

# TOGAF® Version 9.1

## A Pocket Guide



Andrew Josey et al

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# TOGAF® VERSION 9.1 – A POCKET GUIDE

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# TOGAF® Version 9.1

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**TOGAF® Version 9.1  
A Pocket Guide**

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Comments relating to the material contained in this document may be submitted to:

The Open Group  
Apex Plaza, Forbury Road  
Reading  
Berkshire, RG1 1AX  
United Kingdom

or by electronic mail to: [ogspecs@opengroup.org](mailto:ogspecs@opengroup.org)

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# Contents

|  |           |
|--|-----------|
| Preface  | 9         |
| Trademarks   | 14        |
| About the Authors                                    | 15        |
| Acknowledgements                                     | 18        |
| <b>1 Introduction</b>                                | <b>19</b> |
| 1.1 Introduction to TOGAF                            | 19        |
| 1.2 Structure of the TOGAF Document                  | 20        |
| 1.3 What is Architecture in the Context of TOGAF?    | 21        |
| 1.4 What kinds of Architecture does TOGAF deal with? | 21        |
| 1.5 What does TOGAF Contain?                         | 22        |
| 1.5.1 The Architecture Development Method (ADM)      | 23        |
| 1.5.2 ADM Guidelines and Techniques                  | 23        |
| 1.5.3 Architecture Content Framework                 | 24        |
| 1.5.4 The Enterprise Continuum                       | 24        |
| 1.5.5 TOGAF Reference Models                         | 24        |
| 1.5.6 The Architecture Capability Framework          | 25        |
| <b>2 The Architecture Development Method</b>         | <b>27</b> |
| 2.1 What is the ADM?                                 | 27        |
| 2.2 What are the Phases of the ADM?                  | 28        |
| 2.3 The ADM in Detail                                | 31        |
| 2.3.1 Preliminary Phase                              | 31        |
| 2.3.2 Phase A: Architecture Vision                   | 32        |
| 2.3.3 Phase B: Business Architecture                 | 34        |
| 2.3.4 Phase C: Information Systems Architectures     | 35        |
| 2.3.5 Phase D: Technology Architecture               | 38        |
| 2.3.6 Phase E: Opportunities and Solutions           | 39        |
| 2.3.7 Phase F: Migration Planning                    | 40        |

|          |   |           |
|----------|---|-----------|
| 2.3.8    | Phase G: Implementation Governance                        | 41        |
| 2.3.9    | Phase H: Architecture Change Management                   | 42        |
| 2.3.10   | Requirements Management                                   | 43        |
| 2.4      | Scoping the Architecture Activity                         | 44        |
| <b>3</b> | <b>Key Techniques and Deliverables of the ADM Cycle</b>   | <b>47</b> |
| 3.1      | Tailored Architecture Framework                           | 49        |
| 3.2      | Organizational Model for Enterprise Architecture          | 50        |
| 3.3      | Architecture Principles                                   | 51        |
| 3.3.1    | Developing Architecture Principles                        | 51        |
| 3.3.2    | Defining Architecture Principles                          | 52        |
| 3.3.3    | Qualities of Principles                                   | 53        |
| 3.3.4    | Applying Architecture Principles                          | 54        |
| 3.4      | Business Principles, Business Goals, and Business Drivers | 56        |
| 3.5      | Architecture Repository                                   | 56        |
| 3.6      | Architecture Tools  | 57        |
| 3.7      | Request for Architecture Work                             | 57        |
| 3.8      | Statement of Architecture Work                            | 58        |
| 3.9      | Architecture Vision                                       | 58        |
| 3.10     | Stakeholder Management                                    | 59        |
| 3.10.1   | Steps in the Stakeholder Management Process               | 60        |
| 3.11     | Communications Plan                                       | 62        |
| 3.12     | Business Transformation Readiness Assessment              | 63        |
| 3.13     | Capability Assessment                                     | 63        |
| 3.14     | Risk Management   | 65        |
| 3.15     | Architecture Definition Document                          | 66        |
| 3.15.1   | Business Architecture                                     | 67        |
| 3.15.2   | Information Systems Architectures                         | 68        |
| 3.15.3   | Technology Architecture                                   | 69        |
| 3.16     | Architecture Requirements Specification                   | 69        |
| 3.16.1   | Business Architecture Requirements                        | 70        |
| 3.16.2   | Information Systems Architectures Requirements            | 71        |
| 3.16.3   | Technology Architecture Requirements                      | 71        |

|          |  |           |
|----------|--|-----------|
| 3.16.4   | Interoperability Requirements                            | 71        |
| 3.17     | Architecture Roadmap                                     | 71        |
| 3.18     | Business Scenarios                                       | 73        |
| 3.19     | Gap Analysis   | 74        |
| 3.20     | Architecture Viewpoints                                  | 76        |
| 3.21     | Architecture Views                                       | 78        |
| 3.21.1   | Developing Views in the ADM                              | 79        |
| 3.22     | Architecture Building Blocks                             | 79        |
| 3.23     | Solution Building Blocks                                 | 80        |
| 3.24     | Capability-Based Planning                                | 81        |
| 3.25     | Migration Planning Techniques                            | 82        |
| 3.25.1   | Implementation Factor Assessment and<br>Deduction Matrix | 82        |
| 3.25.2   | Consolidated Gaps, Solutions, and Dependencies Matrix    | 83        |
| 3.25.3   | Architecture Definition Increments Table                 | 83        |
| 3.25.4   | Transition Architecture State Evolution Table            | 84        |
| 3.25.5   | Business Value Assessment Technique                      | 85        |
| 3.26     | Implementation and Migration Plan                        | 86        |
| 3.27     | Transition Architecture                                  | 87        |
| 3.28     | Implementation Governance Model                          | 88        |
| 3.29     | Architecture Contracts                                   | 88        |
| 3.30     | Change Request   | 90        |
| 3.31     | Compliance Assessment                                    | 91        |
| 3.32     | Requirements Impact Assessment                           | 92        |
| <b>4</b> | <b>Guidelines for Adapting the ADM</b>                   | <b>93</b> |
| 4.1      | Introduction   | 93        |
| 4.2      | Applying Iteration to the ADM                            | 95        |
| 4.3      | Applying the ADM across the Architecture Landscape       | 101       |
| 4.4      | Security Architecture and the ADM                        | 102       |
| 4.5      | Using TOGAF to Define and Govern SOAs                    | 104       |
| 4.5.1    | Using TOGAF for SOA                                      | 105       |



|          |  |            |
|----------|--|------------|
| <b>5</b> | <b>Architecture Content Framework</b>                          | <b>107</b> |
| 5.1      | Architecture Content Framework Overview                        | 107        |
| 5.2      | Content Metamodel  | 108        |
| 5.2.1    | Core and Extensions  | 110        |
| 5.2.2    | Catalogs, Matrices, and Diagrams                               | 110        |
| 5.3      | Architectural Artifacts  | 112        |
| 5.4      | Architecture Deliverables                                      | 116        |
| 5.5      | Building Blocks  | 116        |
| <b>6</b> | <b>The Enterprise Continuum</b>                                | <b>119</b> |
| 6.1      | Overview of the Enterprise Continuum                           | 119        |
| 6.1.1    | The Enterprise Continuum and Architecture Re-Use               | 121        |
| 6.1.2    | Using the Enterprise Continuum within the ADM                  | 121        |
| 6.2      | Architecture Partitioning                                      | 122        |
| 6.3      | Architecture Repository  | 123        |
| 6.3.1    | The Enterprise Repository                                      | 125        |
| <b>7</b> | <b>TOGAF Reference Models</b>                                  | <b>127</b> |
| 7.1      | TOGAF Foundation Architecture                                  | 127        |
| 7.1.1    | Technical Reference Model (TRM)                                | 127        |
| 7.2      | Integrated Information Infrastructure Reference Model (III-RM) | 127        |
| <b>8</b> | <b>Architecture Capability Framework</b>                       | <b>129</b> |
| 8.1      | Establishing an Architecture Capability                        | 131        |
| 8.2      | Architecture Governance  | 131        |
| 8.3      | Architecture Board   | 132        |
| 8.4      | Architecture Compliance  | 133        |
| 8.5      | Architecture Skills Framework                                  | 133        |
|          | Appendix A Migration Summary                                   | 137        |
|          | Glossary   | 151        |
|          | Index  | 157        |

# Preface

## **This Document**

This is the Pocket Guide to TOGAF®, an Open Group Standard, Version 9.1. It is intended to help architects focus on the efficient and effective operations of their organization and senior managers understand the basics of TOGAF. It is organized as follows:

- Chapter 1 provides a high-level view of TOGAF, enterprise architecture, and the contents and key concepts of TOGAF.
- Chapter 2 provides an introduction to the Architecture Development Method (ADM), the method that TOGAF provides to develop enterprise architectures.
- Chapter 3 provides an overview of key techniques and deliverables of the ADM cycle.
- Chapter 4 provides an overview of the guidelines for adapting the ADM.
- Chapter 5 provides an introduction to the Architecture Content Framework, a structured metamodel for architectural artifacts.
- Chapter 6 provides an introduction to the Enterprise Continuum, a high-level concept that can be used with the ADM to develop an enterprise architecture.
- Chapter 7 provides an introduction to the TOGAF Reference Models, including the TOGAF Foundation Architecture and the Integrated Information Infrastructure Reference Model (III-RM).
- Chapter 8 provides an introduction to the Architecture Capability Framework, a set of resources provided for establishment and operation of an architecture function within an enterprise.
- Appendix A provides an overview of the differences between TOGAF 9.1 and TOGAF 8.1.1, and also a summary of the changes between TOGAF 9 and 9.1.

The audience for this document is:

- Enterprise architects, business architects, IT architects, data architects, systems architects, solutions architects, and senior managers seeking a first introduction to TOGAF

A prior knowledge of enterprise architecture is not required. After reading this document, the reader seeking further information should refer to the TOGAF documentation<sup>1</sup> available online at [www.opengroup.org/architecture/togaf9-doc/arch](http://www.opengroup.org/architecture/togaf9-doc/arch) and also available as a hardcopy book.

### **About TOGAF Version 9.1**

TOGAF 9.1 is a maintenance update to TOGAF 9, addressing comments raised since the introduction of TOGAF 9 in 2009. It retains the major features and structure of TOGAF 9 including:

**Modular Structure:** TOGAF 9 has a modular structure. The modular structure supports:

- Greater usability – defined purpose for each part; can be used in isolation as a standalone set of guidelines
- Incremental adoption of the TOGAF specification

**Content Framework:** TOGAF 9 includes a content framework to drive greater consistency in the outputs that are created when following the Architecture Development Method (ADM). The TOGAF content framework provides a detailed model of architectural work products.

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<sup>1</sup> TOGAF Version 9.1 (ISBN: 978-90-8753-679-4, G116); refer to [www.opengroup.org/bookstore/catalog/g116.htm](http://www.opengroup.org/bookstore/catalog/g116.htm)

**Extended Guidance:** TOGAF 9 features an extended set of concepts and guidelines to support the establishment of an integrated hierarchy of architectures being developed by teams within larger organizations that operate within an overarching architectural governance model. In particular, the following concepts are introduced:

- **Partitioning:** A number of techniques and considerations on how to partition the various architectures within an enterprise.
- **Architecture Repository:** A logical information model for an Architecture Repository which can be used as an integrated store for all outputs created by executing the ADM.
- **Capability Framework:** A structured definition of the organization, skills, roles, and responsibilities required to operate an effective enterprise architecture capability. TOGAF also provides guidance on a process that can be followed to identify and establish an appropriate architecture capability.

**Architectural Styles:** TOGAF 9, in Part III: ADM Guidelines & Techniques, brings together a set of supporting materials that show in detail how the ADM can be applied to specific situations:

- The varying uses of iteration that are possible within the ADM and when each technique should be applied
- The linkages between the TOGAF ADM and Service Oriented Architecture (SOA)
- The specific considerations required to address security architecture within the ADM
- The various types of architecture development required within an enterprise and how these relate to one another

**Additional ADM Detail:** TOGAF 9 includes additional detailed information over earlier versions of TOGAF for supporting the execution of the ADM. Particular areas of enhancement are:

- The Preliminary phase features extended guidance on establishing an enterprise architecture capability and planning for architecture development.
- The Opportunities & Solutions and Migration Planning phases feature a detailed and robust method for defining and planning enterprise transformation.

### Conventions Used in this Document

The following conventions are used throughout this document in order to help identify important information and avoid confusion over the intended meaning:

- *Ellipsis (...)*

Indicates a continuation; such as an incomplete list of example items, or a continuation from preceding text.

- **Bold**

Used to highlight specific terms.

- *Italics*

Used for emphasis. May also refer to other external documents.

### About The Open Group

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- Capture, understand, and address current and emerging requirements, and establish policies and share best practices

- Facilitate interoperability, develop consensus, and evolve and integrate specifications and open source technologies
- Offer a comprehensive set of services to enhance the operational efficiency of consortia
- Operate the industry's premier certification service

Further information on The Open Group is available at [www.opengroup.org](http://www.opengroup.org).

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# About the Authors

## **Andrew Josey, The Open Group**

Andrew Josey is Director of Standards within The Open Group. He is currently managing the standards process for The Open Group, and has recently led the standards development projects for TOGAF 9 and 9.1, IEEE Std 1003.1-2008 (POSIX), and the core specifications of the Single UNIX Specification, Version 4. Previously, he has led the development and operation of many of The Open Group's certification development projects, including industry-wide certification programs for the UNIX system, the Linux Standard Base, TOGAF, and IEEE POSIX. He is a member of the IEEE, USENIX, UKUUG, and the Association of Enterprise Architects.

## **Professor Rachel Harrison, Oxford Brookes University**

Rachel Harrison is a Professor of Computer Science in the Department of Computing and Communication Technologies at Oxford Brookes University. Previously she was Professor of Computer Science, Head of the Department of Computer Science, and Director of Research for the School of Systems Engineering at the University of Reading. Her research interests include systems evolution, software metrics, requirements engineering, software architecture, usability and software testing. She has published over 100 refereed papers and consulted widely with industry, working with organizations such as IBM, the DERA, Philips Research Labs, Praxis Critical Systems, and The Open Group. She is Editor-in-Chief of the Software Quality Journal, published by Springer. She is the author of the study guides for the TOGAF 9 certification program.

## **Paul Homan, IBM**

Paul Homan is a Technology Strategy Consultant within IBM's Global Business Services. He is a Certified Master IT Architect, specializing in enterprise architecture with over 20 years' experience in IT. Highly



passionate and practically experienced in architecture, strategy, design authority, and governance areas, Paul is particularly interested in enterprise architecture leadership, requirements management, and business architecture. He joined IBM from end-user environments, having worked as Chief Architect in both the UK Post Office and Royal Mail. He has not only established enterprise architecture practices, but has also lived with the results! Since joining IBM, Paul has dedicated his time to both advising clients on architecture capability as well as actively leading Architecture efforts on large client programmes. Paul has also been a leader in building IBM's capability around Enterprise Architecture and TOGAF.

### **Matthew F. Rouse, Hewlett-Packard**

Matthew Rouse is an Enterprise Architect at HP Enterprise Services. Matthew has over 20 years' IS/IT experience in applications development, system architecture, IS/IT strategy, and enterprise architecture. He brings expertise in strategic IS/IT planning and architecture to ensure that enterprises align their IS/IT investments with their business objectives. Matthew is a Chartered IT Professional member of the British Computer Society, a Master Certified IT Architect, and a member of the IEEE Computer Society.

### **Tom van Sante, KPN/Getronics**

Tom van Sante is Principal Consultant and program director for KPN/Getronics. He started his career in IT over 30 years ago after studying architecture at the Technical University in Delft. Working in a variety of functions, from operations to management, he has always operated on the borders between business and IT. He was involved in the introduction and development of ITIL/ASL/BiSL in the Netherlands. Tom van Sante has worked in numerous appointments for Government and Industry advising on the use of IT in modern society. He was responsible for the introduction and development of TOGAF within KPN/Getronics.

**Mike Turner, Nokia**

Mike Turner led Capgemini's development effort on TOGAF Version 9 and also worked in the core team that developed the SAP Enterprise Architecture Framework (a joint initiative between Capgemini and SAP). He is currently working as an Enterprise Architect at Nokia.

**Paul van der Merwe, Business Connexion**

Paul van der Merwe, Business Unit Manager at Business Connexion, is one of South Africa's most dynamic and insightful enterprise architecture practitioners. A conceptual thinker, he has driven a number of advances in the fields in which he has specialized, among them software development, business intelligence, ICT management, and enterprise architecture. The fundamental approach to enterprise architecture advocated by him is repository-based enterprise architecture that should be established within organizations as an ongoing practice that enables business and technology capabilities. He consults and trains on the implementation of TOGAF and frequently presents on enterprise architecture at industry events.

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# Chapter 1

## Introduction

This chapter provides an introduction to TOGAF, an Open Group Standard.

Topics addressed in this chapter include:

- An Introduction to TOGAF
- TOGAF, its structure and content
- The kinds of architecture that TOGAF addresses

### 1.1 Introduction to TOGAF

TOGAF is an architecture framework. Put simply, TOGAF is a tool for assisting in the acceptance, production, use, and maintenance of architectures. It is based on an iterative process model supported by best practices and a re-usable set of existing architectural assets.

TOGAF is developed and maintained by The Open Group Architecture Forum. The first version of TOGAF, developed in 1995, was based on the US Department of Defense Technical Architecture Framework for Information Management (TAFIM). Starting from this sound foundation, The Open Group Architecture Forum has developed successive versions of TOGAF at regular intervals and published each one on The Open Group public web site.

This document covers TOGAF Version 9.1, referred to as “TOGAF” within the text of this document. TOGAF 9.1 was first published in December 2011, and is a maintenance update to TOGAF 9 that was published in January 2009. This latest version is an evolution from TOGAF 8.1.1 and a description of the changes is provided in Appendix A.

TOGAF can be used for developing a broad range of different enterprise architectures. TOGAF complements, and can be used in conjunction with, other frameworks that are more focused on specific deliverables for particular vertical sectors such as Government, Telecommunications, Manufacturing, Defense, and Finance. The key to TOGAF is the method – the TOGAF Architecture Development Method (ADM) – for developing an enterprise architecture that addresses business needs.

## 1.2 Structure of the TOGAF Document

The TOGAF document is divided into seven parts, as summarized in Table 1.

Table 1: Structure of the TOGAF Document

|   |   |
|---|---|
| Part I: Introduction                        | This part provides a high-level introduction to the key concepts of enterprise architecture and, in particular, to the TOGAF approach. It contains the definitions of terms used throughout TOGAF and release notes detailing the changes between this version and the previous version of TOGAF. |
| Part II: Architecture Development Method    | This part is the core of TOGAF. It describes the TOGAF Architecture Development Method (ADM) – a step-by-step approach to developing an enterprise architecture.  |
| Part III: ADM Guidelines and Techniques     | This part contains a collection of guidelines and techniques available for use in applying the ADM.   |
| Part IV: Architecture Content Framework     | This part describes the TOGAF content framework, including a structured metamodel for architectural artifacts, the use of re-usable Architecture Building Blocks (ABBs), and an overview of typical architecture deliverables.  |
| Part V: Enterprise Continuum and Tools      | This part discusses appropriate taxonomies and tools to categorize and store the outputs of architecture activity within an enterprise.   |
| Part VI: TOGAF Reference Models             | This part provides two architectural reference models, namely the TOGAF Technical Reference Model (TRM), and the Integrated Information Infrastructure Reference Model (III-RM).  |
| Part VII: Architecture Capability Framework | This part discusses the organization, processes, skills, roles, and responsibilities required to establish and operate an architecture practice within an enterprise.   |

## 1.3 What is Architecture in the Context of TOGAF?

ISO/IEC 42010:2007<sup>2</sup> defines “architecture” as:

*“The fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution.”*

TOGAF embraces and extends this definition. In TOGAF, “architecture” has two meanings depending upon the context:

1. A formal description of a system, or a detailed plan of the system at a component level to guide its implementation
2. The structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time

## 1.4 What kinds of Architecture does TOGAF deal with?

TOGAF covers the development of four related types of architecture.

These four types of architecture are commonly accepted as subsets of an overall enterprise architecture, all of which TOGAF is designed to support. They are shown in Table 2.

Table 2: Architecture Types Supported by TOGAF

| Architecture Type              | Description   |
|--------------------------------|---|
| Business Architecture          | The business strategy, governance, organization, and key business processes.  |
| Data Architecture <sup>3</sup> | The structure of an organization’s logical and physical data assets and data management resources.  |
| Application Architecture       | A blueprint for the individual applications to be deployed, their interactions, and their relationships to the core business processes of the organization. |

2 ISO/IEC 42010:2007, Systems and Software Engineering – Recommended Practice for Architectural Description of Software-Intensive Systems, Edition 1 (technically identical to ANSI/IEEE Std 1471-2000).

3 Data Architecture is called Information Architecture in some organizations.

| Architecture Type       | Description   |
|-------------------------|---|
| Technology Architecture | The logical software and hardware capabilities that are required to support the deployment of business, data, and application services. This includes IT infrastructure, middleware, networks, communications, processing, and standards. |

## 1.5 What does TOGAF Contain?

TOGAF reflects the structure and content of an architecture capability within an enterprise, as shown in Figure 1.

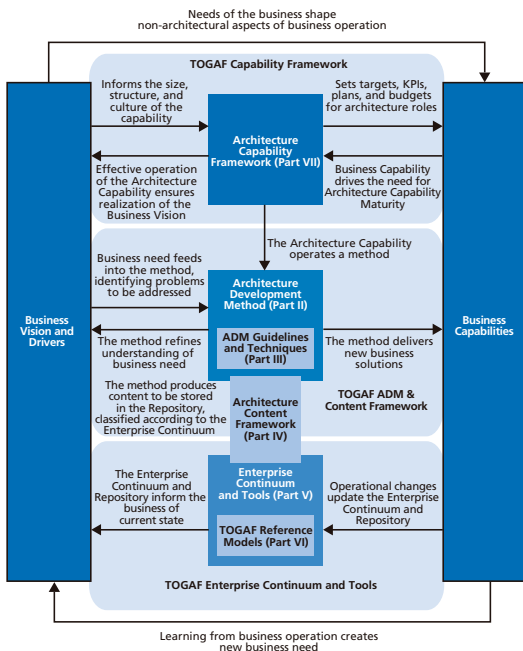


Figure 1: TOGAF Content Overview

Central to TOGAF is the Architecture Development Method (documented in TOGAF, Part II). The architecture capability (documented in TOGAF, Part VII) operates the method. The method is supported by a number of guidelines and techniques (documented in TOGAF, Part III). This produces content to be stored in the repository (documented in TOGAF, Part IV), which is classified according to the Enterprise Continuum (documented in TOGAF, Part V). The repository is initially populated with the TOGAF Reference Models (documented in TOGAF, Part VI).

### 1.5.1 The Architecture Development Method (ADM)

The **ADM** describes how to derive an organization-specific enterprise architecture that addresses business requirements. The ADM is the major component of TOGAF and provides guidance for architects on a number of levels:

- It provides a number of **architecture development phases** (Business Architecture, Information Systems Architectures, Technology Architecture) in a cycle, as an overall process template for architecture development activity.
- It provides a **narrative of each architecture phase**, describing the phase in terms of objectives, approach, inputs, steps, and outputs. The inputs and outputs sections provide a definition of the architecture content structure and deliverables (a detailed description of the phase inputs and phase outputs is given in the Architecture Content Framework).
- It provides cross-phase summaries that cover requirements management.

The ADM is described further in Chapter 2.

### 1.5.2 ADM Guidelines and Techniques

**ADM Guidelines and Techniques** provides a number of guidelines and techniques to support the application of the ADM. The guidelines address adapting the ADM to deal with a number of usage scenarios, including different process styles (e.g., the use of iteration) and also specific specialty



architectures (such as security). The techniques support specific tasks within the ADM (such as defining principles, business scenarios, business goals, gap analysis, migration planning, risk management, etc).

ADM Guidelines are described further in Chapter 4. ADM Techniques are described in detail in Chapter 3, together with key deliverables.

### 1.5.3 Architecture Content Framework

The **Architecture Content Framework** provides a detailed model of architectural work products, including deliverables, artifacts within deliverables, and the Architecture Building Blocks (ABBs) that deliverables represent.

The Architecture Content Framework is described further in Chapter 5.

### 1.5.4 The Enterprise Continuum

The **Enterprise Continuum** provides a model for structuring a virtual repository and provides methods for classifying architecture and solution artifacts, showing how the different types of artifacts evolve, and how they can be leveraged and re-used. This is based on architectures and solutions (models, patterns, architecture descriptions, etc.) that exist within the enterprise and in the industry at large, and which the enterprise has collected for use in the development of its architectures.

The Enterprise Continuum is described further in Chapter 6.

### 1.5.5 TOGAF Reference Models

TOGAF provides two reference models for possible inclusion in an enterprise's own Enterprise Continuum, namely the TOGAF **Technical Reference Model** (TRM) and the **Integrated Information Infrastructure Model** (III-RM).

The TOGAF Reference Models are described further in Chapter 7.

### 1.5.6 The Architecture Capability Framework

The **Architecture Capability Framework** is a set of resources, guidelines, templates, background information, etc. provided to help the architect establish an architecture practice within an organization.

The Architecture Capability Framework is described further in Chapter 8.

