tactics" /></td>
<td></td>
<td><img src="image10" alt="Tactics" /></td>
</tr>
<tr>
<td><strong>execution</strong></td>
<td><img src="image11" alt="Execution" /></td>
<td><img src="image12" alt="Execution" /></td>
<td><img src="image13" alt="Execution" /></td>
<td></td>
<td><img src="image14" alt="Execution" /></td>
</tr>
</tbody>
</table>

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TOGAF in a Nutshell

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  • Layers of Planning and Layers of Architectures
  • EA Frameworks in the World of IT Frameworks

• TOGAF
  • What’s in it
  • what’s not in it

• TOGAF in a Telco
  • Relation between TOGAF and frameworx
  • Customizing TOGAF for your Telco / Opco
Please observe: There are far more IT Frameworks than just EAM Frameworks

- Please note that there is no such thing as one uniform classification scheme for IT frameworks of EA frameworks
- The scheme on the left side is one of many attempts

Source: Marten Schönherr, Technische Universität Berlin
Please observe: There are far more IT-frameworks than just EAM frameworks

- TOGAF is one of more than 50 EAM Frameworks
  - They provide methods and processes for architecture development and architecture management
- eTOM / SID / TAM are so called Domain Architecture frameworks
  - They provide content for a specific industry
  - They do not provide processes for developing architectures
Please observe: There are far more IT-frameworks than just EAM frameworks

• Apart from that there are more „classes“ of IT frameworks
  • IT Management Frameworks
    – COBIT 5.0 (includes ValIT, RiskIT)
  • IT Operations Frameworks
  • Development Methods
    – RUP, V-Model XT, ....

• People often mix up categories of
What is TOGAF?

The OpenGroup Architecture Framework
Who’s the OpenGroup

The Open Group is a vendor and technology-neutral industry consortium, currently with over four hundred member organizations.[1] It was formed in 1996 when X/Open merged with the Open Software Foundation. Services provided include strategy, management, innovation and research, standards, certification, and test development. The Open Group is most famous as the certifying body for the UNIX trademark,[2] and its publication of the Single UNIX Specification technical standard,[3] which extends the POSIX standards and is the official definition of a UNIX system. The Open Group also develops and manages the TOGAF standard, which is an industry standard enterprise architecture framework.[4] The Open Group members include a range of IT buyers and vendors as well as government agencies, for example Capgemini, Fujitsu, Oracle, Hitachi, HP, Orbus Software, IBM, Kingdee, NEC, SAP, US Department of Defense, NASA and others.

Source: wikipedia
Some History of EAM Frameworks

TOGAF 9.1 late 2011
TOGAF in a Nutshell

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What does TOGAF cover

<table>
<thead>
<tr>
<th>Layer / Term</th>
<th>Extent of Coverage by TOGAF</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise Architecture</td>
<td></td>
<td>TOGAF concentrates on IT architecture</td>
</tr>
<tr>
<td>Enterprise IT Architecture</td>
<td></td>
<td>TOGAF covers some Enterprise IT Architecture Topics</td>
</tr>
<tr>
<td>Large Scale Solution Architecture</td>
<td></td>
<td>One of the cores of TOGAF (the ADM (architecture development method) has been explicitly designed for large scale solution architecture</td>
</tr>
<tr>
<td>Solution architecture</td>
<td></td>
<td>Small scale solution architecture needs more artifacts than the ones defined in TOGAF (UML-style artifacts)</td>
</tr>
</tbody>
</table>
## Evolution of TOGAF towards an Enterprise IT Architecture Framework

<table>
<thead>
<tr>
<th>TAFIM</th>
<th>TOGAF 8.1</th>
<th>TOGAF 9.x</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOGAF 1.0</td>
<td>1993, 94</td>
<td></td>
</tr>
<tr>
<td>Continuum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Structure of the TOGAF 9.x Document

Part I: Introduction
- Core Concepts; Definitions;

Part II: ADM (Architecture Development Method)

Part III: ADM Guidelines and Techniques
- Various aspects of EA work like: Iterating the ADM, Security, ...

Part IV: Architecture Content Framework

Part V: Enterprise Continuum and Tools

Part VI: Reference Models

Part VII: Architecture Capability Framework

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TOGAF Architecture Development Method

Figure 5-1 Architecture Development Cycle
Deeper Dive into Sections of ADM
Short Exercise – 20 mins (+10 discussion)

• Please read TOGAF Chapter 8 – Phase B Business Architecture (pages 79 thru 91)

• Please make a guess why your faculty would characterize TOGAF with „WHAT – NOT HOW“

• What does that mean for a tailoring of TOGAF for your organization?

• Have your ideas ready for a 2 min presentation
TOGAF Content Metamodel
Top Level Diagram

Figure 33-3 Content Metamodel Overview

original content from TOGAF 9.1 for demonstration purposes
### 34.5 Content Metamodel Entities

The following table lists and describes the entities within the content metamodel.

<table>
<thead>
<tr>
<th>Metamodel Entity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actor</strong></td>
<td>A person, organization, or system that has a role that initiates or interacts with activities; for example, a sales representative who travels to visit customers. Actors may be internal or external to an organization. In the automotive industry, an original equipment manufacturer would be considered an actor by an automotive dealership that interacts with its supply chain activities.</td>
</tr>
<tr>
<td><strong>Application Component</strong></td>
<td>An encapsulation of application functionality aligned to implementation structure. For example, a purchase request processing application. See also Logical Application Component and Physical Application Component.</td>
</tr>
<tr>
<td><strong>Assumption</strong></td>
<td>A statement of probable fact that has not been fully validated at this stage, due to external constraints. For example, it may be assumed that an existing application will support a certain set of functional requirements, although those requirements may not yet have been individually validated.</td>
</tr>
<tr>
<td><strong>Business Service</strong></td>
<td>Supports business capabilities through an explicitly defined interface and is explicitly governed by an organization.</td>
</tr>
<tr>
<td><strong>Capability</strong></td>
<td>A business-focused outcome that is delivered by the one or more work packages. Using a capability-based approach, change activities can be sequenced and executed in order.</td>
</tr>
</tbody>
</table>
## TOGAF CMM – How „does it feel“

**Relations List**

<table>
<thead>
<tr>
<th>Source Entity</th>
<th>Target Entity</th>
<th>Name</th>
<th>Extension Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>Event</td>
<td>Generates</td>
<td>Process</td>
</tr>
<tr>
<td>Actor</td>
<td>Event</td>
<td>Resolves</td>
<td>Process</td>
</tr>
<tr>
<td>Actor</td>
<td>Function</td>
<td>Interacts with</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Function</td>
<td>Performs</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Location</td>
<td>Operates in</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Actor</td>
<td>Organization Unit</td>
<td>Belongs to</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Process</td>
<td>Participates in</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Role</td>
<td>Performs task in</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Service</td>
<td>Consumes</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Actor</td>
<td>Decomposes</td>
<td>Core</td>
</tr>
<tr>
<td>Actor</td>
<td>Data Entity</td>
<td>Supplies/Consumes</td>
<td>Core</td>
</tr>
<tr>
<td>Capability</td>
<td>Work Package</td>
<td>Is delivered by</td>
<td>Core</td>
</tr>
<tr>
<td>Contract</td>
<td>Service</td>
<td>Governs and Measures</td>
<td>Core</td>
</tr>
<tr>
<td>Contract</td>
<td>Service Quality</td>
<td>Meets</td>
<td>Core</td>
</tr>
</tbody>
</table>
# TOGAF CMM – How „does it feel“

## Attribute List

### 34.6 Content Metamodel Attributes

The following table shows typical attributes for each of the metamodel entities described previously.

<table>
<thead>
<tr>
<th>Metamodel Entity Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Metamodel Entities</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Unique identifier for the architecture entity.</td>
</tr>
<tr>
<td>Name</td>
<td>Brief name of the architecture entity.</td>
</tr>
<tr>
<td>Description</td>
<td>Textual description of the architecture entity.</td>
</tr>
<tr>
<td>Category</td>
<td>User-definable categorization taxonomy for each metamodel entity.</td>
</tr>
<tr>
<td>Source</td>
<td>Location from where the information was collected.</td>
</tr>
<tr>
<td>Owner</td>
<td>Owner of the architecture entity.</td>
</tr>
<tr>
<td>Capability</td>
<td>Business value</td>
</tr>
<tr>
<td></td>
<td>Describes how this capability provides value to the enterprise.</td>
</tr>
<tr>
<td></td>
<td>Lists possible maturity/quality levels for the capability.</td>
</tr>
<tr>
<td>Increment</td>
<td></td>
</tr>
<tr>
<td>Constraint</td>
<td>No additional attributes</td>
</tr>
<tr>
<td></td>
<td>This metamodel entity has no additional attributes.</td>
</tr>
<tr>
<td>Gap</td>
<td>No additional attributes</td>
</tr>
<tr>
<td></td>
<td>This metamodel entity has only basic attributes.</td>
</tr>
</tbody>
</table>
TOGAF „Enterprise Continuum“
At a Heading Level – Tough to Define

The simplest way of thinking of the Enterprise Continuum is as a view of
the repository of all the architecture assets. It can contain architecture
descriptions, models, building blocks, patterns, viewpoints, and other
artifacts — that exist both within the enterprise and in the IT industry at
large, which the enterprise considers to have available for the
development of architectures for the enterprise.

Contents consist of

• Chapter 38: Introduction (2 pages)
• Chapter 39: Enterprise Continuum (12 pages)
• Chapter 40: Architecture Partitioning (6 pages)
• Chapter 41: Architecture Repository (8 pages)
• Chapter 42: Tools for Architecture Development (2 pages)
What else will you find in TOGAF? (and what’s it good for?)

- Reference Models
  (How to name various stuff)
  - Foundation Architecture: Technical Reference Model
  - Integrated Information Infrastructure Reference Model
- Architecture Capability Framework
  (Aspects to set up Architecture Governance)
  - Establishing an Architecture Capability
  - Architecture Board
  - Architecture Compliance
  - Architecture Contracts
  - Architecture Governance
  - Architecture Maturity Models
  - Architecture Skills Frameworks
TOGAF Foundation Architecture
Top Level Diagram
TOGAF Foundation Architecture
Some more Details

Figure 43-2  Detailed Technical Reference Model (Showing Service Categories)

original content from TOGAF 9.1 for demonstration purposes
43.5.7 Operating System Services

Operating system services are responsible for the management of platform resources, including the processor, memory, files, and input and output. They generally shield applications from the implementation details of the machine. Operating system services include:

- **Kernel Operations** provide low-level services necessary to:
  - Create and manage processes and threads of execution
  - Execute programs
  - Define and communicate asynchronous events
  - Define and process system clock operations
  - Implement security features
  - Manage files and directories
  - Control input/output processing to and from peripheral devices

Some kernel services have analogues described in Section 43.5.13, such as concurrency control services.

- **Command Interpreter and Utility** services include mechanisms for services at the operator level, such as:
  - Comparing, printing, and displaying file contents
  - Editing files
  - Searching patterns

original content from TOGAF 9.1 for demonstration purposes.
TOGAF Integrated Information Infrastructure Reference Model - Top Level Diagram

Figure 44-2 TOGAF TRM Orientation Views

original content from TOGAF 9.1 for demonstration purposes
44.3.3.1 Development Tools

The Development Tools component of the model comprises applications that take the form of tools for modeling, designing, and constructing the integrated information infrastructure. Specifically, it includes tools for business, process, and data modeling, as well as the traditional application construction tools that transform the business model into software that automates the business processes revolving around information.

Note that each set of tools will be logically connected through a directory, allowing one tool to be driven by data from another. The following sections describe the requirements for components of Development Tools. The tool set also includes a repository.

Business Modeling Tools

This category covers tools for the modeling of business rules and business processes. Business modeling describes and documents the business in a comprehensive knowledge base. It establishes a consensus among general management of the business organization, processes, information requirements, and the current environment of the business. Perhaps most importantly, this understanding is documented in a common, business-oriented format to be utilized for subsequent enhancement.

original content from TOGAF 9.1 for demonstration purposes
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What you need to **MANAGE**
Enterprise IT Architecture

- **As-is State**
- **Processes**
- **Management Process Patterns**
- **Target State**
- **Goal Patterns**

- Business Requirements
- Way to Target
- Views and Information Models
- EAM Tools
- Cross Cutting Requirements
- Security, Compliance, Risk Management

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What you need to **MANAGE**
Enterprise IT Architecture
A E(IT)AM Process Map

Cross Cutting Tasks
- Modeling
- Set Standards
- Run EA Tool

Strategic Tasks
- Develop IT-Strategy
- Manage IT Portfolios
- Develop Strategic Plans

Operational Tasks a.k.a Architecture Governance
- Monitor Project Portfolio
- Accompany Projects
- IT Project Process
A E(IT)AM Process Map

Operational Tasks
- Monitor Project Portfolio
- Accompany IT Projects
- Architecture Governance
- IT Project Process

Crosscutting Tasks
- Content Metamodel
- Reference Models

Strategic Tasks
- Develop IT-Strategy
- Manage IT Portfolios
- Develop Strategic Plans

Modeling
- Set Standards
- Run EA Tool

a.k.a Architecture Governance

Architecture Development Method
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We need to have a look at the possible relations between the TMFs 4 frameworx and TOGAF

**FRAMEWORK COMPONENTS**

Frameworx enables a service oriented, highly automated and efficient approach to running a service provider’s business through the following components:

- Business Process Framework
- Information Framework
- Application Framework
- Integration Framework

**The Business Process Framework**

Efficient, clear and effective business processes are critical to delivering innovative services quickly, at the least possible cost. The Business Process Framework provides a comprehensive, industry agreed, multi-layered view of the key business processes a service provider requires to run their business. Aligned to UML and supported by off-the-shelf tools, the Business Process Framework provides:

- A comprehensive, multi-layered catalog of the business processes required to run a service provider business
- Guidelines and standard process flows ensuring your processes are efficient and effective across the enterprise
- Business-to-Business (B2B) processes giving you standardized processes across a value-chain of partners

**The Information Framework**

End-to-end service management requires a consistent use of data across the enterprise. The Information Framework provides a comprehensive, industry agreed definition for information that flows through the enterprise and between service providers and their business partners. Supported by off-the-shelf tools, the Information Framework provides a common information model, reducing complexity and allowing for the definition of standardized integration points. The Framework enables business agility through:

- An agreed enterprise information model for end-to-end service management, defined using business-oriented UML models
- An extensible, proven and flexible information model supporting federation, enabling rapid introduction and management of new technologies and services
- A clear, common language between buyer and supplier and business partners

**The Application Framework**

Understanding how your business processes are implemented in your software architecture is paramount to success. This Framework provides a model for grouping processes and their associated information into recognizable applications. It provides a common language and identification system between buyer and supplier for all application areas. When implemented, it gives you:

- A coordinated systems map showing how your business processes are implemented across applications
- Support for enterprise architecture design through understanding of your current systems architecture versus a standardized map
- Support for procurement through a consistent definition of an application, the functions it should perform and the information it requires.
What TMF says about this …

TOGAF
TOGAF 9 is a detailed method and set of resources for developing an Enterprise Architecture. Developed by The Open Group’s Architecture Forum, TOGAF offers a comprehensive, open method for Enterprise Architecture for any enterprise.

Frameworx provides the detailed business process, information and application models built and hardened for service provider businesses for TOGAF’s Architecture Development Method (ADM). Using Frameworx and TOGAF together enables service providers to deploy an Enterprise Architecture specifically designed for a service provider’s business structure and needs.

TM Forum works closely with The Open Group to identify synergies between the two standards, delivering benefits in future versions of each standard. To help with the implementation of TOGAF and Frameworx together, the two organizations have jointly produced a report mapping TOGAF’s Architecture Development Framework to each of the components of Frameworks.

Source: tmforum Frameworx introduction;
TOGAF and TMF frameworks

• .. the Information Framework (aka SID)
• .. the Business Process Framework (aka eTOM)
• .. the Application Framework (aka TAM)
• .. and the Integration Model
What is SID in relation to TOGAF?
Short look at TOGAF Content Metamodel
What is SID in relation to TOGAF? Short look at SID
What is SID in relation to TOGAF? Possible Model Relations …

- Meta Meta Level: TOGAF Content Metamodel
- Meta Level: SID (unchanged)
- Meta Level: SID in your Enterprise (tailored)
- Instance Level: Your Enterprise
TOGAF and TMF framework

- .. the Information Framework (aka SID)
- .. the Business Process Framework (aka eTOM)
- .. the Application Framework (aka TAM)
- .. and the Integration Model
What is eTOM in relation to TOGAF?

- eTOM is a Business Process Framework
  - Set of Reference Business Processes
- eTOM Processes could hence be transformed and stored in a Repository based on a TOGAF Content Metamodel (CMM)
  - First, you need to extend the TOGAF CMM in order to handle process definitions
TOGAF CMM needs to be extended in order to „store“ business process descriptions?
You could the „populate“ your EA repository with eTOM process

<table>
<thead>
<tr>
<th>Meta Level</th>
<th>TOGAF Content Metamodel (enhanced – see above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Processes</td>
<td>eTOM processes (unchanged)</td>
</tr>
<tr>
<td>Your company’s Process Definitions</td>
<td>eTom processes (tailored)</td>
</tr>
<tr>
<td>Your company’s Process Instances</td>
<td>Concrete Process Instances</td>
</tr>
<tr>
<td></td>
<td>e.g. Provisioning of XYZ for customer V</td>
</tr>
</tbody>
</table>
TOGAF and TMF framework

- the Information Framework (aka SID)
- the Business Process Framework (aka eTOM)
- the Application Framework (aka TAM)
- and the Integration Model
Remember the TAM overview

- This is only a piece of TAM (as you know already)
- You could store your applications in the TOGAF applications model part
TOGAF in a Nutshell

Contents

- Flavors of Enterprise Architecture
  - Layers of Planning and Layers of Architectures
  - EA Frameworks in the World of IT Frameworks
- TOGAF
  - What’s in it
  - what’s not in it
- Example: TOGAF in a Telco
  - Relation between TOGAF and frameworx
  - Customizing TOGAF for your Telco / Opco
# How would you customize TOGAF for your Telco / Opco

<table>
<thead>
<tr>
<th>What could be customized</th>
<th>How could it be customized</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM</td>
<td>Analogous to Customizing e.g. a RUP or the V-Modell XT</td>
</tr>
<tr>
<td>TOGAF Content Metamodel</td>
<td>Select the areas of your interest – almost nobody will implement a meta model with hundreds of meta entities</td>
</tr>
<tr>
<td>Architecture Capability Framework</td>
<td>Decide on your specific implementation of Architecture Governance</td>
</tr>
</tbody>
</table>
Customizing the ADM Process

- Simple: You can see the phases of the ADM cycle as checklists and use them without any customizing.
- More sophisticated: You can roll a customized version
  - Remove steps you consider unnecessary
  - Add steps that might be necessary in your organization

Figure 5-1  Architecture Development Cycle
Define (Customize) ADM Artifacts

- You might want to remove or add document types
- You need to define document templates for each document you consider necessary

Source: http://simplicable.com/new/how-to-customize-TOGAF
Customizing the TOGAF Content Metamodel

- Define your areas of interest out of the whole scope of the metamodel
- Choose appropriate metamodel snippets
- Integrate them into a repository
Customizing the Architecture Capability Framework

- Is identical to installing a system of IT Architecture Governance
- Must be consistent with overall IT Governance of your enterprise
- Should be complemented with an appropriate SOA Governance System
Some advice on customizing TOGAF and frameworx …

• Please customize TOGAF and frameworx ONCE for a group the likes of Telekom Austria

• Avoid country specific versions whereever possible