
Delivering SOA with TOGAF

By: Awel Dico, PhD
Enterprise Architect

Email: Awel.dico@bmo.com

Blog: www.soastudio.com

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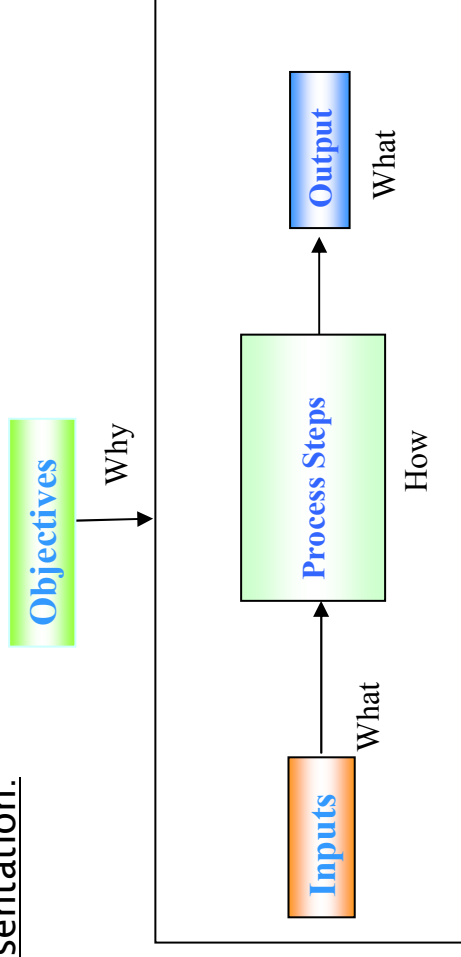
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Objective and Approach of this presentation

- ❖ To communicate why TOGAF should be enhanced to support SOA
- ❖ To discuss the key enhancements or changes to TOGAF ADM
- ❖ To discuss how would one incorporate those changes

Approach in this presentation:



Why need to enhance TOGAF to support SOA?

- ❖ TOGAF is a mature EA framework that is widely adopted
- ❖ SOA is architecture style that is being widely adopted
- ❖ Enterprises have adopted both TOGAF and SOA
 - Struggling to bring the EA work and SOA together
- ❖ TOGAF practitioners should be able to use TOGAF to deliver SOA
 - Need to stop looking at the two as separate activities

Overview: TOGAF

What is TOGAF?

TOGAF = The Open Group Architecture Framework.

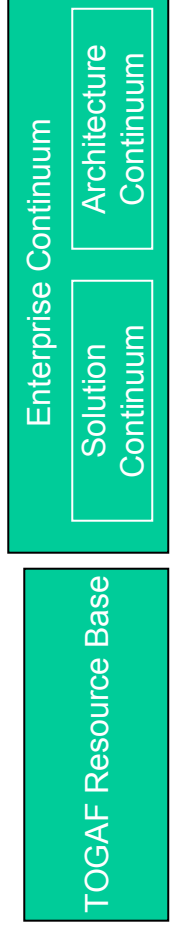
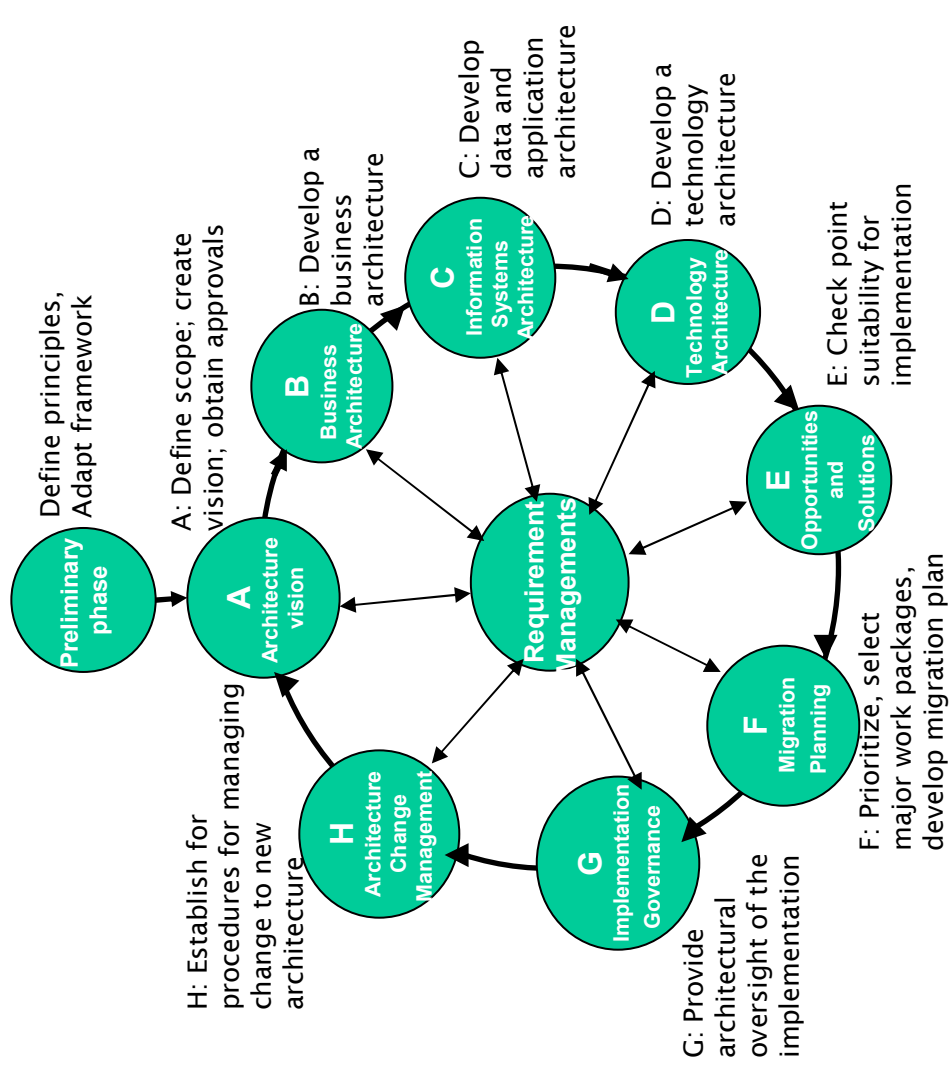
An architecture framework that enables you to design, evaluate, and build the right architecture for your organization.

What architecture style does it support?

TOGAF doesn't specify the architecture style – it is a generic framework
TOGAF can be used in developing architecture based on SOA style.

What does it contain?

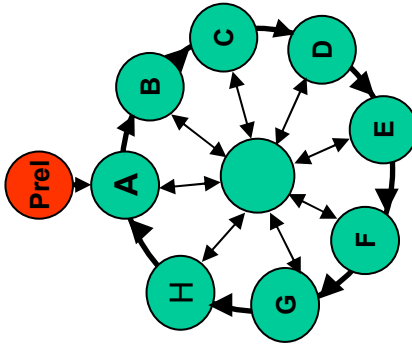
TOGAF consists of three main parts:
The TOGAF Architecture Development Method (ADM),
The Enterprise Continuum
The TOGAF Resource Base



Preliminary Phase - Enhancement

Objectives

- To ensure everyone is committed to architecture process
- To define the architecture principles (**including SOA principles**)
- To define scope and assumptions
- **To assess SOA readiness, maturity and define SOA adoption plan**
- To define framework and detail methodologies (i.e. ADM)
- To setup and monitor a process (**including SOA Governance framework**)
- To define criteria for architecture tools



Inputs

- TOGAF Architecture Development Method
- **Statement of SOA interest**
- Other architecture frameworks
- **Existing SOA Reference Architectures**
- **Existing industry SOA Maturity models**
- Business strategy, principles, goals, drivers
- IT governance strategy
- **Existing SOA Governance Frameworks**
- Architecture principles, when pre-existing
- **Existing SOA principles**
- Principles that are being subscribed to, arising from other, federated architectures

Steps

1. **Assess SOA readiness**
2. **Assess SOA maturity**
3. **Plan SOA adoption**
4. **Develop/Select/customize SOA Reference Architecture**
5. **Develop Guidelines**
6. **Develop SOA governance framework**

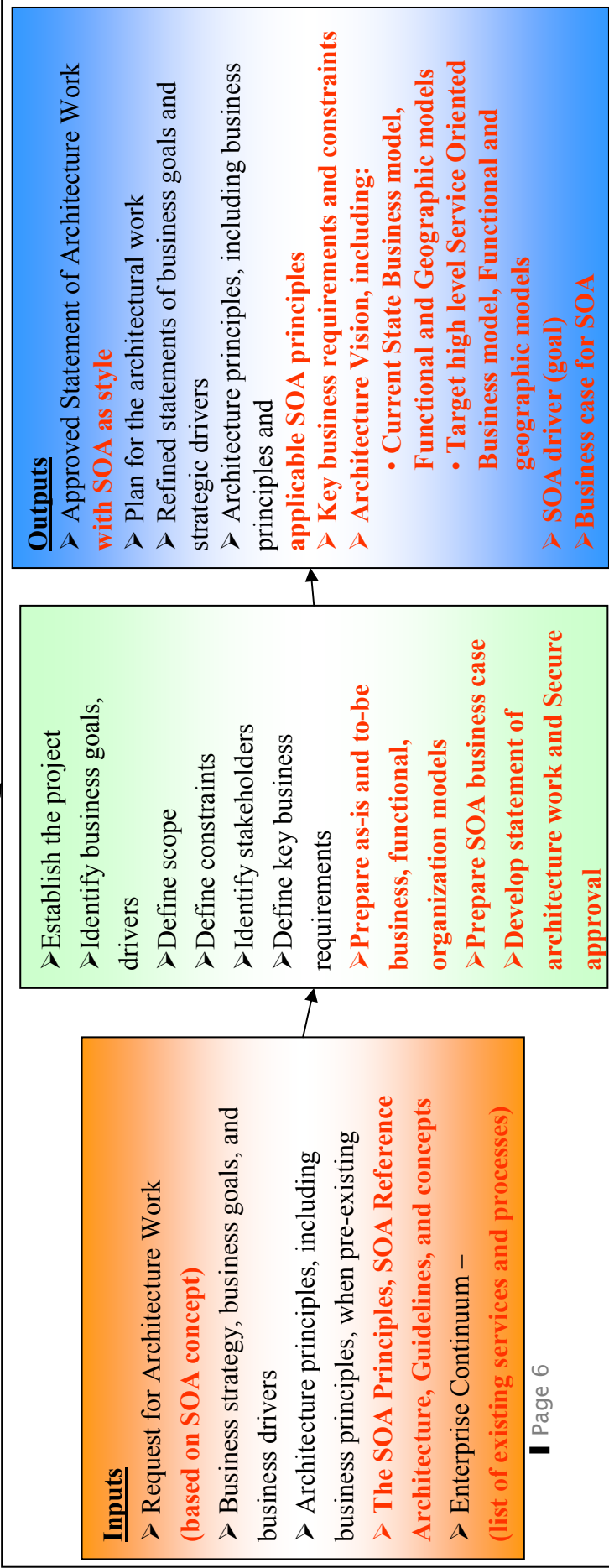
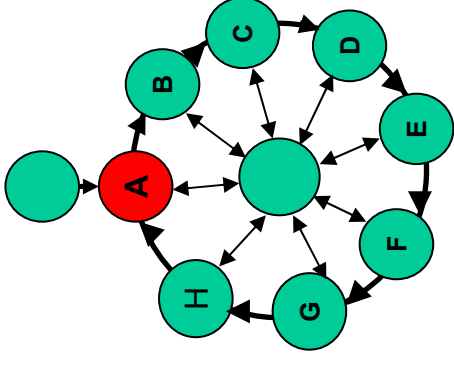
Outputs

- Framework definition
- **Architecture principles, including SOA principles**
- Restatement of, or reference to, business principles, business goals, and business drivers
- **Assessment report**
- **Customized SOA maturity model**
- **SOA Statement of Direction with Adoption Plan**
- **SOA Reference Architecture**
- **Architecture Guidelines**
- **SOA Governance framework**

Phase A: Architecture Vision Enhancement

Objectives:

- To ensure proper recognition and endorsement from business sponsors
- To validate the business principles, business goals, and strategic business drivers
- To define the scope of the current architecture effort
- To define the relevant stakeholders, and their concerns and objectives
- To define the key business requirements and the constraints
- To articulate an Architecture Vision addressing requirements and constraints
- To secure formal approval to proceed
- To understand the impact on, and of, other enterprise architecture development cycles
- **To develop business case for SOA for this architecture cycle**



Phase A: Stakeholders Enhancement

❖ Definitions from TOGAF

A **view** is a representation of a whole system from the perspective of a related set of concerns.

➤ A **viewpoint** defines the perspective from which a view is taken.

❖ As per TOGAF, the minimum set of stakeholders :

- Users
- System and Software Engineers
- Operators, Administrators, and Managers
- Acquirers

❖ SOA related stakeholders:

- SOA center of excellence
- SOA Governance body.
- Information security group
- Implementers (Service designers and Service Integrators)

Phase A: Views and Viewpoints Enhancement

- ❖ TOGAF specifies the following common set of architectural views:
 - **Business Architecture views**
 - **Data Architecture views**
 - **Applications Architecture views**
 - **Technology Architecture views**

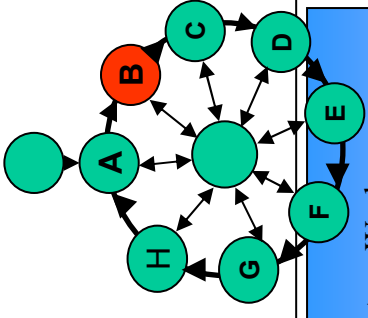
- ❖ **A viewpoint is a model (or description) of the information contained in a view**

- ❖ **Views identified as important for SOA using TOGAF:**
 1. Service model view
 2. Policy/Guidelines/Standards/processes view
 3. Maturity model view
 4. Service Portfolio view
 5. Information view

Phase B: Business Architecture Enhancement

Objectives

- To describe the Baseline Business Architecture
- To develop a Target Business Architecture
- To analyze the gaps between the Baseline and Target Business Architectures
- To select the relevant architecture viewpoints
- To select the relevant tools and techniques for viewpoints



Inputs

- Request for Architecture Work
- Approved Statement of Architecture Work
- Refined statements of business goals and strategic drivers
- Architecture and business principles
- Enterprise Continuum
- **Key business requirements and constraints**
- **Architecture Vision, including:**
 1. Current State Business model, Functional and Geographic models
 2. Target high level Service Oriented Business, Functional and geographic models

Develop Baseline Business Architecture Description

- Identify Reference Models, Viewpoints, and Tools
- Create Architecture Model(s)
 - **Prepare SO business model**
 - **Prepare Business services model**
 - **Prepare business terms and semantics**
 - **Prepare Business process model**
 - **Prepare Functional model**
 - **Prepare Geographic model**
- Select Business Architecture Building Blocks (e.g., business services)
- Conduct Formal Checkpoint Review of Architecture Model and Building Blocks with Stakeholders
- Review Non-Functional (Qualitative) Criteria
- Complete Business Architecture
- Perform Gap Analysis and Create Report

Outputs

- Statement of Architecture Work
- Validated business principles, business goals, and strategic drivers
- **Refined key Business requirements business rules (constraints)**
- Baseline Business Architecture, Version 1.0 (detailed)
- Target Business Architecture, Version 1.0 (detailed), including:
 - **Business model**
 - **Business Services model**
 - **Business process model**
 - **Business terms and semantics**
 - **Functional model**
 - **Geographic model**
- Views corresponding to the selected viewpoints addressing key stakeholder concerns
- Gap analysis results
- **Non-functional requirements**
- Business Architecture Report
- Updated business requirements

Phase C : Application Architecture or Service Architecture or Both?

❖ A look back at TOGAF Application Architecture objective:

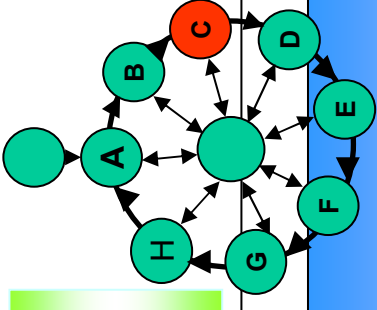
Below is what TOGAF says about the objective of Application Architecture:

- The effort is *not* concerned with applications systems design
- Applications are not described as computer systems
- They are described as logical groups of capabilities that
 - ❖ manage the data objects in the Data Architecture
 - ❖ support the business functions in the Business Architecture.
- The applications are defined without reference to particular technologies
- ❖ What this means in SOA terms:
 - Data services – manage the data objects in the data architecture
 - Software (Business) services – support business functions in the business architecture
 - Applications are implemented by composing or orchestrating services

Phase C: Service Architecture / Application Architecture

Objectives

- Develop Target Architectures covering either or both (depending on project scope) of the Data and Application Systems domains.
- **Develop target service architecture and service portfolio that support Business services specified in phase B**



Inputs

- Application principles, if existing
- Data principles, if existing
- Request for Architecture Work
- Statement of Architecture Work
- Architecture Vision
- Enterprise Continuum
- Baseline Business Architecture, Version 1.0
- **Target Business Architecture, Version 1.0**
- Baseline Application Architecture, Version 0.1
- **Baseline Service Architecture**
- Target **Service Architecture**, Version 0.1
- Relevant technical requirements
- Gap analysis results (from Business Architecture)
- Re-usable building blocks (from Continuum)
- **Service data schema and semantic model**

1. **Identify services**
2. **Characterize services**
3. **Review services**
4. **Publish services**

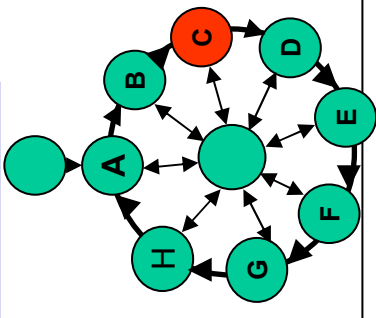
Example:

- Consider Using
 - SCA (Open)
 - WCF (MSFT)
 - MDA (OMG)
- **Consider Legacy Migration**

Outputs

- Statement of Architecture Work
- **Baseline Service Architecture, Version 1.0**
- **Target Service Architecture, Version 1.0**
 - **Service dependency**
 - **Service orchestration**
 - **Service description**
 - **Service specification**
- **Service Architecture views**
- **Service Architecture report summarizing what was done and the key findings**
- **Impact analysis**
- **Service portfolio plan**
- **Updated Service catalog**
- **Legacy transition plan**
- **Report on traceability back to business services**

Phase C – Data Architecture Enhancement

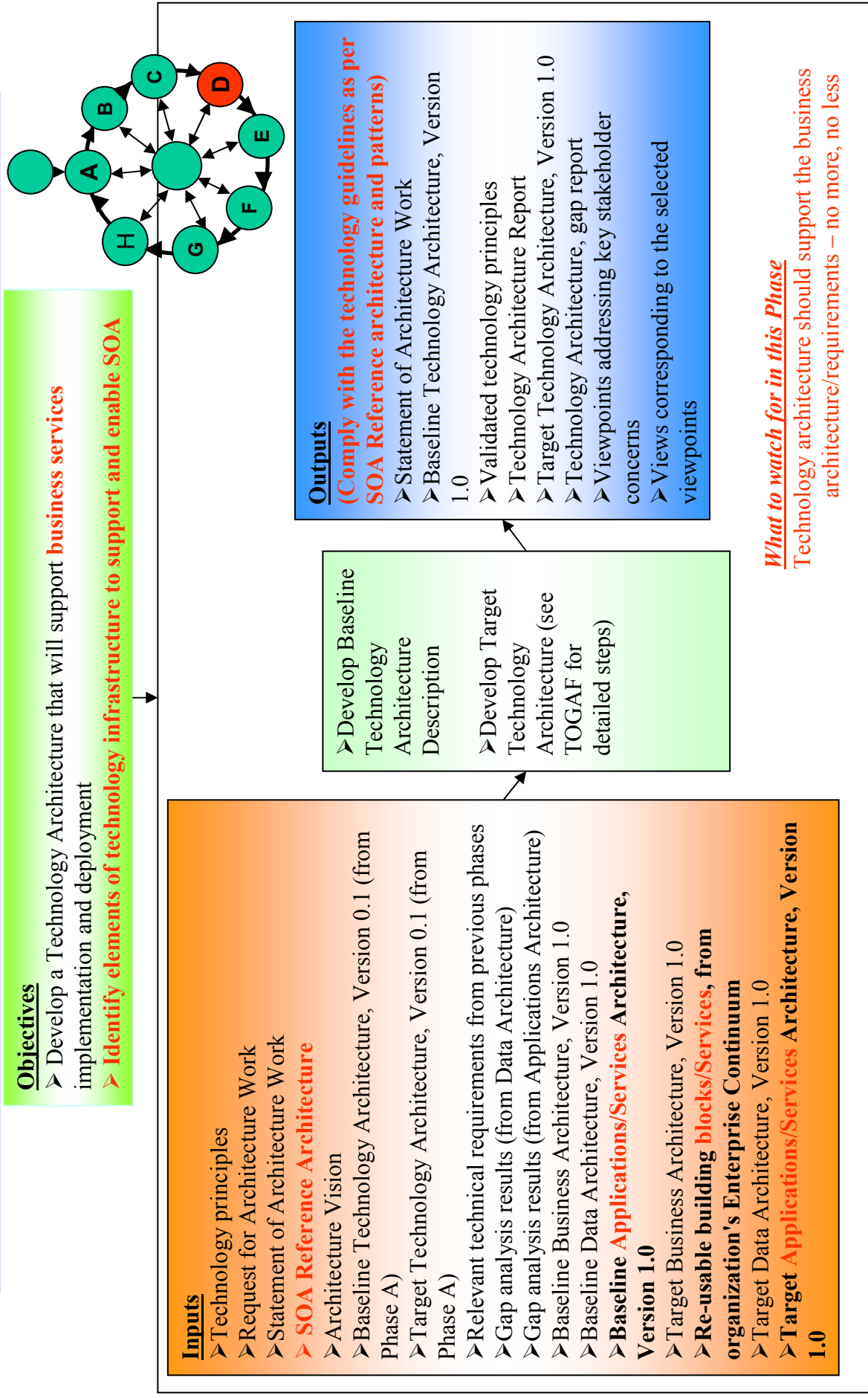


Objectives

- Define the major types and sources of data necessary to support the business, in a way that is:
 - Understandable by stakeholders
 - Complete and consistent
 - Stable
- **Develop data schema and semantics**

<p>Inputs</p> <ul style="list-style-type: none"> ➤ Data principles, if existing ➤ Request for Architecture Work ➤ Statement of Architecture Work ➤ Architecture Vision ➤ Relevant technical requirements ➤ Gap analysis results (from Business Architecture) ➤ Baseline Business Architecture, Version 1.0 ➤ Target Business Architecture, Version 1.0 ➤ Baseline Data Architecture, Version 0.1 ➤ Target Data Architecture, Version 0.1 ➤ Re-usable building blocks, from organization's Enterprise Continuum, if available (in particular, definitions of current data) 	<p>Develop Baseline Data Architecture Description</p> <ul style="list-style-type: none"> ➤ Review and Validate Principles, Reference Models, Viewpoints, and Tools ➤ Create Architecture Model(s) ➤ Select Data Architecture Building Blocks ➤ Conduct Formal Checkpoint Review with Stakeholders ➤ Review Non-functional Criteria (e.g., performance, reliability, security, integrity) ➤ Complete Data Architecture ➤ Conduct Checkpoint/Impact Analysis ➤ Perform Gap Analysis and Create Report ➤ prepare schema with semantics 	<p>Outputs</p> <ul style="list-style-type: none"> ➤ Statement of Architecture Work ➤ Baseline Data Architecture, Version 1.0 ➤ Validated data principles ➤ Target Data Architecture, Version 1.0, including: Business data model, Logical data model, Data management process models, Data entity/business function matrix, Data interoperability requirements ➤ Service data schema and semantic model ➤ Viewpoints addressing key stakeholder concerns ➤ Views corresponding to the selected viewpoints ➤ Gap analysis results ➤ Relevant technical requirements ➤ Data Architecture Report ➤ Impact Analysis ➤ Updated business requirements, if appropriate
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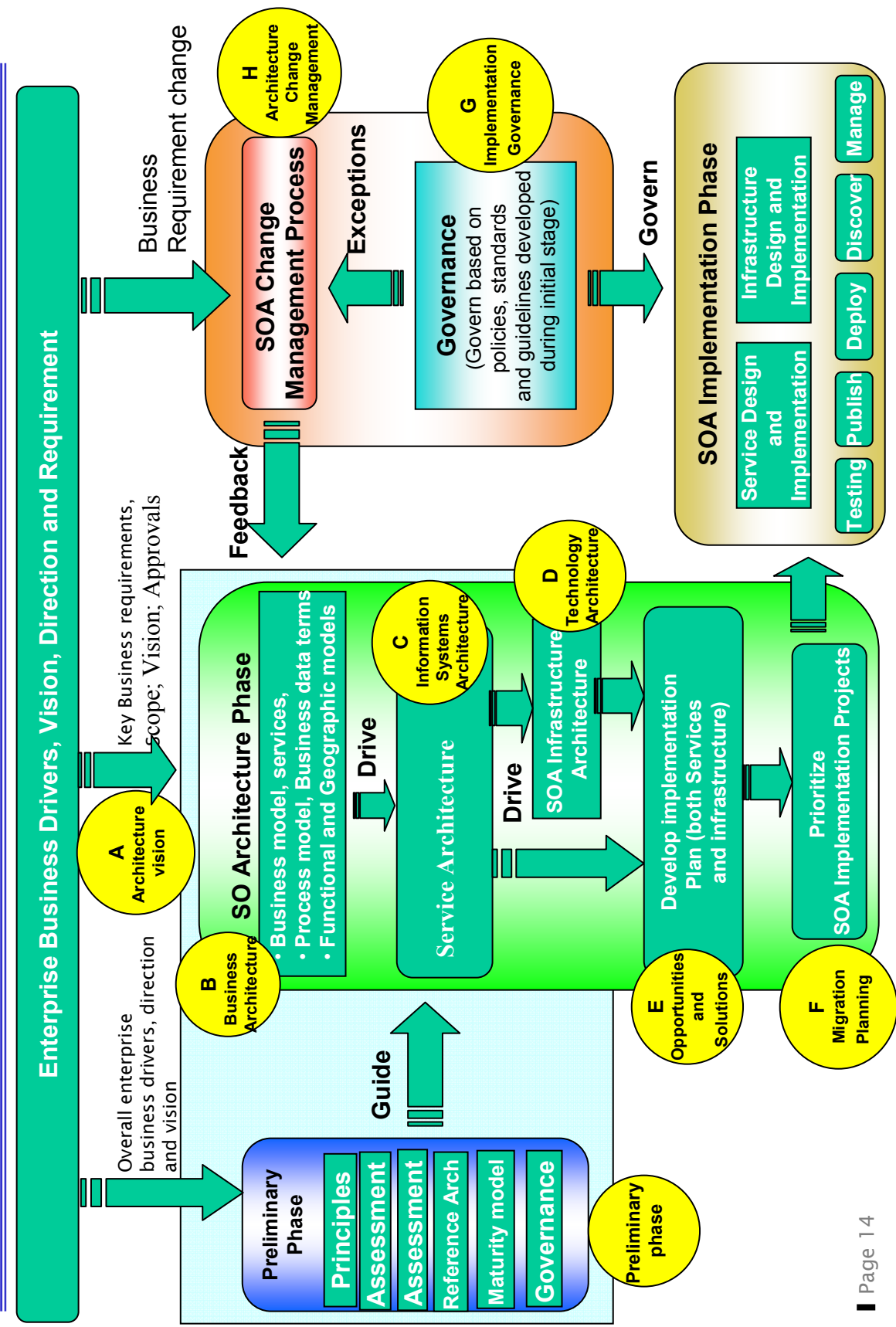
Phase D: Technology Architecture Enhancement



What to watch for in this Phase

Technology architecture should support the business architecture/requirements – no more, no less

Summary: Using TOGAF for End-to-End SOA work



Questions

