From Architecture to Execution with TOGAF 9

PRESENTED BY:
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Introduction

• The acid test for an Enterprise Architecture is transforming the architecture definitions into reality.

• The real challenge is to align business planning, portfolio management, operations service management, system design and enterprise architecture frameworks together through corporate governance to ensure success.

• TOGAF 9 provides very useful guidance to ensure that this takes place in a coherent manner based upon global lessons learned.
Agenda

• Architecture Transformation and Fit in the Organization
• Capability Based Planning
• Tiered Architecture
• Architecture Impact and Framework Integration
• Applying the ADM at different Enterprise Levels
• Business Transformation Support
• Interoperability
• Risk Management & Governance
• Migration Planning Techniques
• Concluding Comments
Where Architecture Transformation Fits

Supporting Material
- Chapter 28 - Migration Planning Techniques
- Chapter 29 - Interoperability
- Chapter 30 - Business Transformation Readiness Assessment
- Chapter 31 - Capability Based Planning
- Chapter 32 - Risk Management
Stakeholders - The Management Frameworks

Business Capability Management

Enterprise Architecture Development Method

Portfolio/Project Management

Operations Management

System Development Method

GOVERNANCE
Coordinating the Management Frameworks

Business Planning

Business Direction

Enterprise Architecture

The Old Way

Structured Direction

The New Way

Operations Management

Runs The Enterprise

Delivers

Project Management

Delivers

Runs The Enterprise

The New Way

The Old Way
Capability Based Business Planning

Corporate Governance (Including Corporate IM/IT)

Line of Business Portfolio

Corporate Portfolio (e.g. HR, Fin, …)

IM/IT Portfolio

Capability 1 – (e.g. Electronic Service Delivery)

Capability 2 – (e.g. Sarbanes Oxley Compliance)

Operations Management - Corporate IT Infrastructure

Functional Management (Vertical)

Capability Management (Horizontal)
Capability “Radar” Diagram

Capability Increment 3
Capability Increment 2
Capability Increment 1
Capability Increment 0

Capability Dimension 1
Capability Dimension 2
Capability Dimension 3
Capability Dimension 4
Capability Dimension n

Capability Points
Outline Capability Management

5 – 10 years

Corporate Strategic Plan
Business Transformation Goals and Objectives

Manages & Creates

Capability (Outcome Oriented)

Contains

Capability Increment

Designates

Building Blocks (Deliverables)

Capability Management

3 – 5 years

Horizontal Management Across Portfolios
• Strategic Business Leadership

Possible Capability Dimensions
• Personnel
• R&D
• Infrastructure/facilities
• Concepts/Processes
• Information Management
• Materiel

.25 – 1.5 years
TOGAF 9 - TIERED ARCHITECTURE
Architecture Intent – Lessen Burden on Projects

Enable Projects to Focus On Delivery not Complex Design

- Agile Architecture
- Strategic
- Tactical
- Transition
- Operational
- Reusable Patterns, Solutions & Standards
Portfolio/Project Management

Corporate Strategic Plan
   Business Transformation Goals and Objectives

Identifies
Functional Portfolios (e.g. IT, HR)

Consists of
Project/Initiative

Contains
Project/Initiative Increment

5 – 10 years
3 – 5 years
.5 – 1.5 years

Strategic Not Business
TOGAF 9 - Architecture Relationships

Strategic Enterprise Architecture

- Architecture Vision
- Enterprise Architecture Definition #2 (Reference Arch)
- Enterprise Architecture Definition #1 (Reference Arch)
- Baseline Enterprise Architecture

Time

- ~12 Months
- ~5 Years
- ~10 Years

Scope

Depth (Content)

- Transition Architecture 1
- Transition Architecture 2
- Transition Architecture 3
- Transition Architecture 4
- Transition Architecture 5
- Transition Architecture 6
- Arch Realization
- Arch Realization
- Arch Realization
- Arch Realization

(e.g. Projects)
Business Planning Relationships

Baseline Enterprise Status

Strategic Enterprise Plan

Depth (Content)

Scope

Time

Enterprise Business Plans

Segment Business Plans

~10 Years

~5 Years

~12 Months
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<td>Architecture Vision (Strategic)</td>
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<th>What Data</th>
<th>How Process</th>
<th>Where Network</th>
<th>Who People</th>
<th>When Time</th>
<th>Why Motivation</th>
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|----------------------------------------|------------|-------------|---------------|------------|-----------|---------------|
Architecture Evolution/Transformation Plan Cycle

Transformation Plan Cycle

<table>
<thead>
<tr>
<th>Time</th>
<th>Strategic Plan 1</th>
<th>Plan</th>
<th>Design</th>
<th>Execute</th>
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</thead>
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<tr>
<td>5-10 Years</td>
<td>Tactical Plan 1</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
</tr>
<tr>
<td>3-5 Years</td>
<td>Transition Plan 1-1</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
</tr>
<tr>
<td>.5 to 1.5 Years</td>
<td>Transition Plan 1-2</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
</tr>
<tr>
<td>.5 to 1.5 Years</td>
<td>Transition Plan 1-3</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
</tr>
<tr>
<td>3-5 Years</td>
<td>Tactical Plan 2</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
</tr>
<tr>
<td>.5 to 1.5 Years</td>
<td>Transition Plan 2-1</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
</tr>
<tr>
<td>.5 to 1.5 Years</td>
<td>Transition Plan 2-2</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
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<td>.5 to 1.5 Years</td>
<td>Transition Plan 2-3</td>
<td>Plan</td>
<td>Design</td>
<td>Execute</td>
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</tbody>
</table>
ARCHITECTURE IMPLICATIONS & FRAMEWORK INTEGRATION
Architecture Definition & Service Reference Model

The Implications are not Trivial !!!

Enterprise Architecture Definition (Logical)

Models

To Identify

Requirements & Capabilities

Specify Innovative Intent Using

Services

Satisfied Through

Organized In

Domains (Service Taxonomy)

Supported By

Service Standards

Basis For

Basis For

IM/IT Planning Structure

Management Accountability Framework

CIO Organization

Resources & Funding

Repository Structure

IM/IT Skills / ASD (Outsourcing)

Products / Service Delivery

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Baseline Architecture (TOGAF 8)

Strategic Plan (XXX) — Drives 3..n — Business Plan (XXX)

Business & IT Arch

Strategic Capabilities (TOGAF 9/XXX) — Specify — Target Capabilities (TOGAF 9/XXX)

Segment Arch

Strategic Architecture Vision (TOGAF 9) — Basis For 1..n — Reference (Defined) Architecture (TOGAF 8)

Delivery

Portfolio Charters (TOGAF 9) — Contain 1..n — Project Charters (TOGAF 9)

Legend

- Business Accountability
- Architecture Accountability
- Delivery Accountability
- Operations Accountability

Legend

- Baseline Architecture (TOGAF 8)

Implementation & Migration Plan (TOGAF 8) — Modifies

Operations

Baseline Infrastructure (Recommended)
APPLYING THE ADM AT DIFFERENT ENTERPRISE LEVELS
Partitioning

- In most organizations one architecture will not work
- Need to partition and collaborate

Figure 20-1  Summary Classification Model for Architecture Landscapes
Partitioning in a Single ADM Cycle

- good when a number of architectures are being developed within a similar time period by a single team.
BUSINESS TRANSFORMATION
Business Transformation Readiness Assessment

• Used for evaluating and quantifying an organization’s readiness to undergo change
• A joint effort between corporate (especially human resources) staff, lines of business, and IT planners.
• Recommended activities (Canadian Government Business Transformation Enablement Program) are:
  1. Determine the readiness factors that will impact the organization
  2. Present the readiness factors using maturity models
  3. Assess the readiness factors, including determination of readiness factor ratings
  4. Assess the risks for each readiness factor and identify improvement actions to mitigate the risk
  5. Work these actions into Phase E and F Implementation and Migration Plan
Determine Readiness Factors

• Determine factors that will impact on the business transformation associated with the migration from the Baseline to Target Architectures.
• Use a facilitated workshop with all stakeholders
• Sample Factors (From Canadian Government) include:
  – Vision
  – Desire, Willingness, and Resolve
  – Need
  – Business Case
  – Funding
  – Sponsorship and Leadership
  – Governance
  – Accountability
  – Workable Approach and Execution Model
  – IT Capacity to Execute
  – Enterprise Capacity to Execute
  – Enterprise Ability to Implement and Operate
# Present Readiness Factors

## Business Transformation Readiness Assessment - Maturity Model

### Factor 2: Need for Enterprise Information Architecture

<table>
<thead>
<tr>
<th>Class</th>
<th>Organizational Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEP Readiness Factor</td>
<td>YES</td>
</tr>
</tbody>
</table>

### Definition
There is recognition by the organization that information is a strategic corporate asset requiring stewardship. There is also recognition that the data is not universally understandable, of requisite quality, and accessible.

### Maturity Model Levels

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Not defined</td>
<td>Information is not recognized as an asset.</td>
<td>There is no clear stewardship of data.</td>
</tr>
<tr>
<td>1 Ad Hoc</td>
<td>Data Management (DM) concepts are intuitively understood and practiced on an ad hoc basis.</td>
<td>Stewardship of the data is informal. Data is recognized by certain internal experts and senior management as being of strategic importance to the organization. Focus is primarily on technically managing redundant data at the applications level.</td>
</tr>
<tr>
<td>2 Repeatable</td>
<td>Many parts of the organization value information/data as a strategic asset. Internal DM experts maintain clear lines of responsibility and stewardship of the data, organized along lines of business and at all senior levels. Staff put into practice DM principles and standards in their daily activities.</td>
<td></td>
</tr>
<tr>
<td>3 Defined</td>
<td>Data is recognized as a strategic asset in most parts of the organization, and throughout most levels from operations to senior management. Resources are committed to ensuring strong stewardship of data at the lower management and information expert levels.</td>
<td></td>
</tr>
<tr>
<td>4 Managed</td>
<td>Data is recognized as a strategic asset in all parts of the organization, and throughout most levels from operations to senior management. Resources are committed to ensuring strong stewardship of data at the senior management and information expert levels.</td>
<td>Data products and services are strongly integrated with the management practice of the organization. All staff are empowered and equipped to take stewardship of information, and are seen as “knowledge workers”.</td>
</tr>
<tr>
<td>5 Optimized</td>
<td>Data is treated in all levels throughout the organization as a strategic asset to be exploited and re-used.</td>
<td></td>
</tr>
</tbody>
</table>

## Recommended Target State

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### Assess Readiness Factors 2

#### Business Factor Assessment Summary

<table>
<thead>
<tr>
<th>Ser</th>
<th>Readiness Factor</th>
<th>Urgency</th>
<th>Readiness Status</th>
<th>Degree of Difficulty to Fix</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Desire/willingness/resolve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Need</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Business case</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Funding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Sponsorship and leadership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Governance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Accountability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Workable approach and execution model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>IT capacity to execute</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Departmental capacity to execute</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Ability to implement and operate</td>
<td></td>
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</tbody>
</table>
Readiness and Migration Planning

• Assessment provides a realistic assessment of the organization
• Key input into the strategic migration planning that will be initiated in Phase E and completed in Phase F.
• If business transformation actions are on architecture vision’s critical path and, if so, determine how they will impact implementation.
  – No point deploying new capability without employees trained to use it and support staff ready to sustain it.
• Readiness factors will have to be continuously monitored (Phase G)
• Readiness factors assessment will be a living document and during the migration planning and execution of the Transition Architectures
INTEROPERABILITY
Definitions of Interoperability

Core Enablers and Key Requirements Domains

**CROSS-CUTTING REQUIREMENTS DOMAINS:** accessibility, privacy, security

**BUSINESS INTEROPERABILITY**
- Delivery Networks
- eDemocracy
- eBusiness
- Enterprise resource management
- Relationship and case management

**INFORMATION INTEROPERABILITY**
- Knowledge management
- Business intelligence
- Information management
- Trusted identity

**TECHNICAL INTEROPERABILITY**
- IT infrastructure
Refining Interoperability - Example

Degrees of Interoperability

• **Degree 1:** Unstructured Data Exchange
• **Degree 2:** Structured Data Exchange
• **Degree 3:** Seamless Sharing of Data
• **Degree 4:** Seamless Sharing of Information

These degrees should be further refined e.g. refinement of degree 3 follows:

• **3A:** Formal Message Exchange
• **3B:** Common Data Exchange
• **3C:** Complete Data Exchange
• **3D:** Real-time Data Exchange
### Determining Interoperability Requirements

#### Phase B: Inter-stakeholder Information Interoperability Requirements

(Using degrees of information interoperability)

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<tbody>
<tr>
<td>A</td>
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<td>3</td>
<td>2</td>
<td>3</td>
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<td>3</td>
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<td>B</td>
<td>2</td>
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**Figure 29-1** Business Information Systems

#### Phase C: Inter-system Interoperability Requirements

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<tbody>
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<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
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<td>System A</td>
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<td>3D</td>
<td>2B</td>
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<td>3B</td>
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<td>System B</td>
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<td>2C</td>
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<td>2C</td>
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<td>System C</td>
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**Figure 29-2** Information Systems Interoperability Matrix
Risk – TOGAF 9 Support

• Always be risk
• Need to Identify, Address and track
• EA may identify the risks and mitigate certain ones
• There are two levels of risk that should be considered namely:
  – Initial Level of Risk
  – Residual Level of Risk
• The process for risk management is described in the following sections and consists of the following activities:
  – Risk Classification
  – Risk Identification
  – Initial Risk Assessment
  – Risk Mitigation and Residual Risk Assessment
  – Risk Monitoring
## Corporate Risk Impact Assessment

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<th>Effect</th>
<th>Frequency</th>
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<td>Catastrophic</td>
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<tr>
<td>Critical</td>
<td>E</td>
</tr>
<tr>
<td>Marginal</td>
<td>H</td>
</tr>
<tr>
<td>Negligible</td>
<td>M</td>
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## Risk Identification and Mitigation Assessment Worksheet

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<th>Risk ID</th>
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<th>Preliminary Risk</th>
<th>Mitigation</th>
<th>Residual Risk</th>
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<td>Effect</td>
<td>Freq</td>
<td>Impact</td>
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Migration Planning - Business Value Assessment Technique

Capability Based Planning Based on Capability Increments
i.e. Business Value

Value criteria such as
1. compliance to principles,
2. financial contribution,
3. strategic alignment, and
4. competitive position.

Risk criteria such as
1. size and complexity,
2. technology,
3. organizational capacity, and
4. impact of a failure.

Each criterion should be weighted.

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Managing the Transformation Portfolio

- Project A
- Project B
- Project C
- Project D
- Project E
- Project F
- Project G
- Project H

Value

Risk

- On target
- At Risk
- In Trouble

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The deductions are the basis for detailed design and planning requirements!!!
## Migration Planning - Consolidated Gaps, Solutions, and Dependencies Matrix

Integrates all of the Gap Analysis and Potential Solutions

<table>
<thead>
<tr>
<th>No.</th>
<th>Architecture</th>
<th>Gap</th>
<th>Potential Solutions</th>
<th>Dependencies</th>
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<tr>
<td>1</td>
<td>Business</td>
<td>New Order Processing Process</td>
<td>Use COTS software tool process</td>
<td>Drives applications (2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Implement custom solution</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Application</td>
<td>New Order Processing Application</td>
<td>COTS software tool X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Develop in-house</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Information</td>
<td>Consolidated Customer Information Base</td>
<td>Use COTS customer base</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Develop customer data mart</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 28-2** Consolidated Gaps, Solutions, and Dependencies Matrix
Migration Planning - Architecture Definition

Increments Table

Allows the architect to plan a series of Transition Architectures outlining the status of the project objectives at specified times.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Enterprise e-Services Capability</td>
<td>Training and Business Process</td>
<td>e-Licensing Capability</td>
<td>e-Employment Benefits</td>
</tr>
<tr>
<td>IT e-Forms</td>
<td>Design and Build</td>
<td></td>
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<tr>
<td>IT e-Information Environment</td>
<td>Design and Build Information Environment</td>
<td>Client Common Data Web Content Design and Build</td>
<td>Enterprise Common Data Component Management Design and Build</td>
</tr>
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</tbody>
</table>

Figure 28-3  Architecture Definition Increments Table
<table>
<thead>
<tr>
<th>Sub-Domain</th>
<th>Service</th>
<th>Transition Arch 1</th>
<th>Transition Arch 2</th>
<th>Transition Arch 3</th>
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<tbody>
<tr>
<td>Infrastructure Applications</td>
<td>Information Exchange Services</td>
<td>Solution System A</td>
<td>Solution System B-1</td>
<td>Solution B-2 (Complete)</td>
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<td></td>
<td>Data Management Services</td>
<td>Solution System D</td>
<td>Solution System D</td>
<td>Solution System D</td>
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</tbody>
</table>

Architectural State Using the Service Reference Model
Summary

• Realizing Architecture is difficult BUT crucial for credibility
  – 10 years developing a Framework is not effective
• Enterprise Architects have to work in context
  – Implementation is a collaborative effort
• TOGAF 9 provides some solid advice and best practices to realize the architecture
  – Addresses small, medium and large companies
  – Pragmatic approach
  – Requirement of “soft” skills