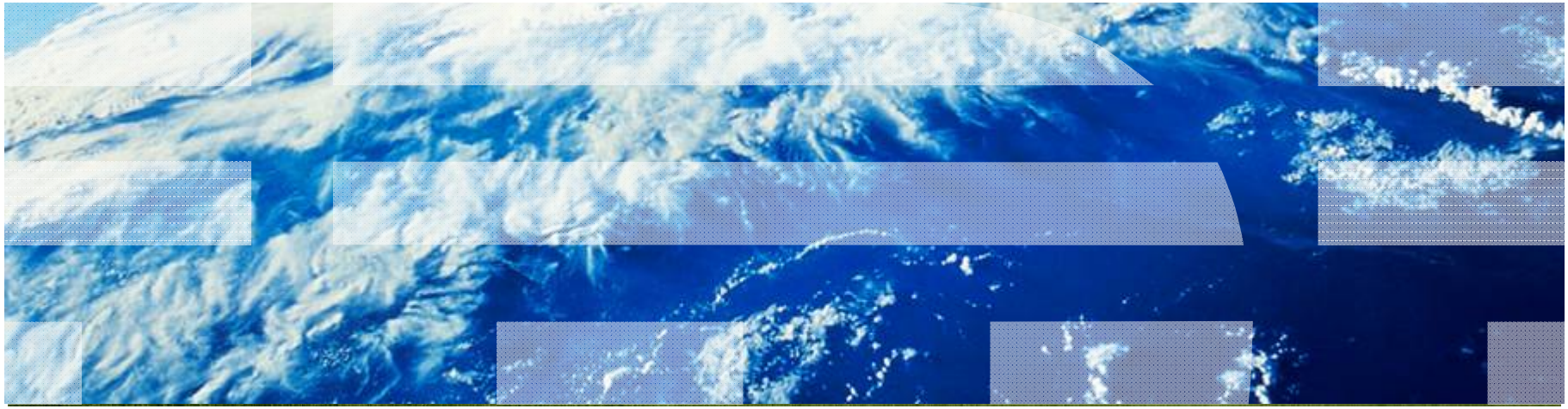
Dr. Hans-Peter Hoidn
Executive IT Architect, IBM Software Group
Global Business Integration "Tiger" Team

Enterprise IT Architectures

Governance – Architecture Management



Agenda

I. Introduction Why (SOA) Governance

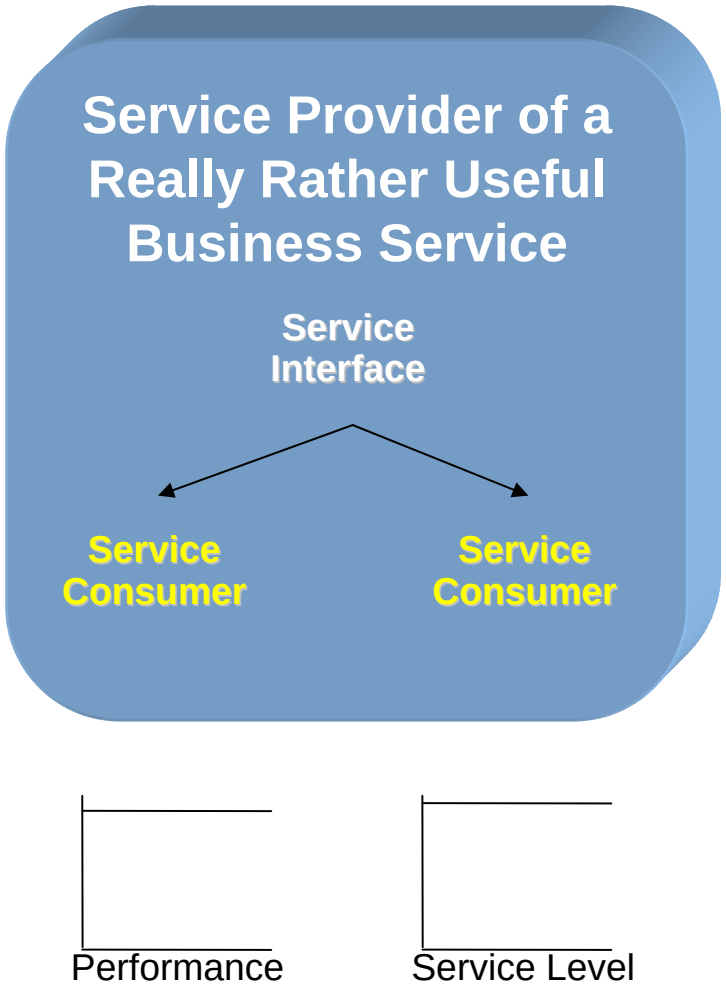
II. SOA Governance

III. Enterprise Architecture – Governance, Transition

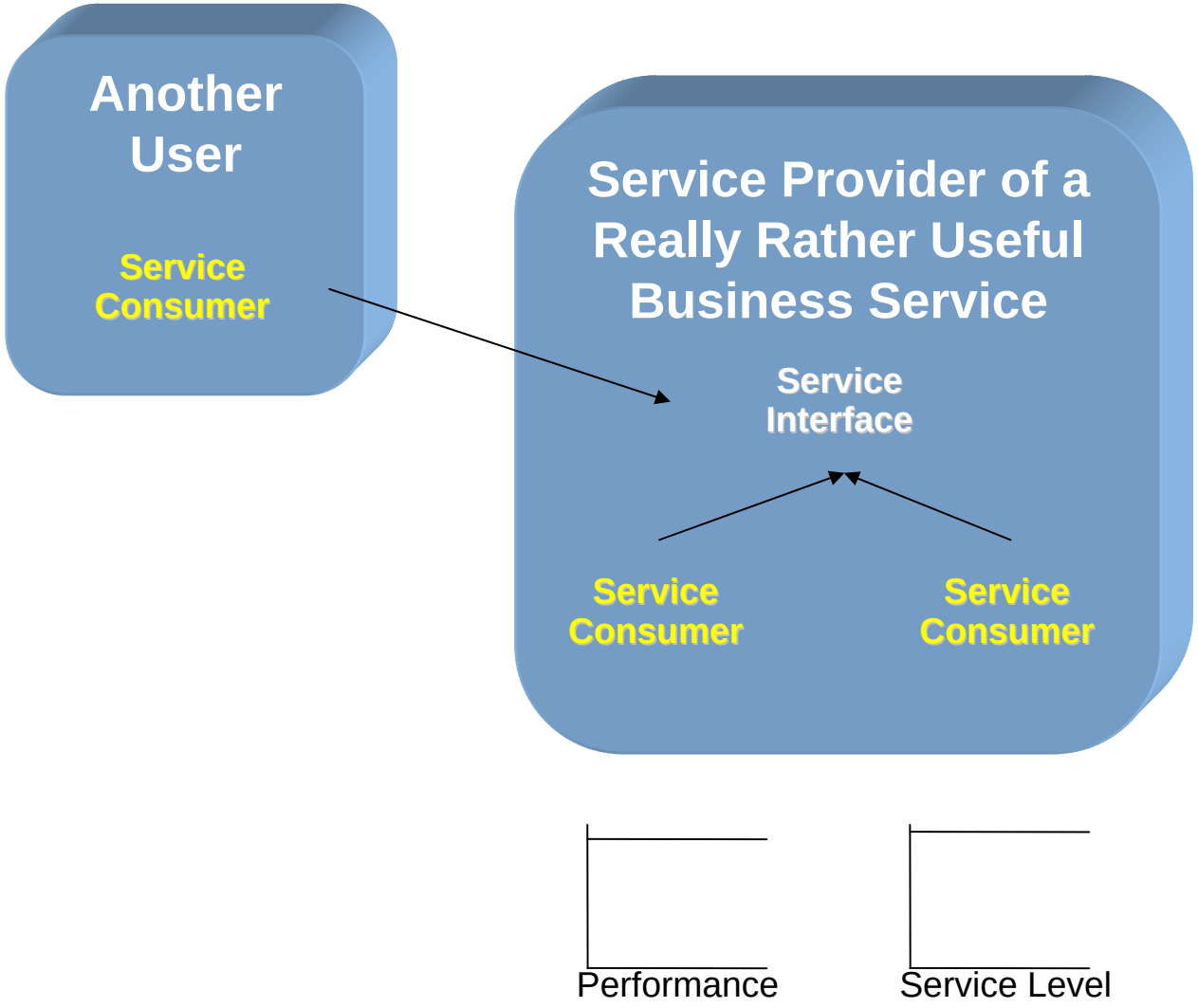
IV. Recap

Introduction
Why (SOA) Governance

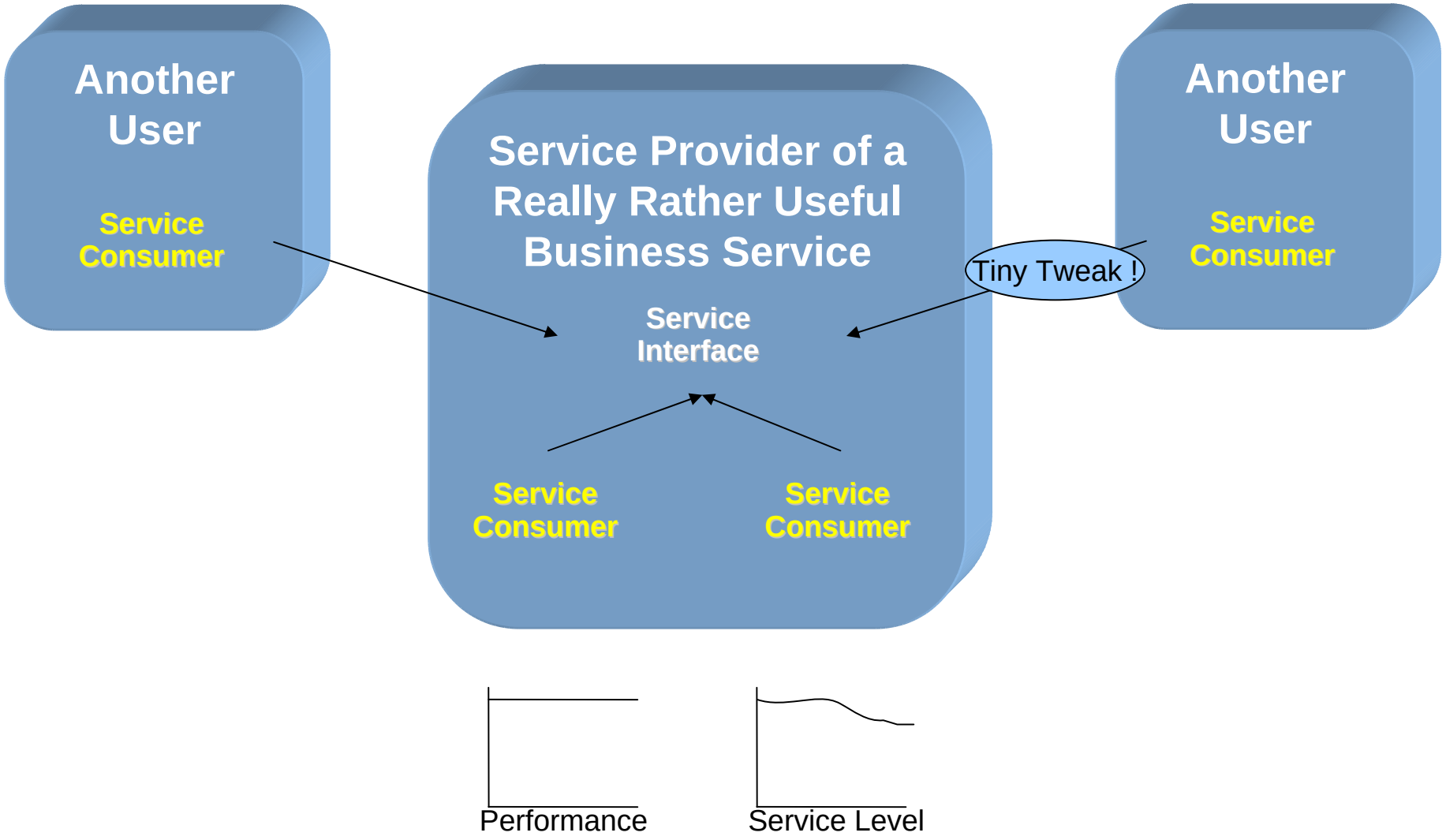
A Sorry Tale – somebody started implementing a service



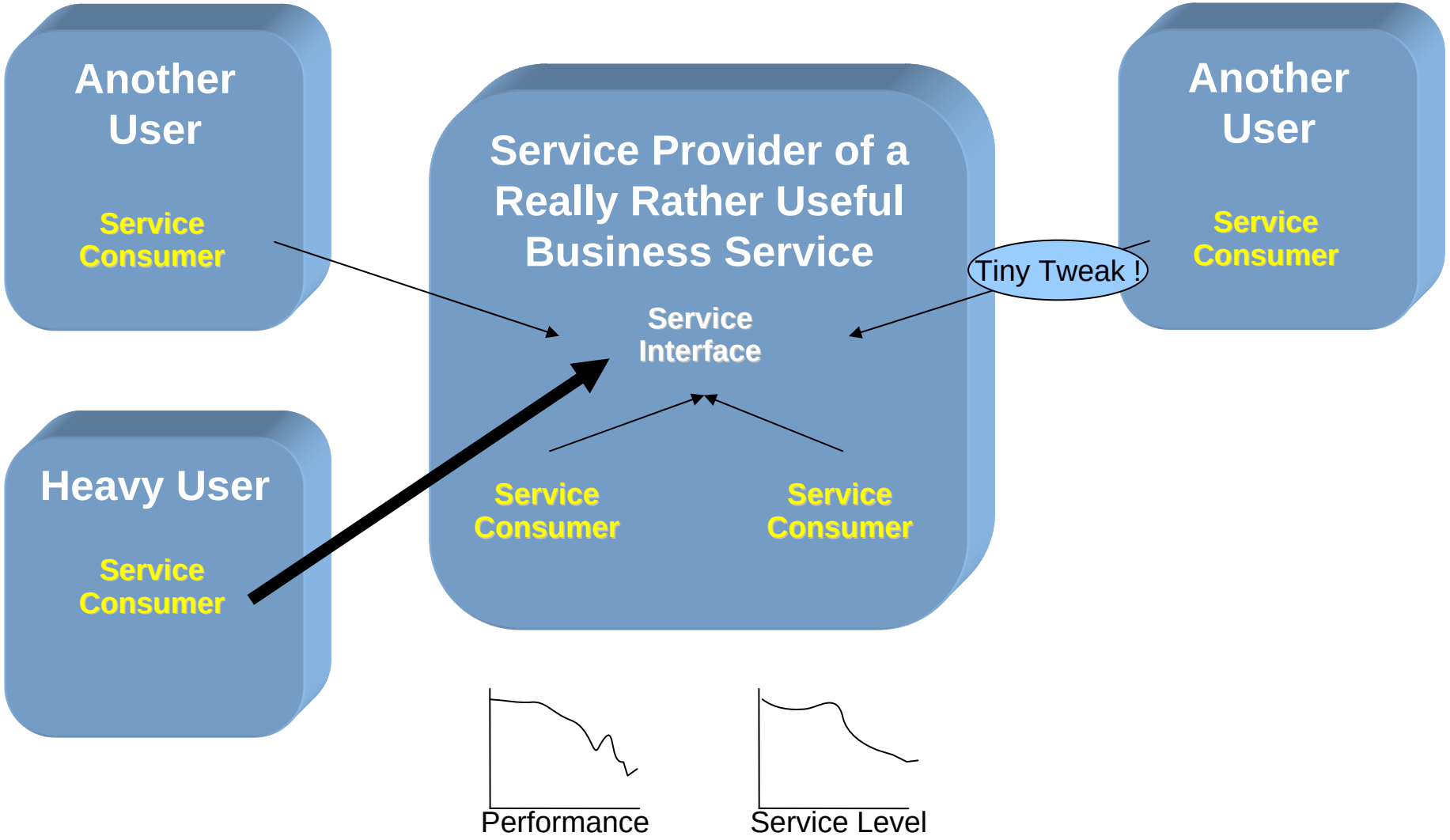
A Sorry Tale Part Two – another User



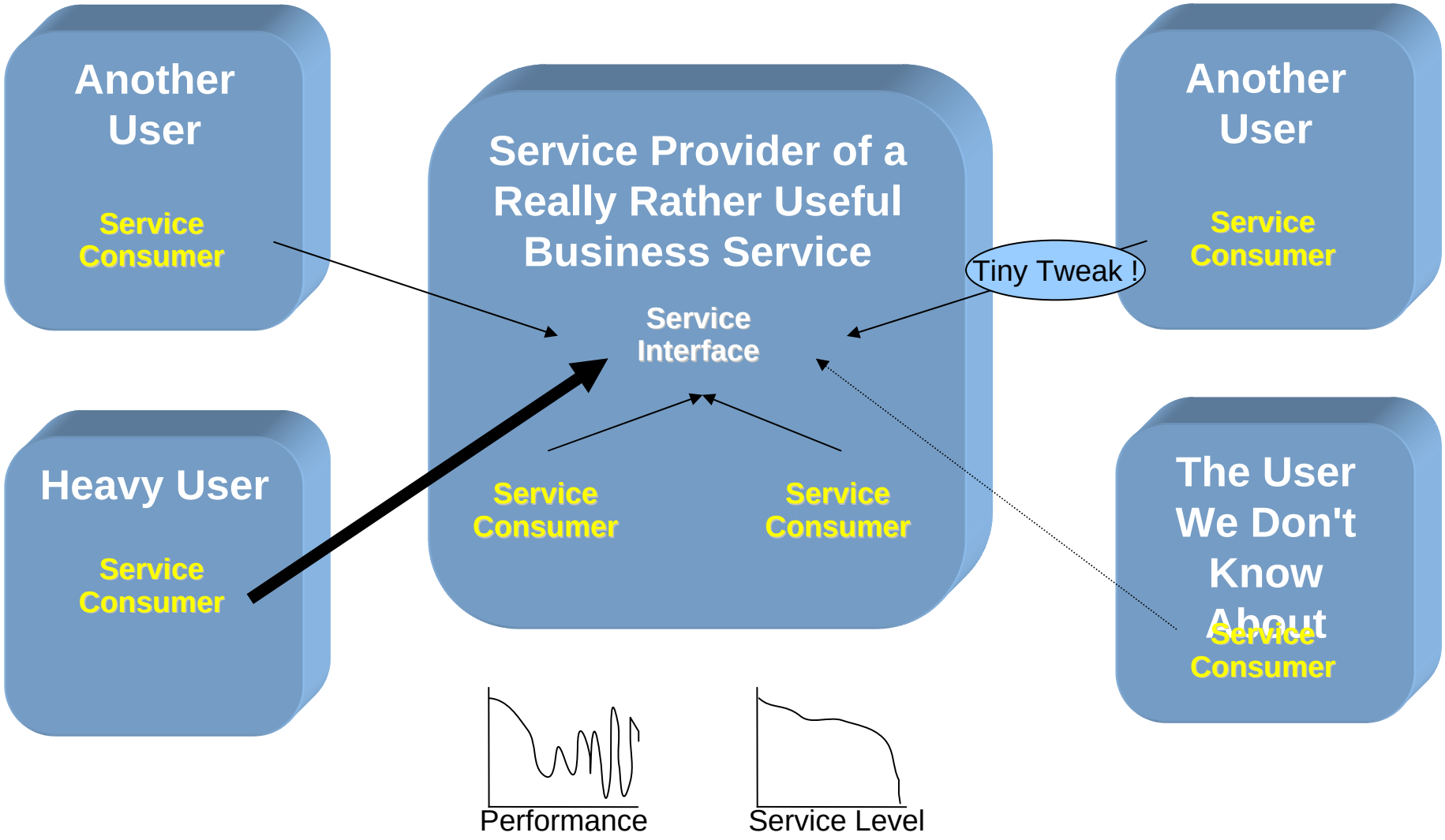
A Sorry Tale Part Three – another User and Change Request



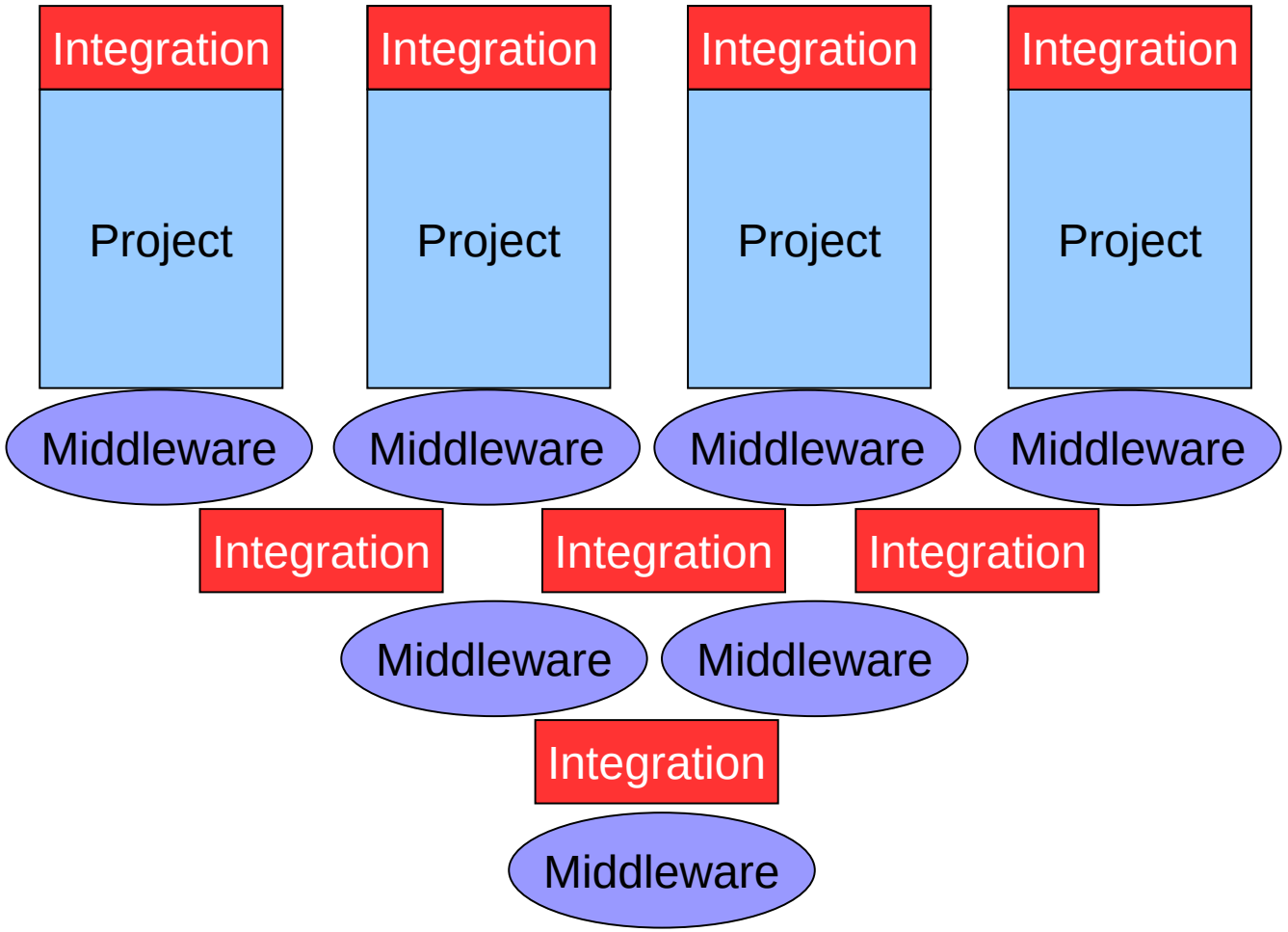
A Sorry Tale Part Four – Heavy User



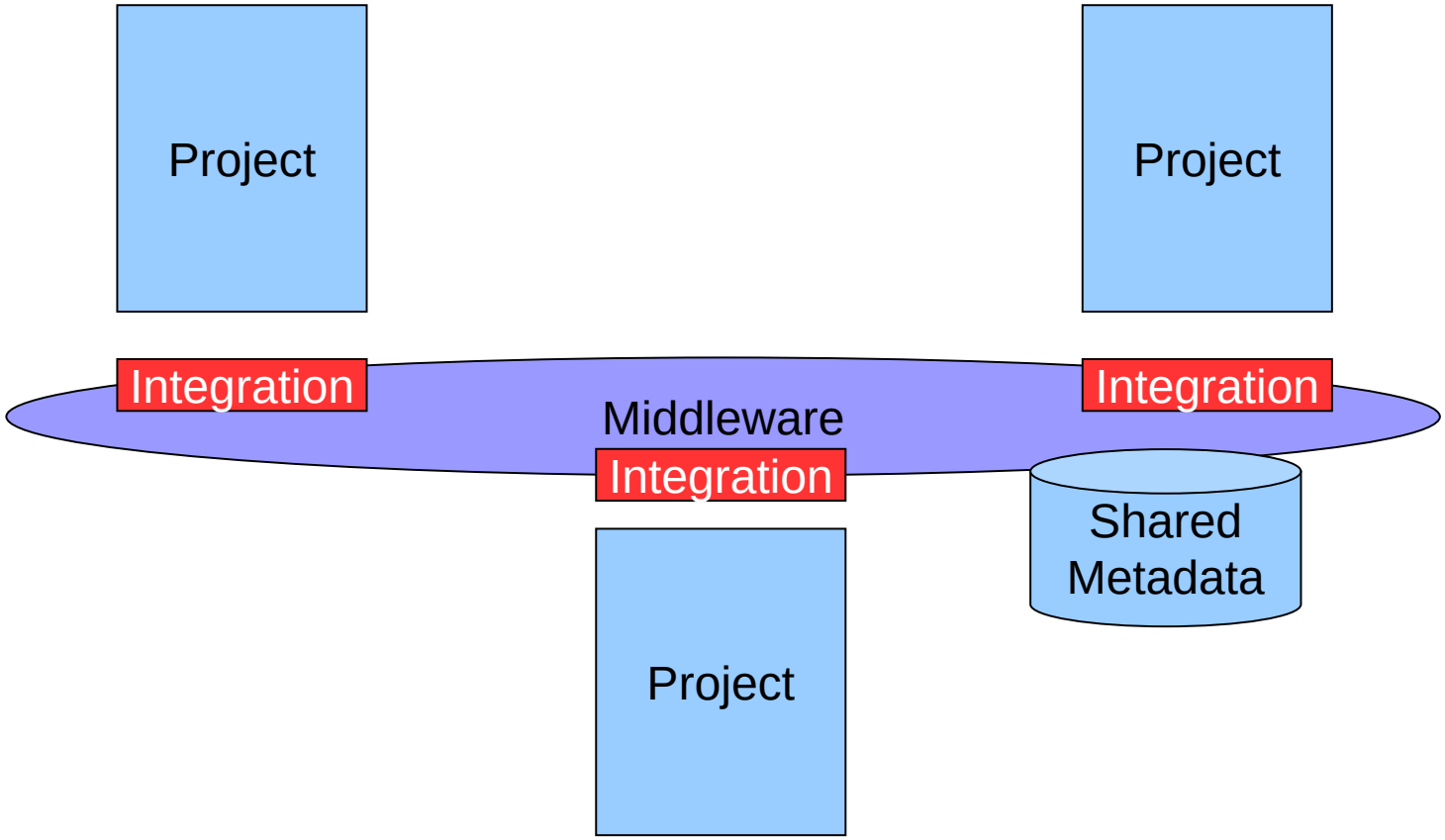
A Sorry Tale Part Five



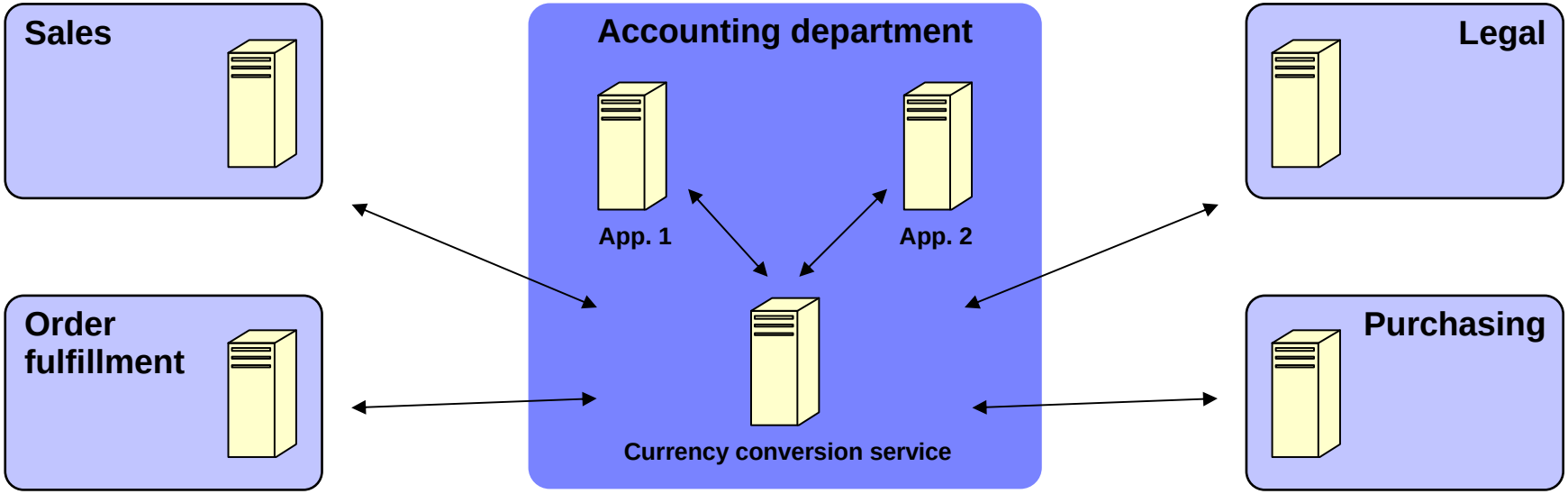
It gets worse !



Some IT is Infrastructure – Share IT !



Another One ...

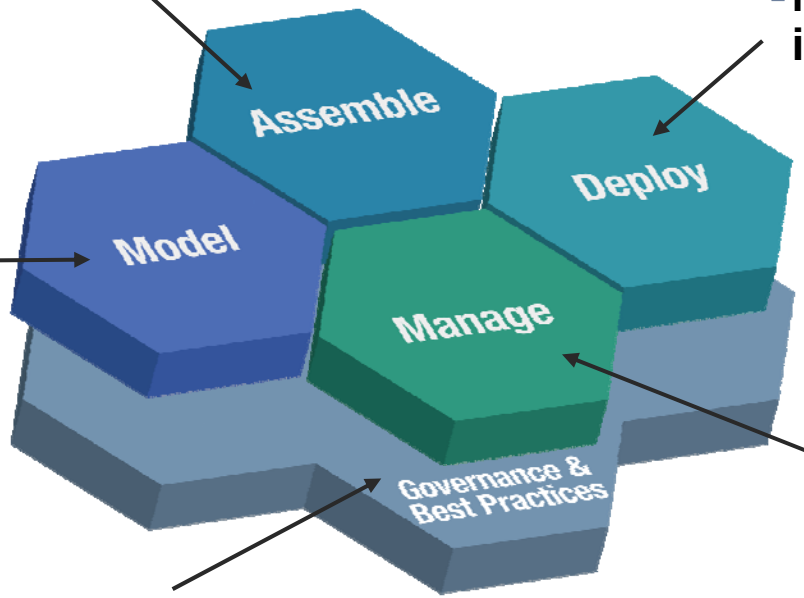


...Who Pays

Governance within the SOA Lifecycle

- Discover
- Construct & Test
- Compose

- Integrate people
- Integrate processes
- Manage and integrate information



- Gather requirements
- Model & Simulate
- Design

- Manage applications & services
- Manage identity & compliance
- Monitor business metrics

- Financial transparency
- Business/IT alignment
- Process control

Governance

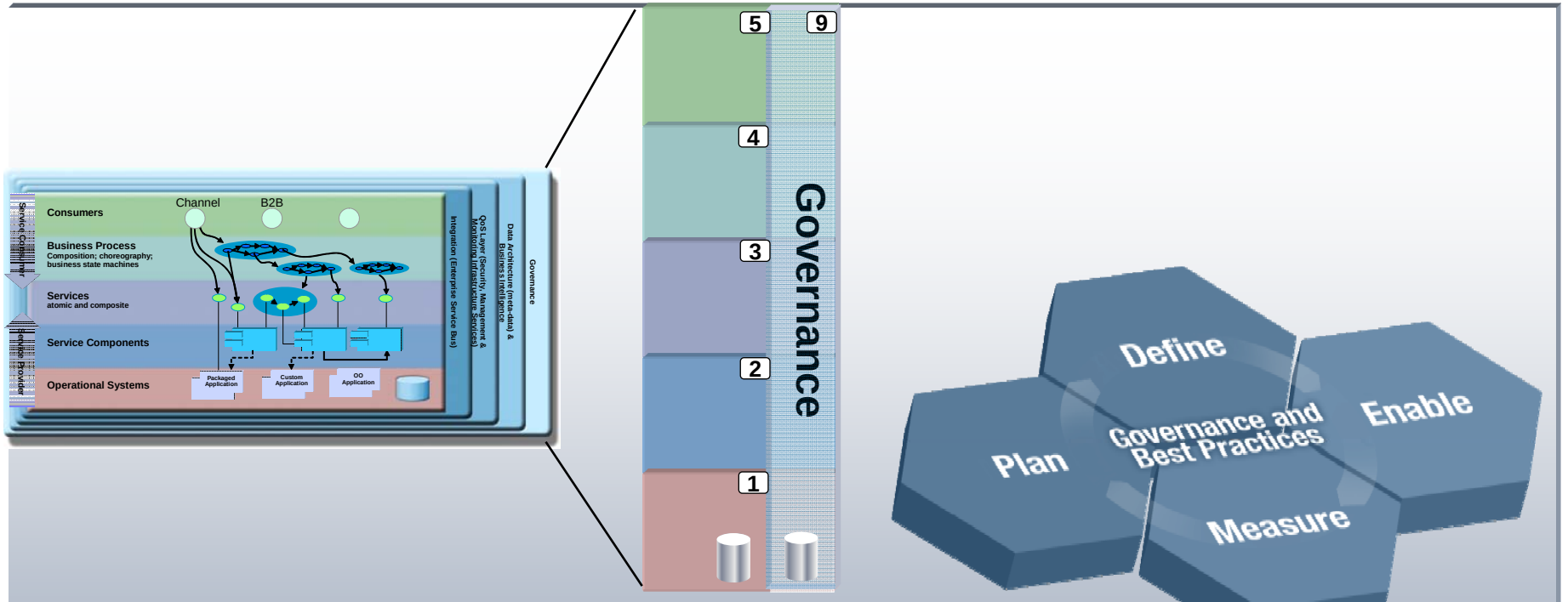
What is Governance?

Establishing **chains of responsibility, authority and communication to** empower **people (decision rights)**

Establishing **measurement, policy and control mechanisms to** enable **people to carry out their roles and responsibilities**

- Corporate Governance
- IT Governance
- EA Governance
- SOA Governance

What is SOA Governance?



SOA Governance?

Extension of IT Governance focused on the lifecycle of services **to ensure the business value of SOA**

SOA Governance is a catalyst for improving overall IT Governance

Service Governance within SOA Governance

Service Governance – the governing of the **individual** service lifecycle management process to maximize how that particular service delivers business value and enables the goals of the business.

SOA Governance – solution portfolio level

- **Process Modeling Services**
- **Metadata Model**
- **Organizational Change**
- **Human Collaboration**
- **Portfolio Management**
- **Risk Management**

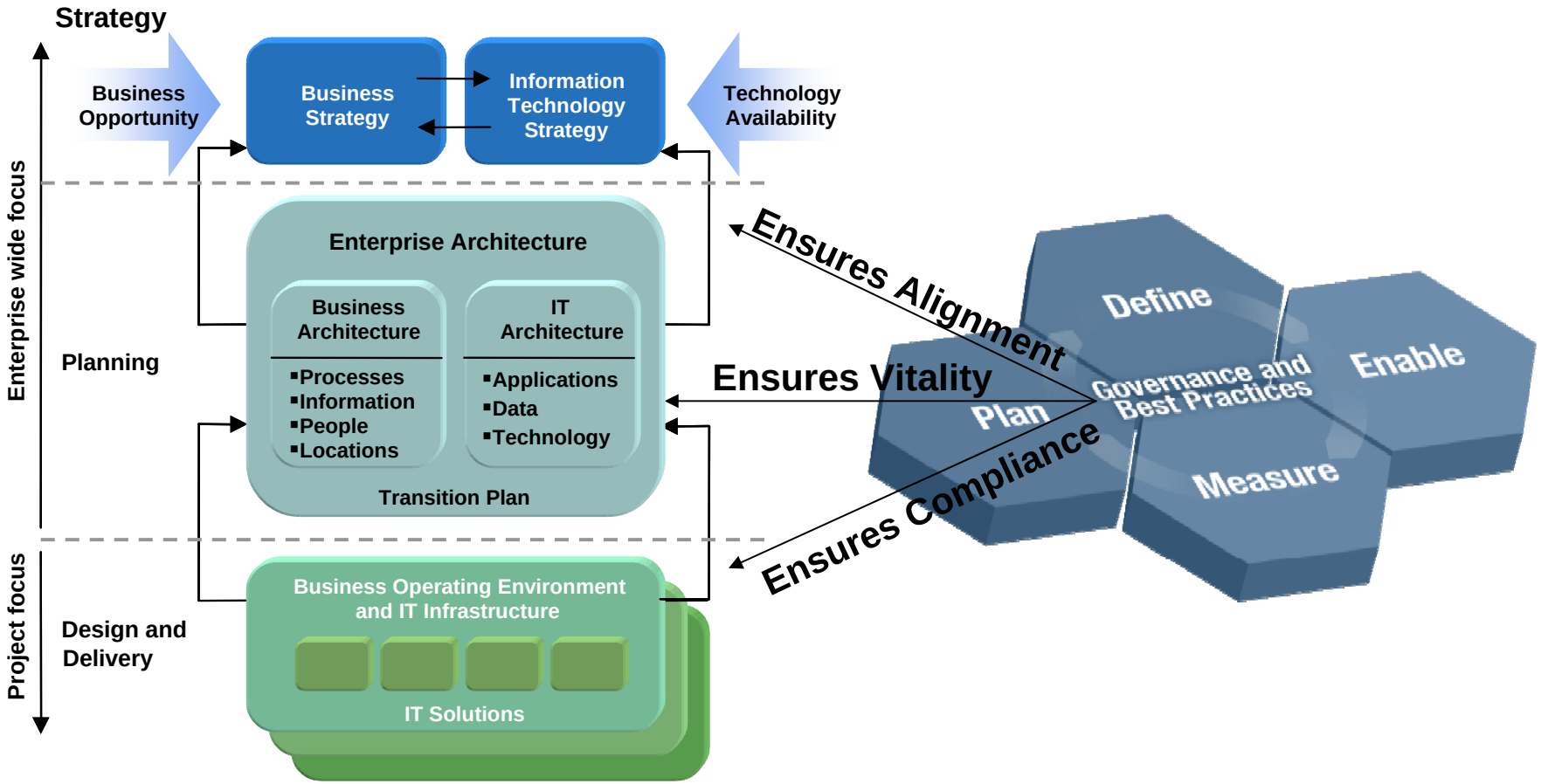
Service Governance – project service level

- **Registry & Repository Support**
- **Policy Lifecycle Management**
- **Change Management**
- **Service Lifecycle Model**
- **Service Level Agreement**
- **Dashboards & Other Presentation**
- **Decision Rights Management**

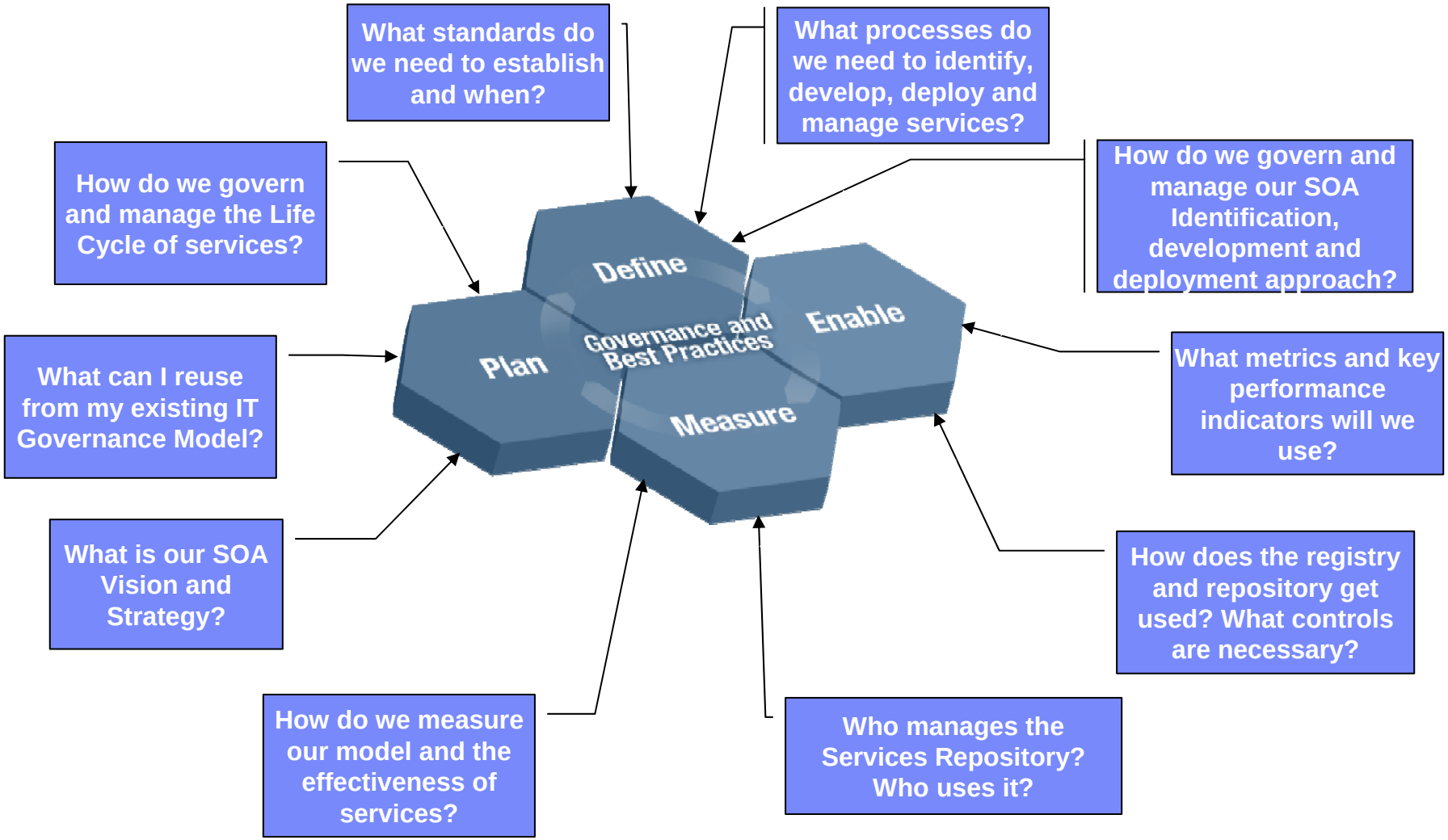
Why Governance Matters

- **Realize business benefits**
  - **Business process flexibility**
  - **Improved time to market**
- **Mitigate business risk and regain control**
  - **Maintaining quality of service**
  - **Ensuring consistency of service**
- **Improved team effectiveness**
  - **Measuring the right things**
  - **Communicating clearly between business and IT**

Enterprise Architecture and Governance



SOA Governance Life Cycle Addresses Key Questions



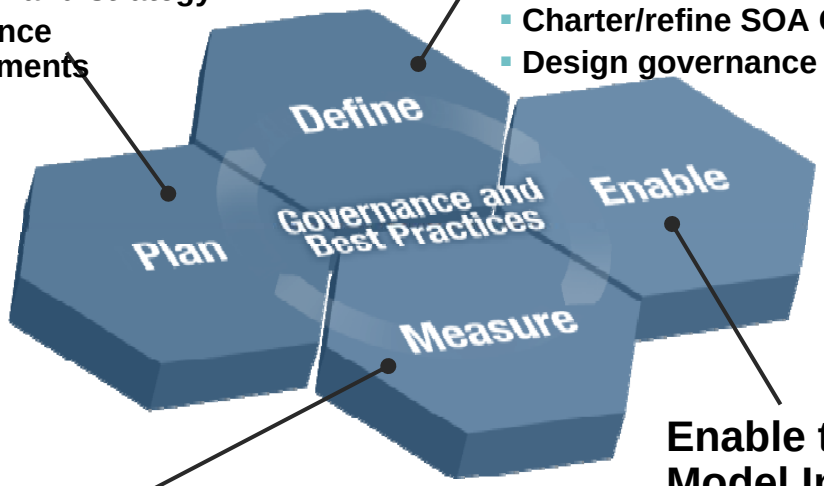
SOA Governance Lifecycle – How to establish?

Plan the Governance Need

- Document and validate business strategy for SOA and IT
- Assess current IT and SOA capabilities
- Define/Refine SOA vision and strategy
- Review current Governance capabilities and arrangements
- Layout governance plan

Define the Governance Approach

- Define/modify governance processes
- Design policies and enforcement mechanisms
- Identify success factors, metrics
- Identify owners and funding model
- Charter/refine SOA Center of Excellence
- Design governance IT infrastructure



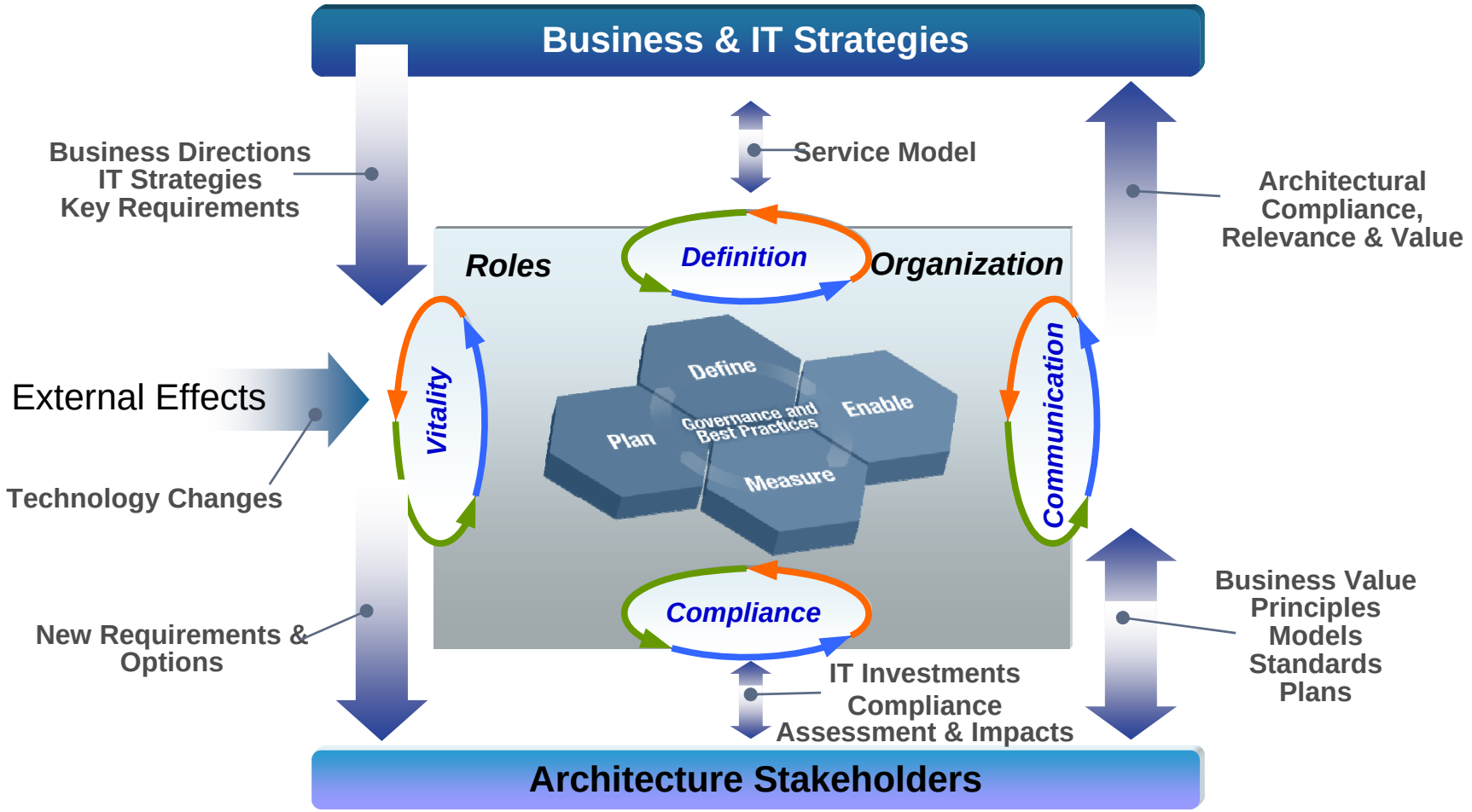
Monitor and Manage the Governance Processes

- Monitor compliance with policies
- Monitor compliance with governance arrangements
- Monitor IT effectiveness metrics

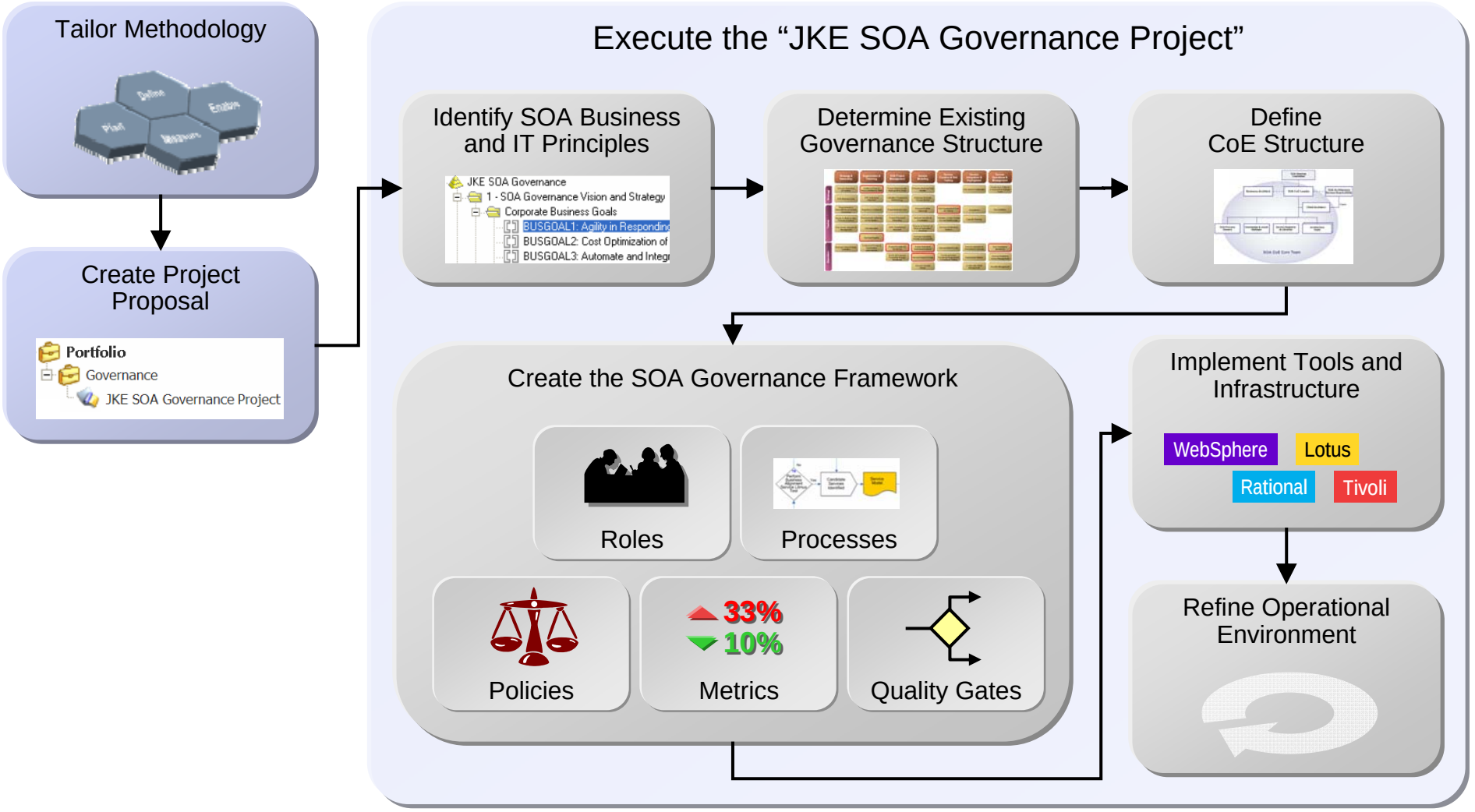
Enable the Governance Model Incrementally

- Deploy governance mechanisms
- Deploy governance IT infrastructure
- Educate and deploy on expected behaviors and practices
- Deploy policies

SOA Governance Considerations – What is required ?
Processes, Roles and Organization

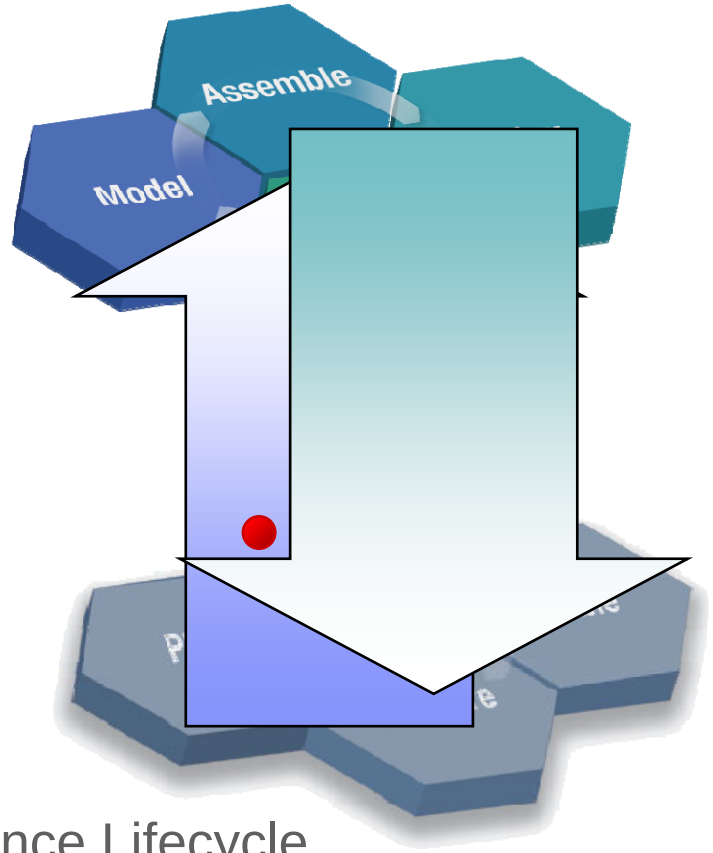


Example: Defining the Governance Solution



Interaction Between the Lifecycles

Service Lifecycle

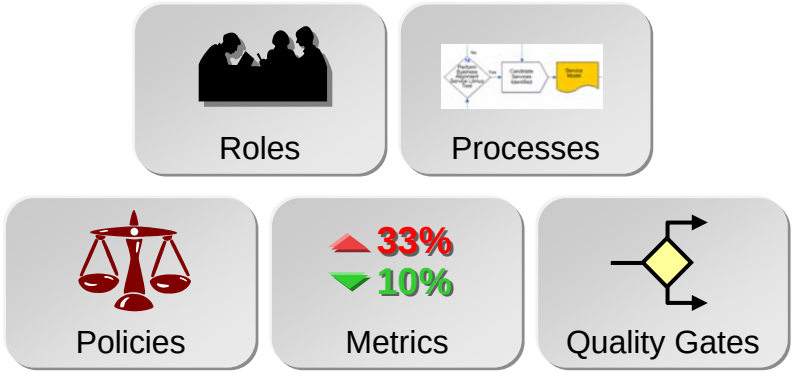


Governance Lifecycle

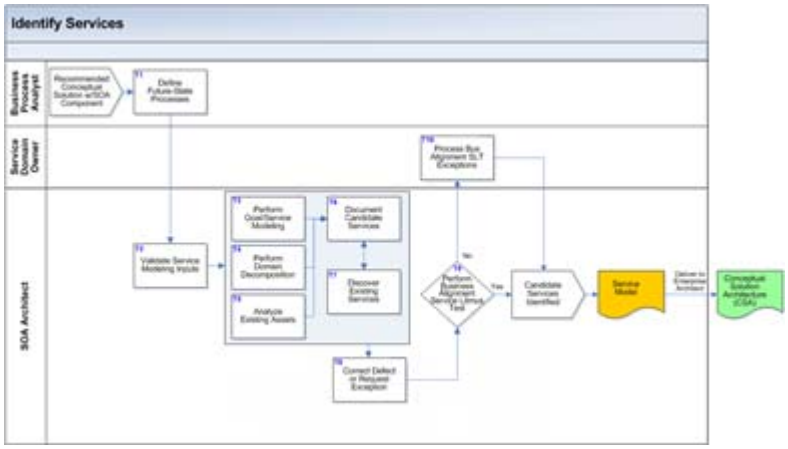
- Policies
  - **quality gates**
  - **controls**
  - **metrics**
  - **standards**
- **are *defined* in the Governance lifecycle (for different aspects of Governance)…**
- **…and they are *enforced* in the service lifecycle**
- **metrics are captured to improve governance process**

The Governance Framework (Extensions to Development Processes)

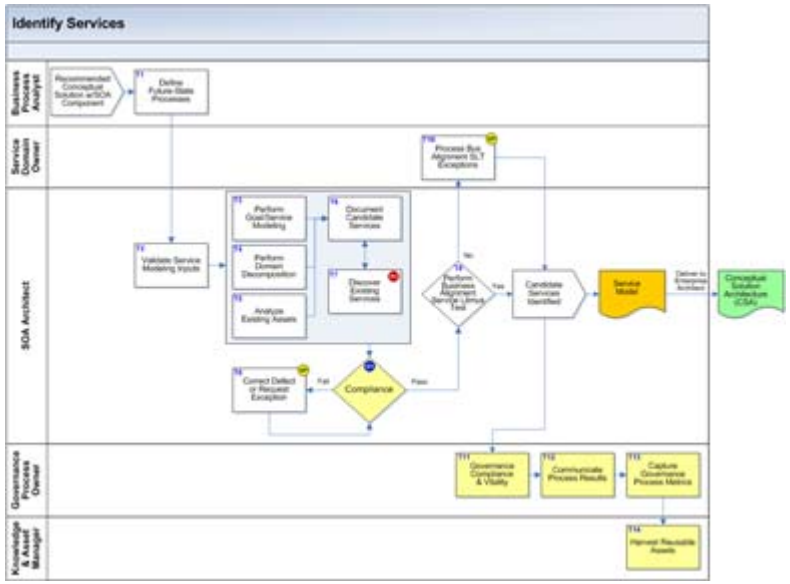
- **All the "elements" that we need to add to make a process well-governed**



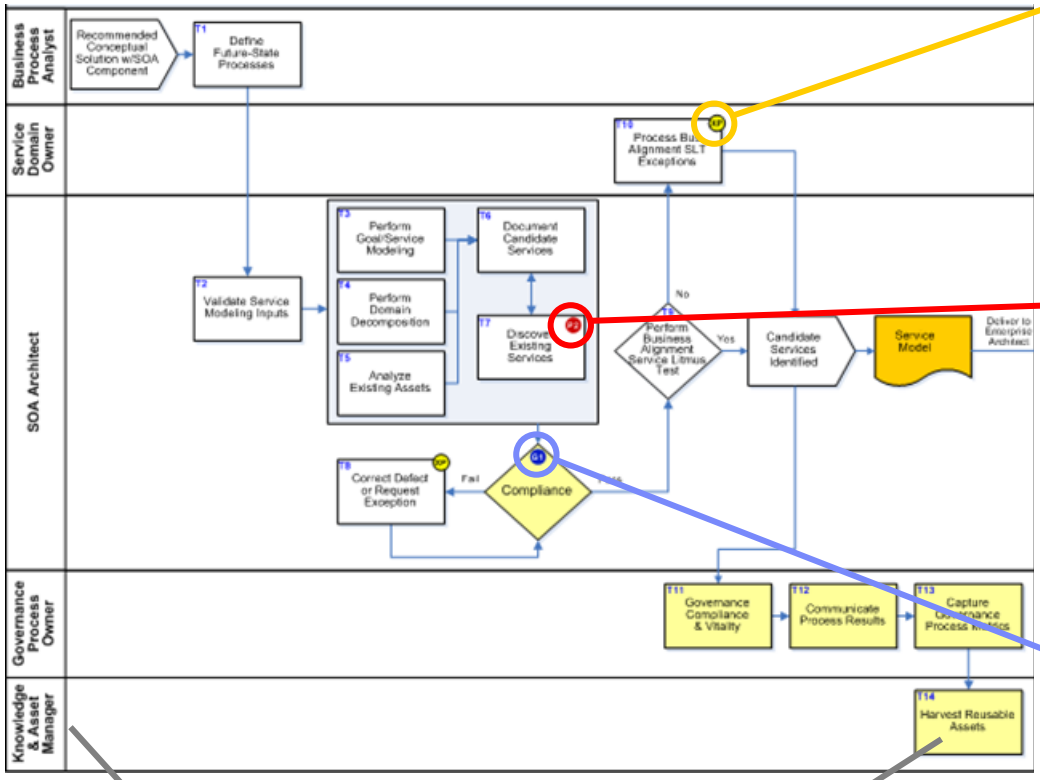
non-governed process



well-governed process



Example – Enforcement at Development Time



exception procedure

Implement Service that failed Litmus test

human decision

policy

Services should be reused instead of created whenever possible

registry lookup

quality gate

Services must be compliant with the existing reference architecture

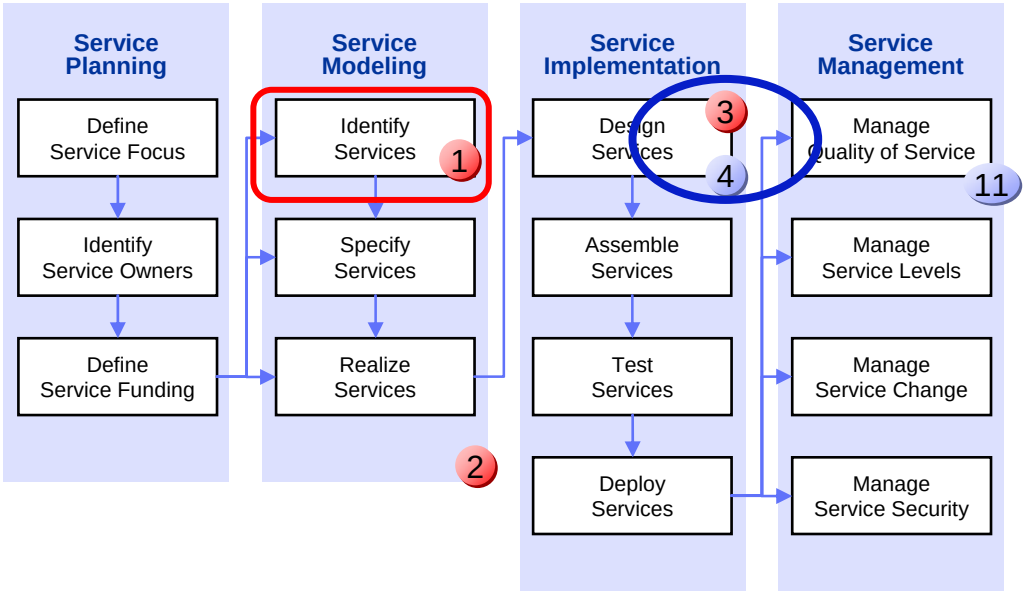
review

new roles

new activities

Example – Enforcing Service Reuse Policy

- **During the "Identify Services" activities, the SOA Architect implements the Service Reuse policy searching for existing services**
- **At the Validate Service Design quality gate the policy is enforced**

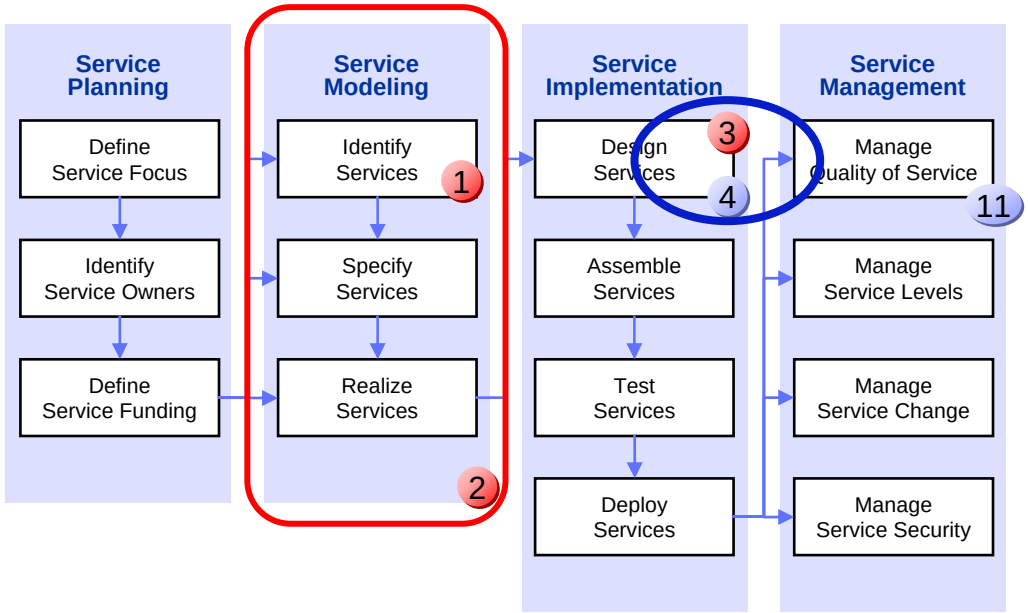


Policy 1 Services should be reused instead of created whenever possible

Quality Gate 4 Validate Service Design, semi-automatic enforcement during development

Example – Enforcing Architecture Compliance Policy

- **The SOA Architect implements the Compliance with the Reference Architecture policy during all the activities in the Service Modeling phase**
- **At the Validate Service Design quality gate the policy is enforced with a manual review of the service model**



Policy 2 Services must be compliant with the existing reference architecture

Quality Gate 4 Validate Service Design, manual enforcement during development

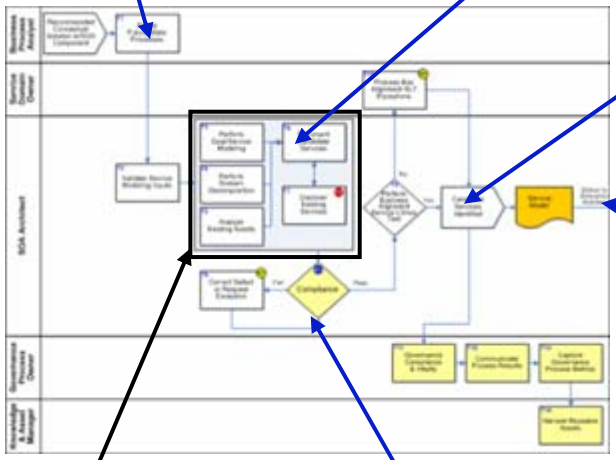
Governance at Development Time – Enforcing Policies of Services Life Cycle

Ensure Compliance and Define Policies

1. Service state transitions are defined based on governance solution

2. Validate Service Ownership

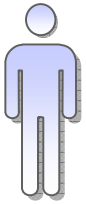
3. Registry Lookup to enforce reuse of existing services



5. Publish Service to repository after Litmus test is successful

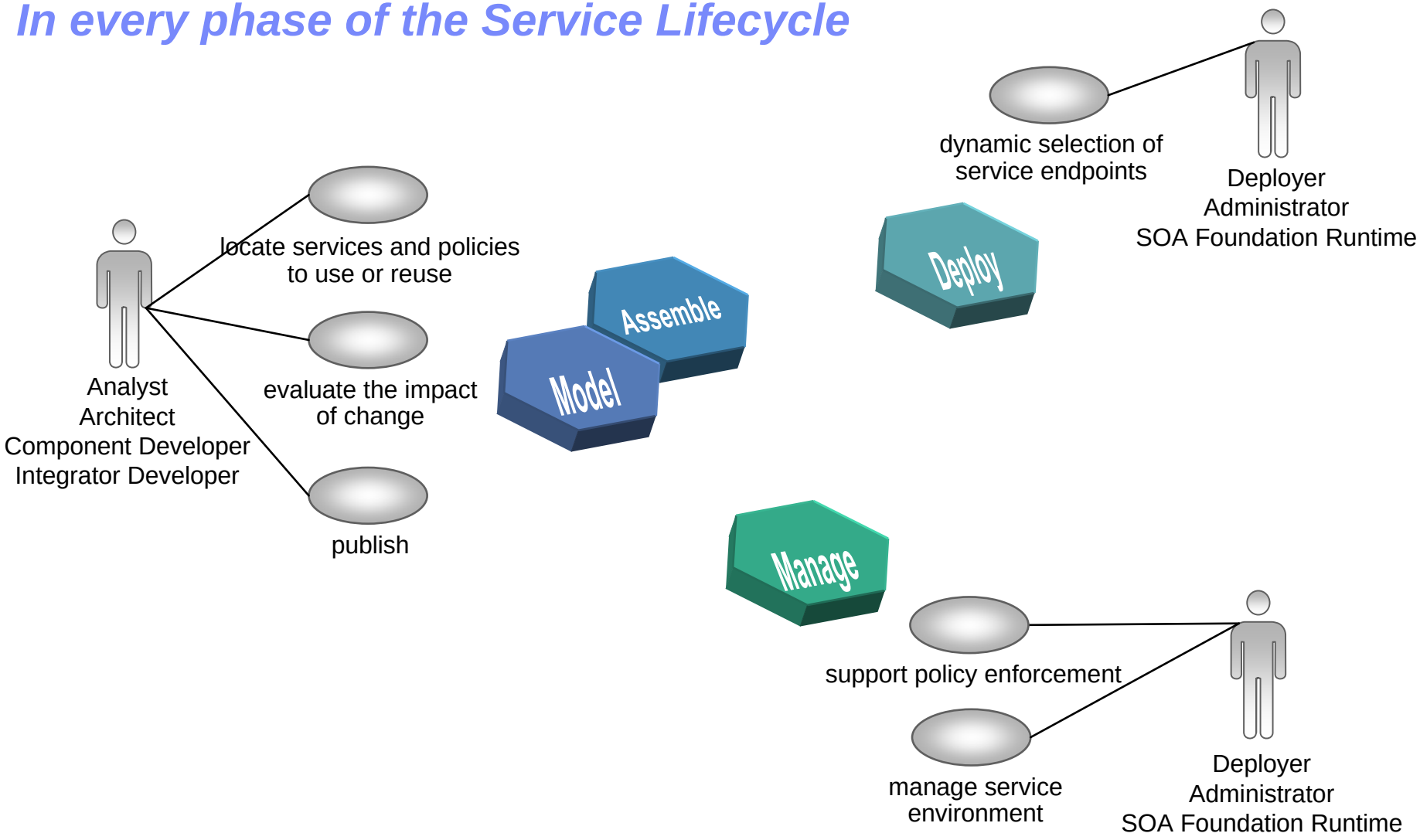
6. Add a Policy for Dynamic Binding

Service Analysis and Design

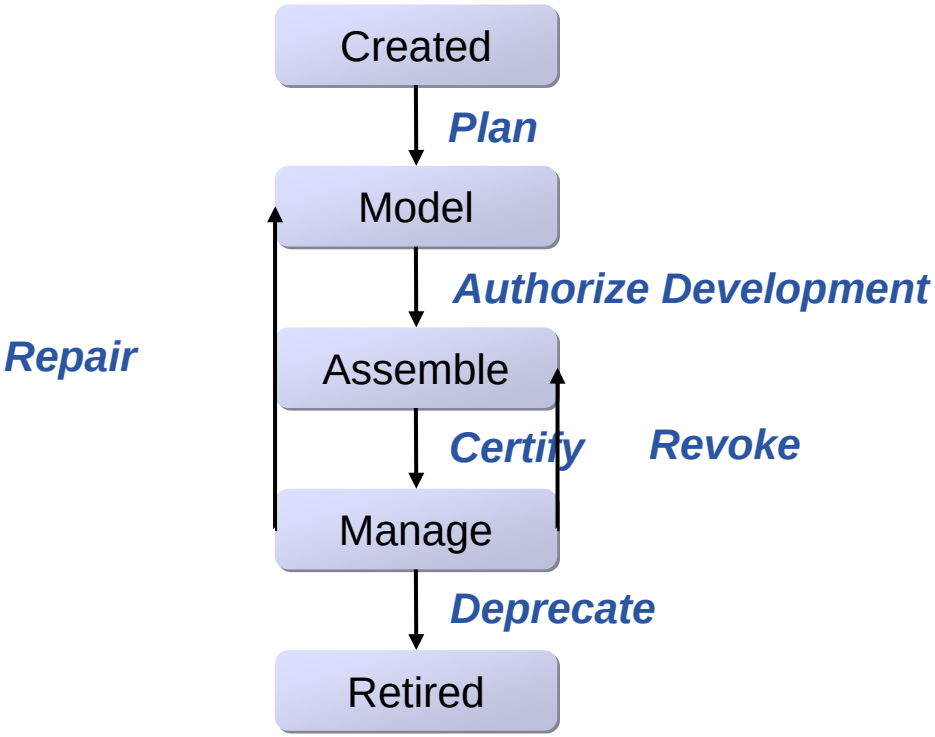


4. Validate Service Design for Standards Compliance

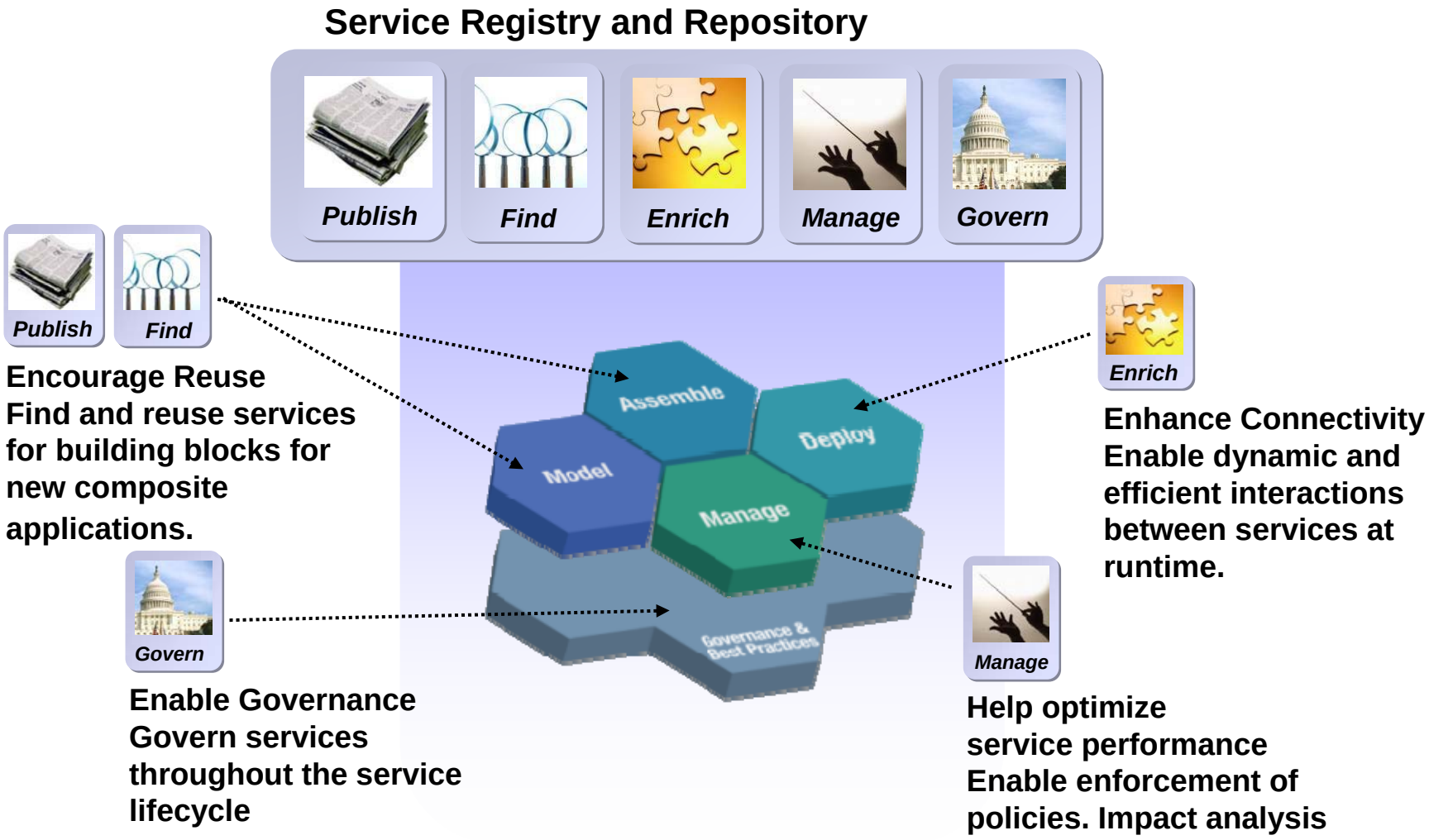
When is a Repository Used?
In every phase of the Service Lifecycle



Supporting the Steps of Service Life Cycle

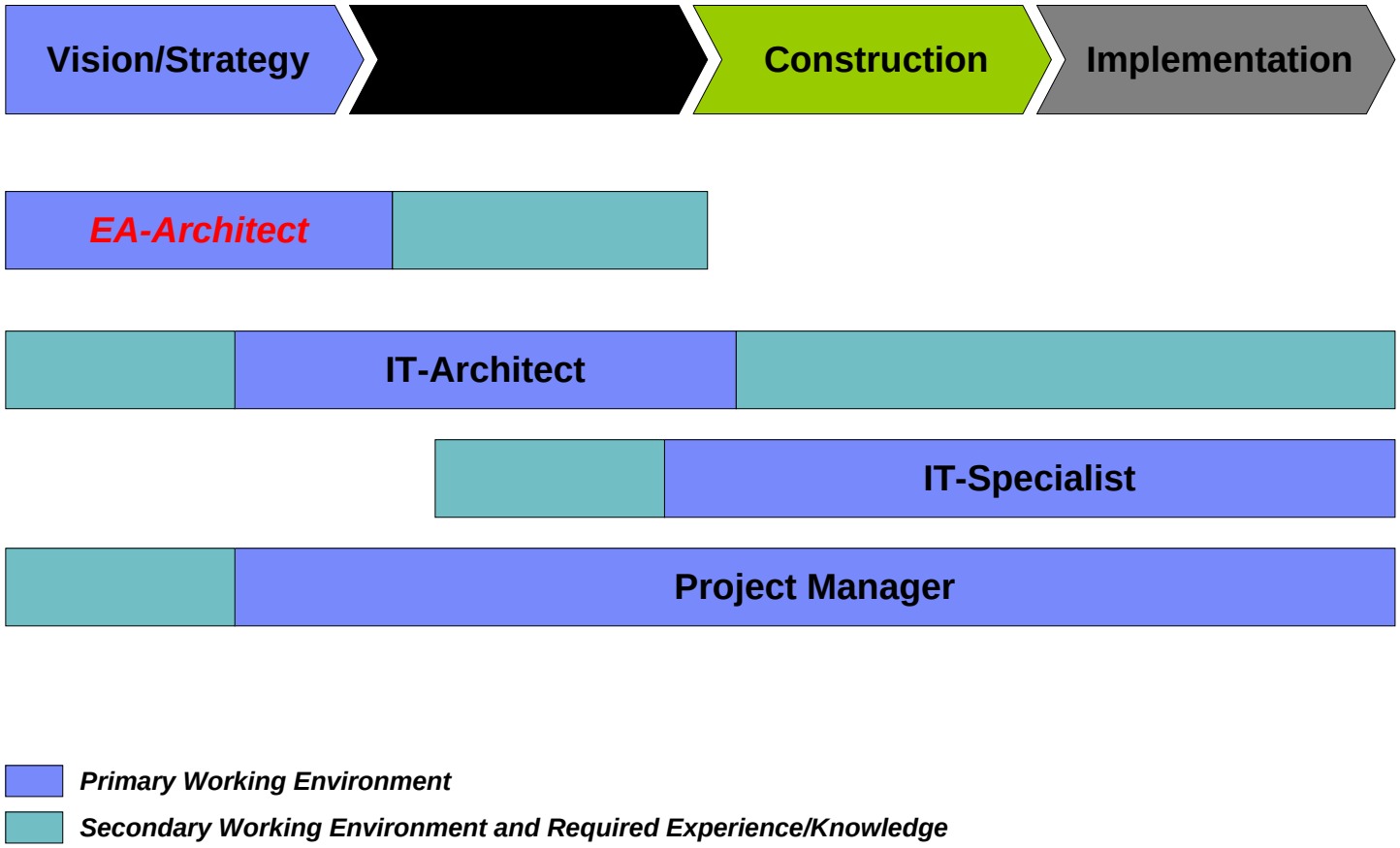


Main Capabilities of Service Registry and Repository

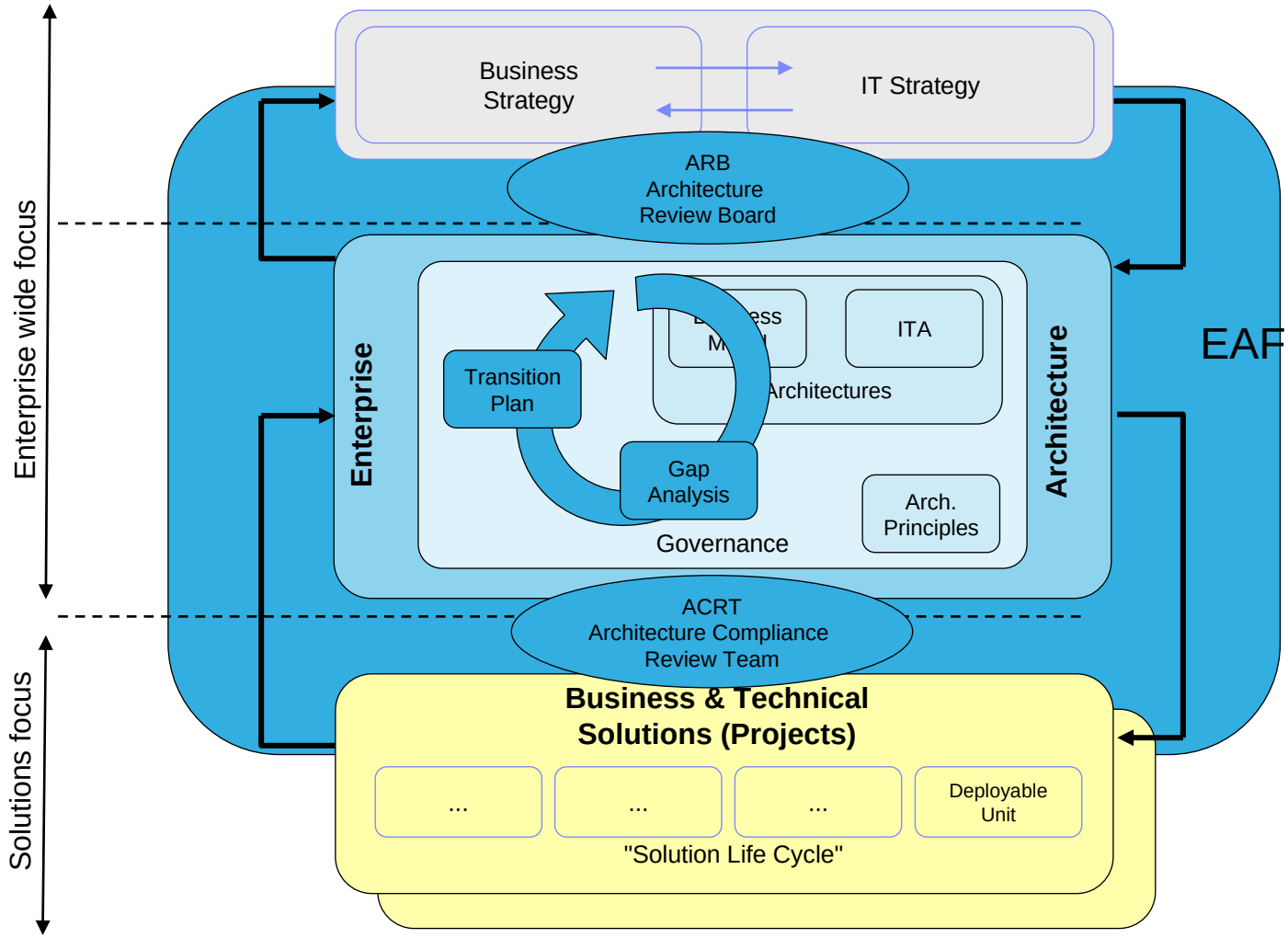


Enterprise Architecture – Governance, Transition

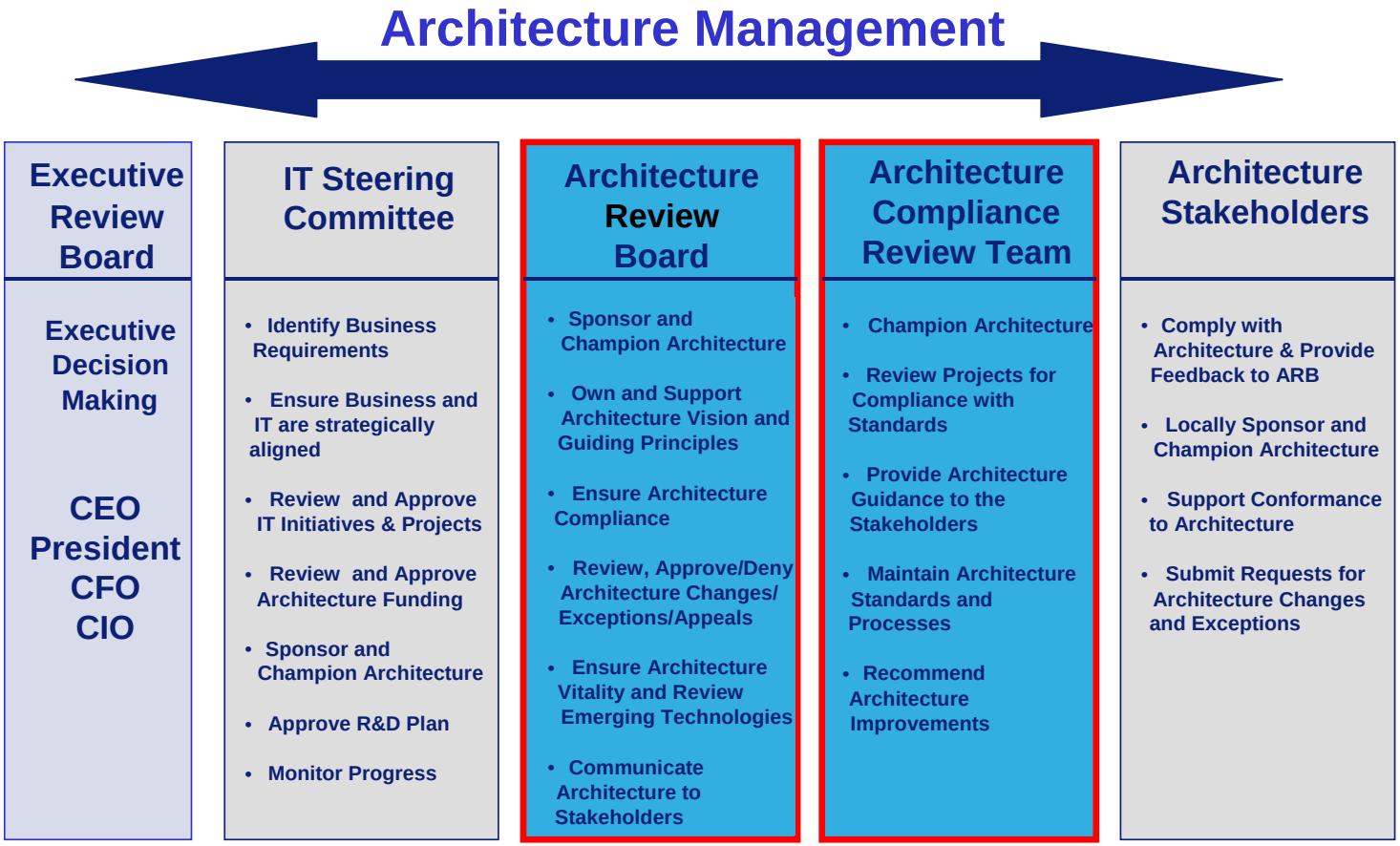
EA Architects are primarily involved in strategy and solution design stages



Committees for ensuring Enterprise Architecture

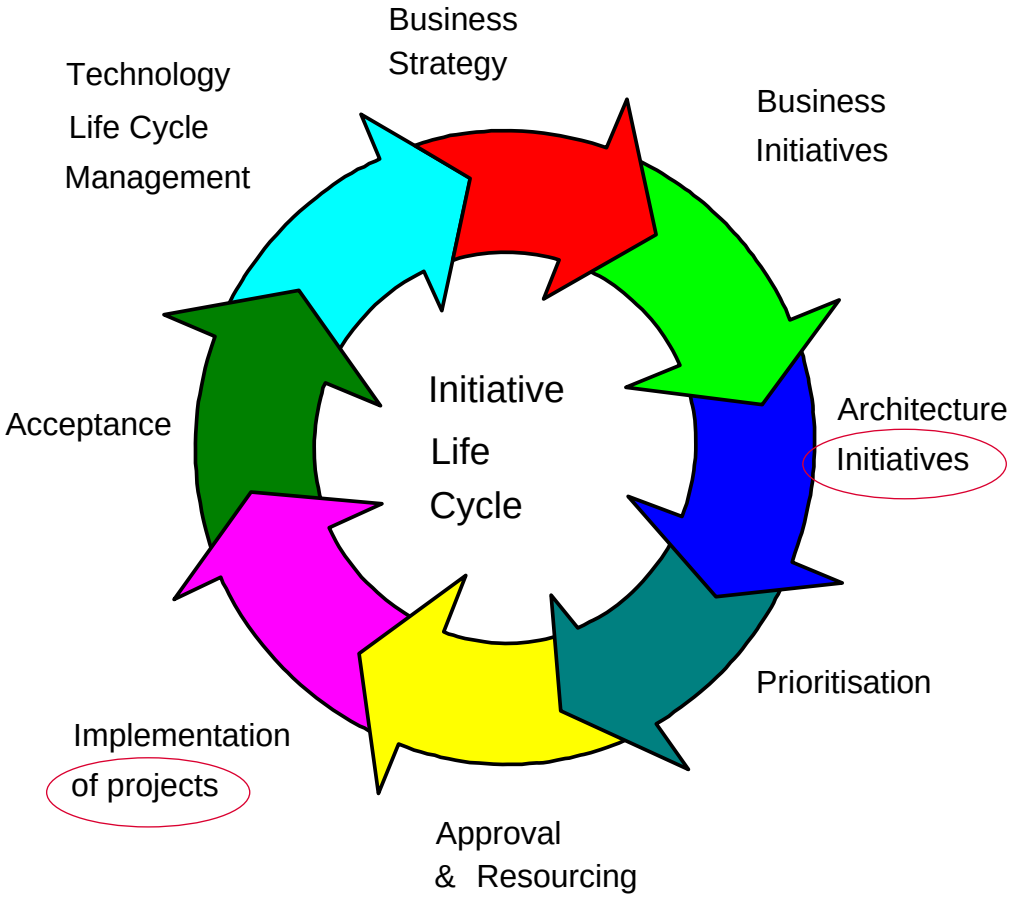


EA Governance – Overview of the boards/committees

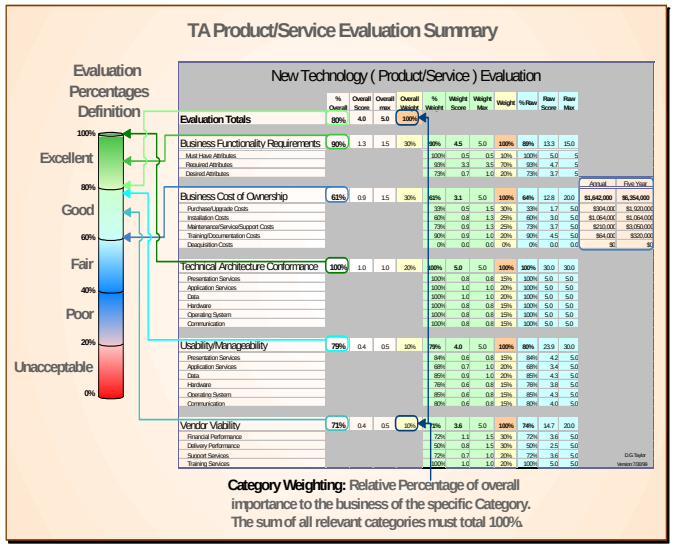


Transition initiatives need to be prioritized and approved as part of the overall IT Operating Plan for the enterprise

- **EA inspired initiatives should be considered alongside all requests for IT resource (development and implementation):**
  - **Business driven**
  - **Technology driven**
  - **Architecture driven**



So as well as guiding development, the EA framework must also provide transition “roadmaps”

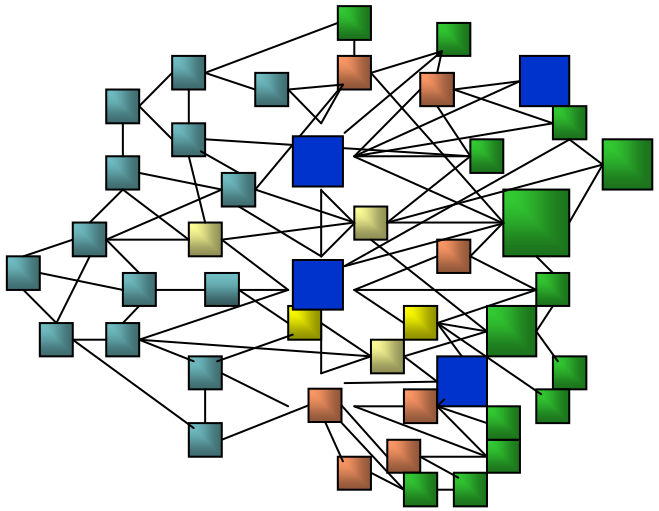


Preferred Product Analysis: Selection Criteria

Building Block: Operating System

Current	Migration	Future
Current Environment OS/390, USS390, OS/400, AIX, Solaris, Unix, Win 9x, 2000, Novell, OS/2, MacOS	**Tactical Deployment** zOS, Solaris, Win2000, WinXP	**Strategic Direction** zOS, Solaris, WinXP, 2003
Retirement Targets Win9x, Novell		**Preferred** zOS, Solaris, Windows
Sunset Targets OS/400, MacOS, Win 2000 non-Solaris Unix		**Emerging Linux,** Autonomic, Virtualisation, Integration, Consolidation

SOA Approach Illustrated



Without SOA:

Integration is done with ***"hardwiring"***

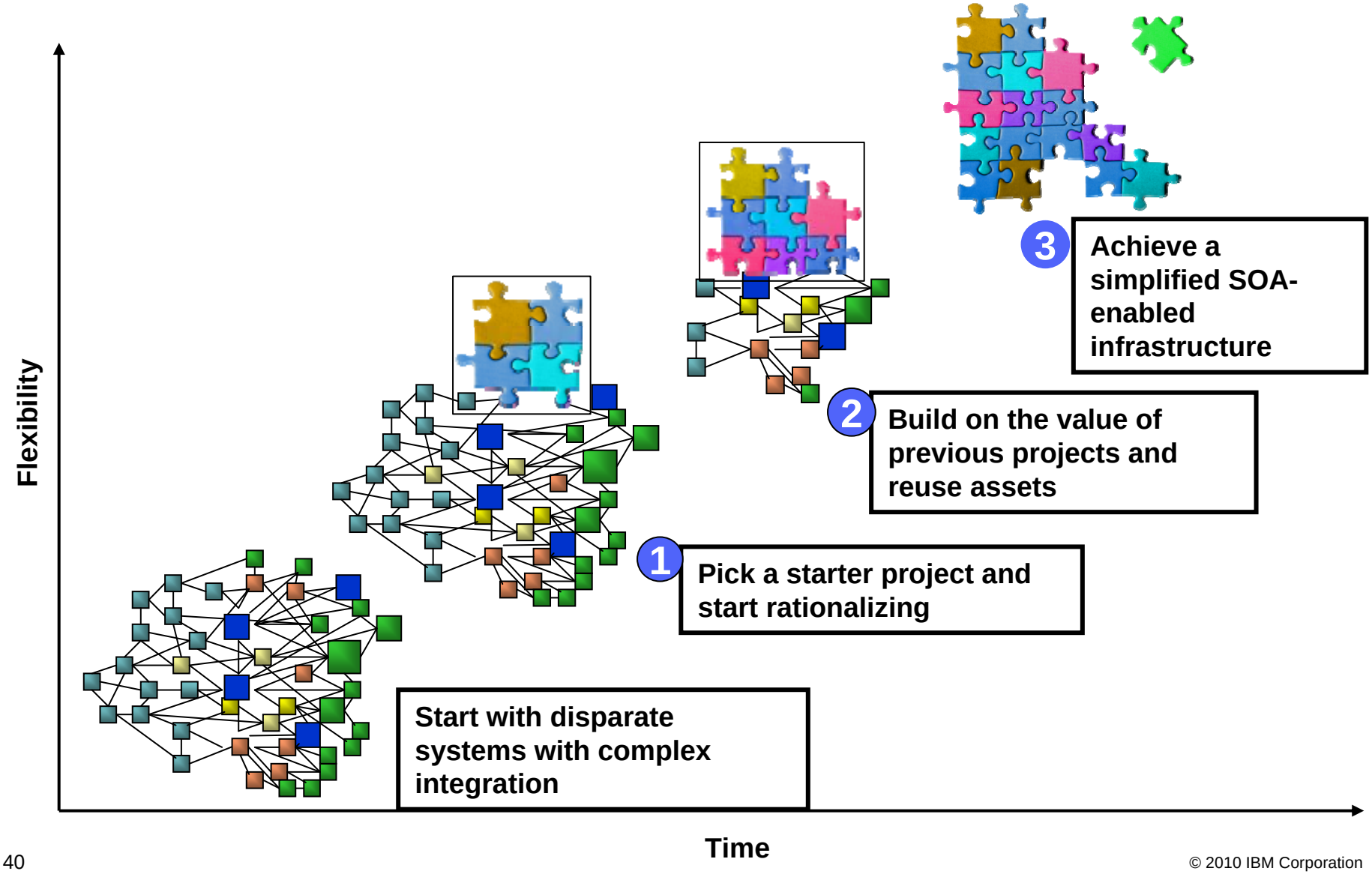
Applications have to be ***"ripped and replaced"***

With SOA:

Integration is done ***"loosely"*** with modular "services"

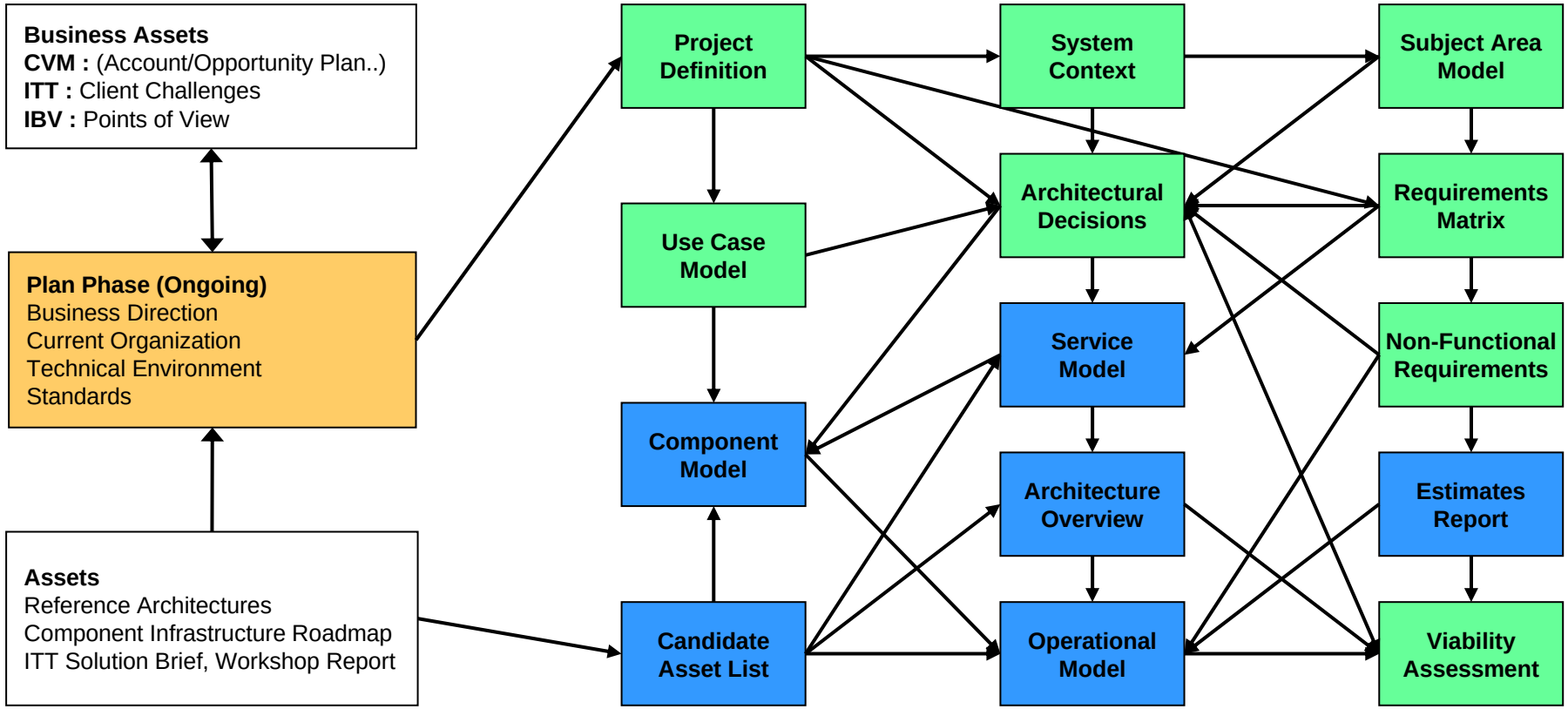
New services can be built flexibly by ***reusing assets***

SOA Roadmap Illustrated over Time

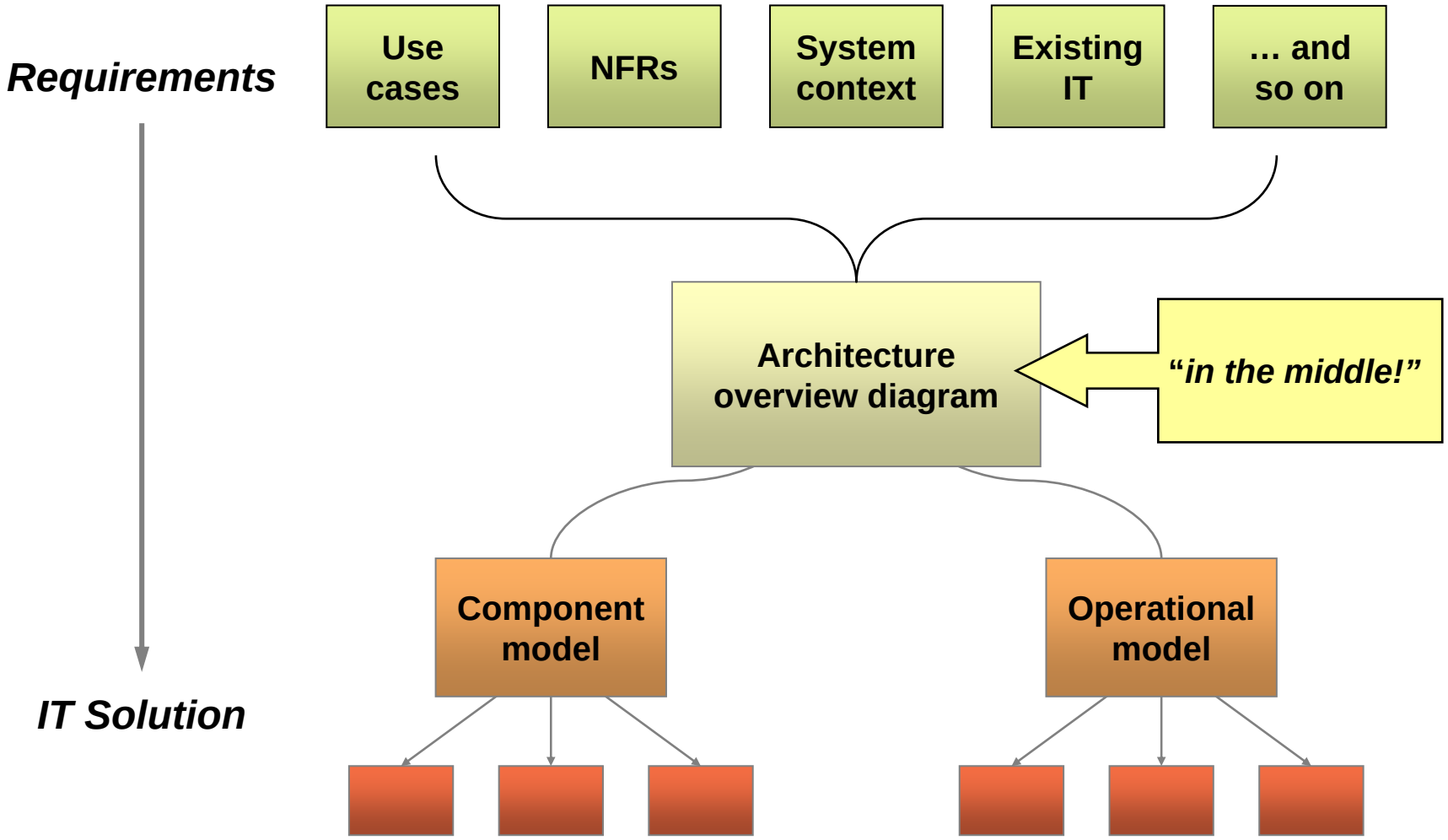


Recap Methodology – focussed on SOA Solution Design

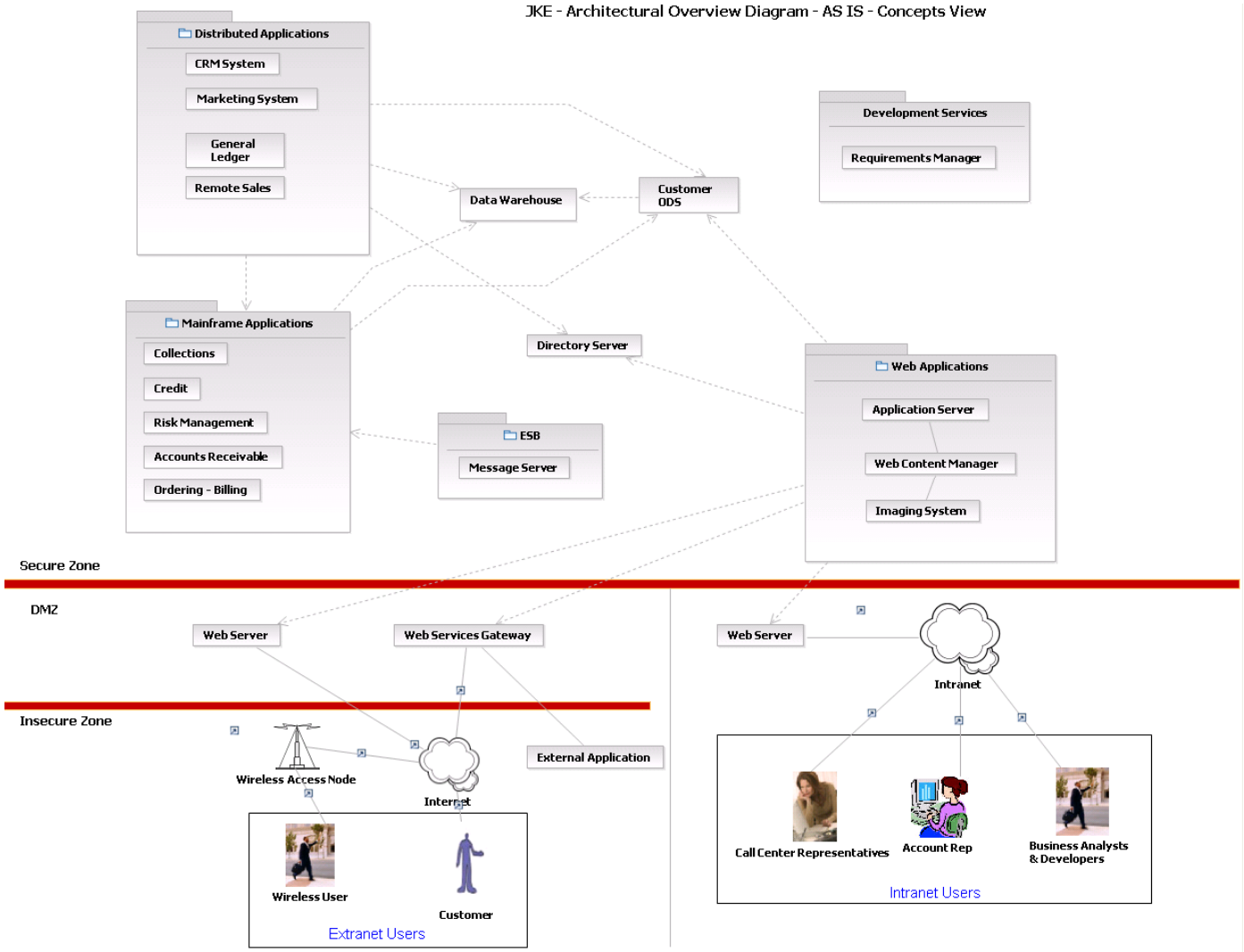
IT Architect's Tool Box: Work Product Dependency Diagram – Work Products are the Artifacts of Architecture Work



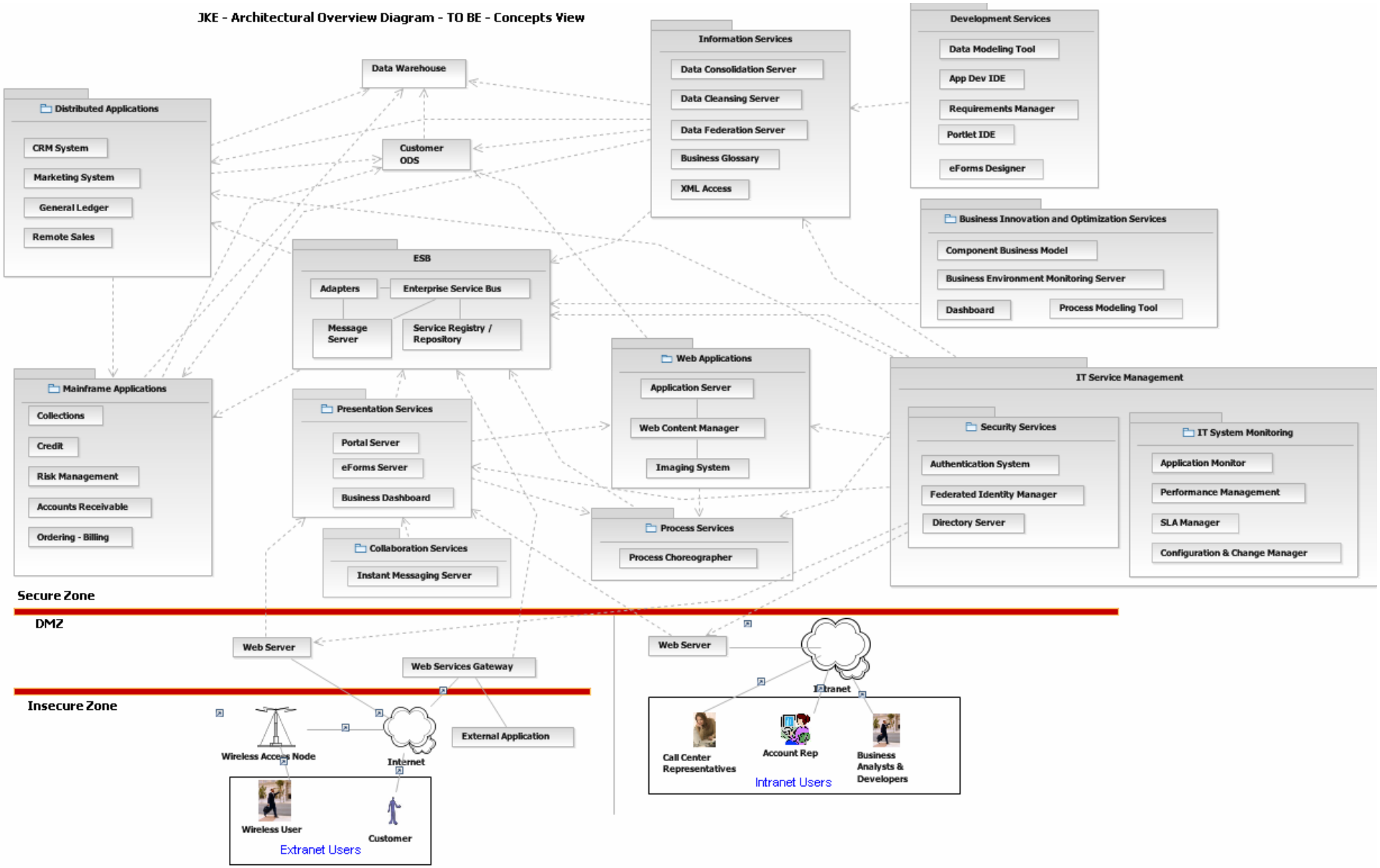
Where does the Architecture Overview Diagram fit?



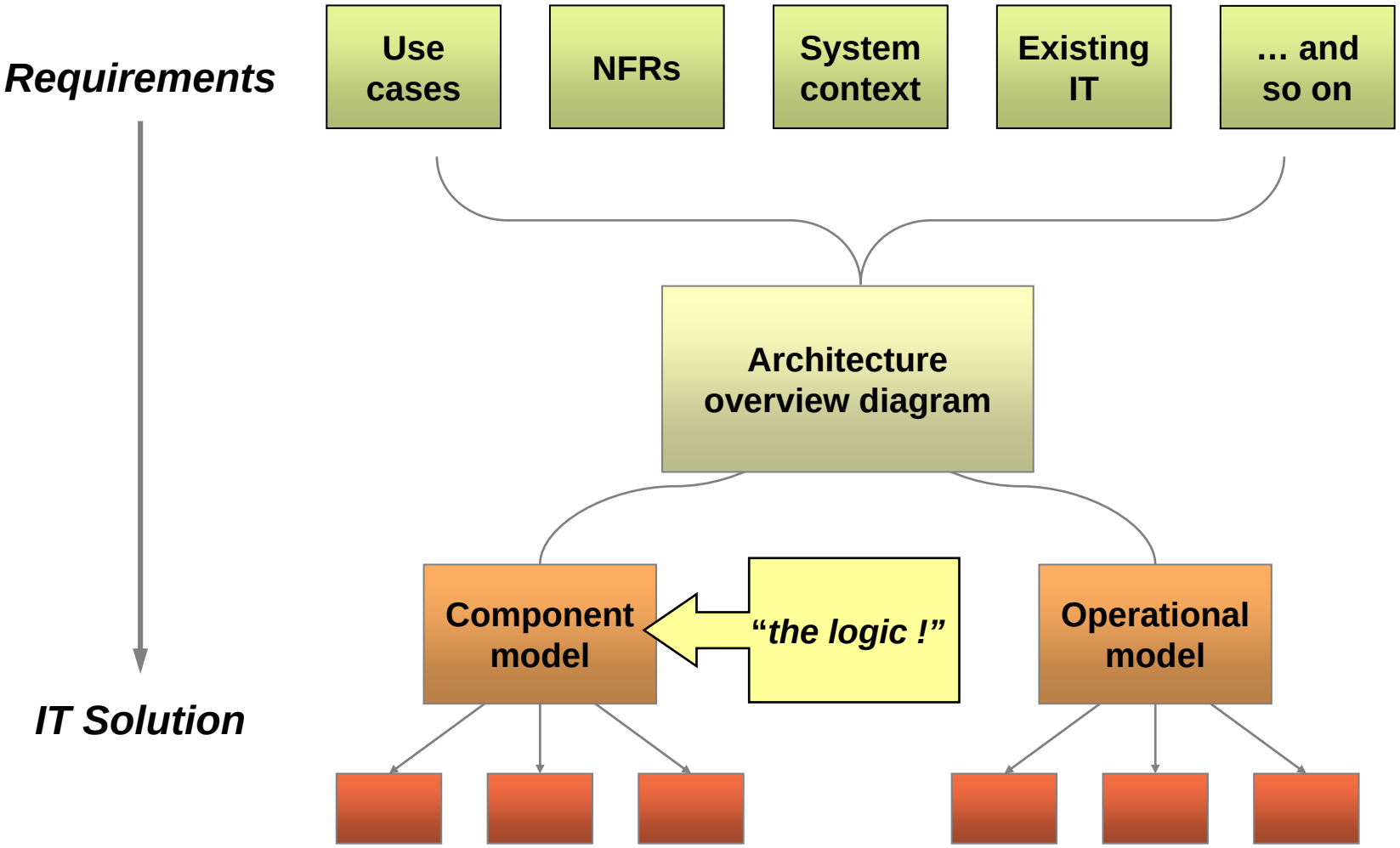
Example As-Is Architectural Overview Diagram



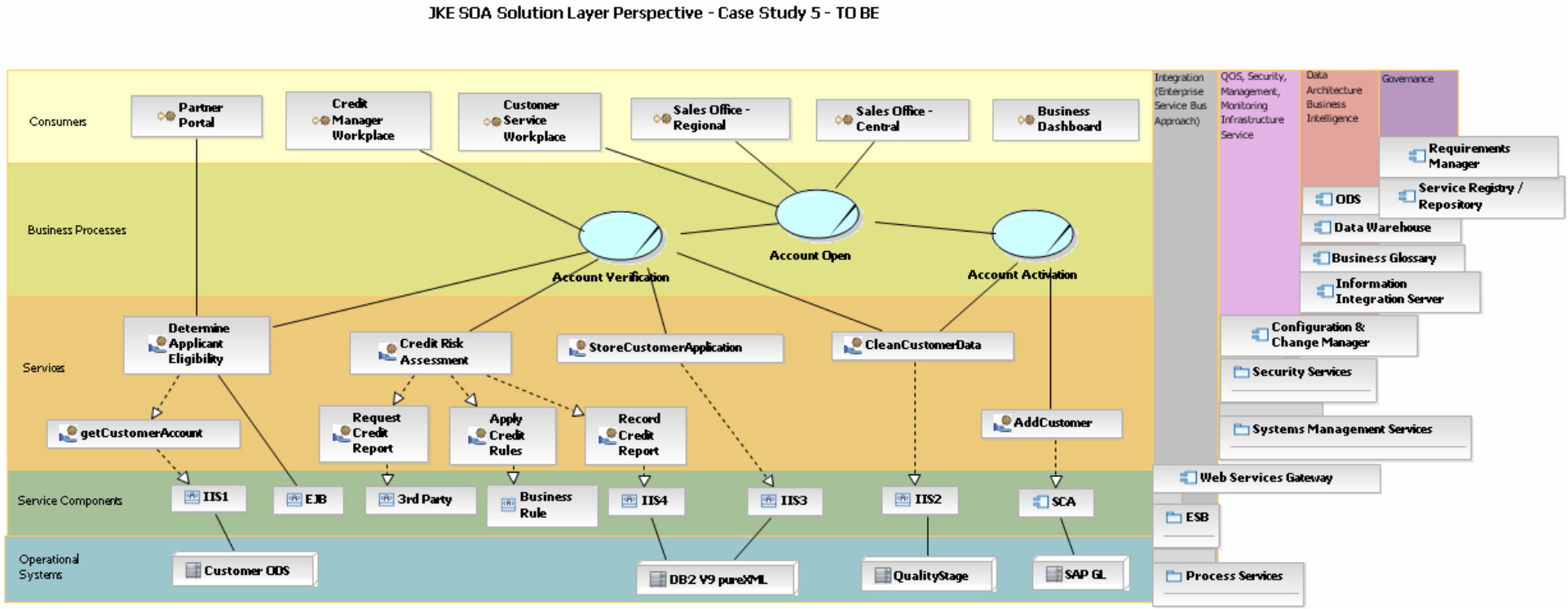
Example To-Be Architectural Overview Diagram



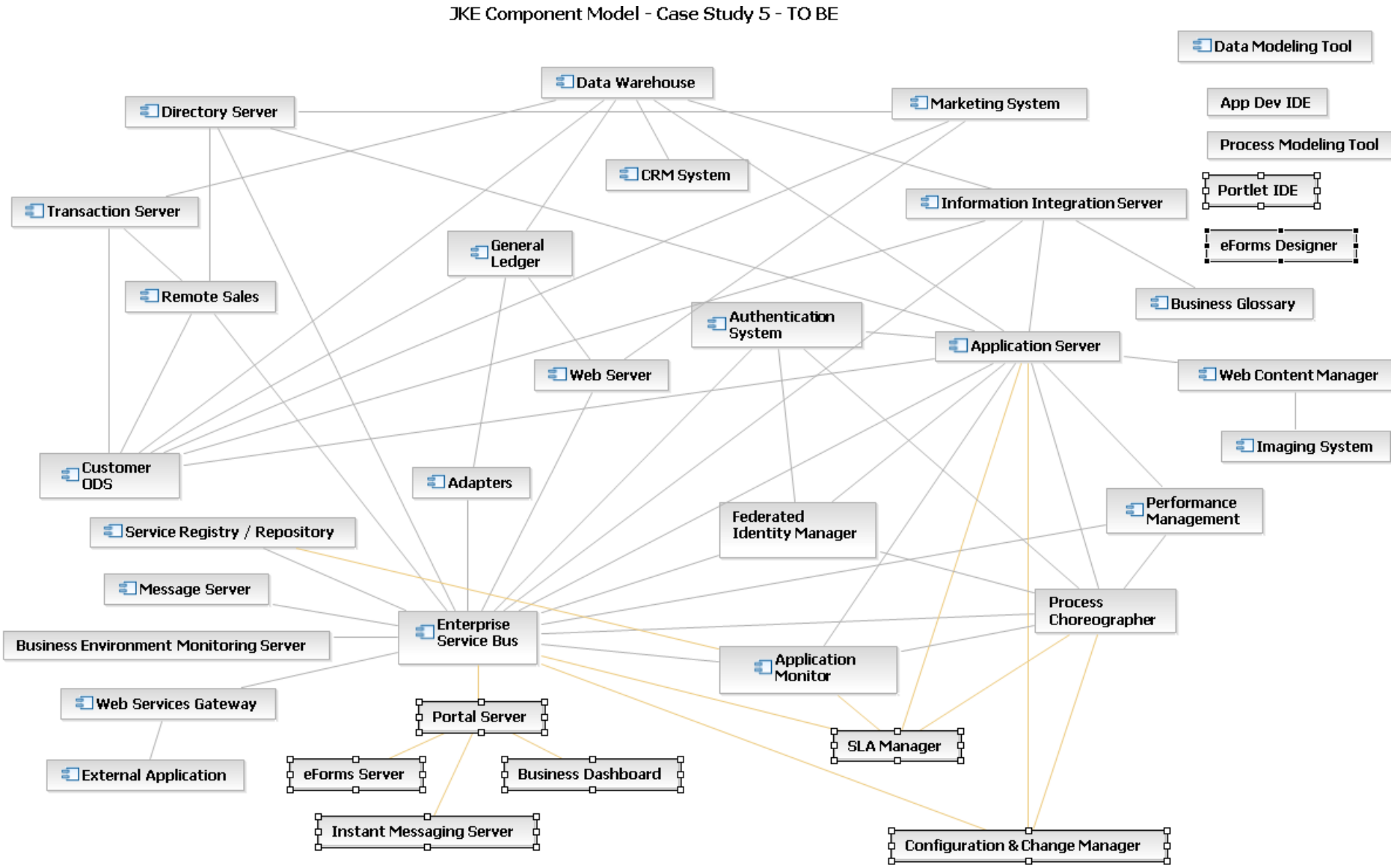
Where does the Component Model fit?



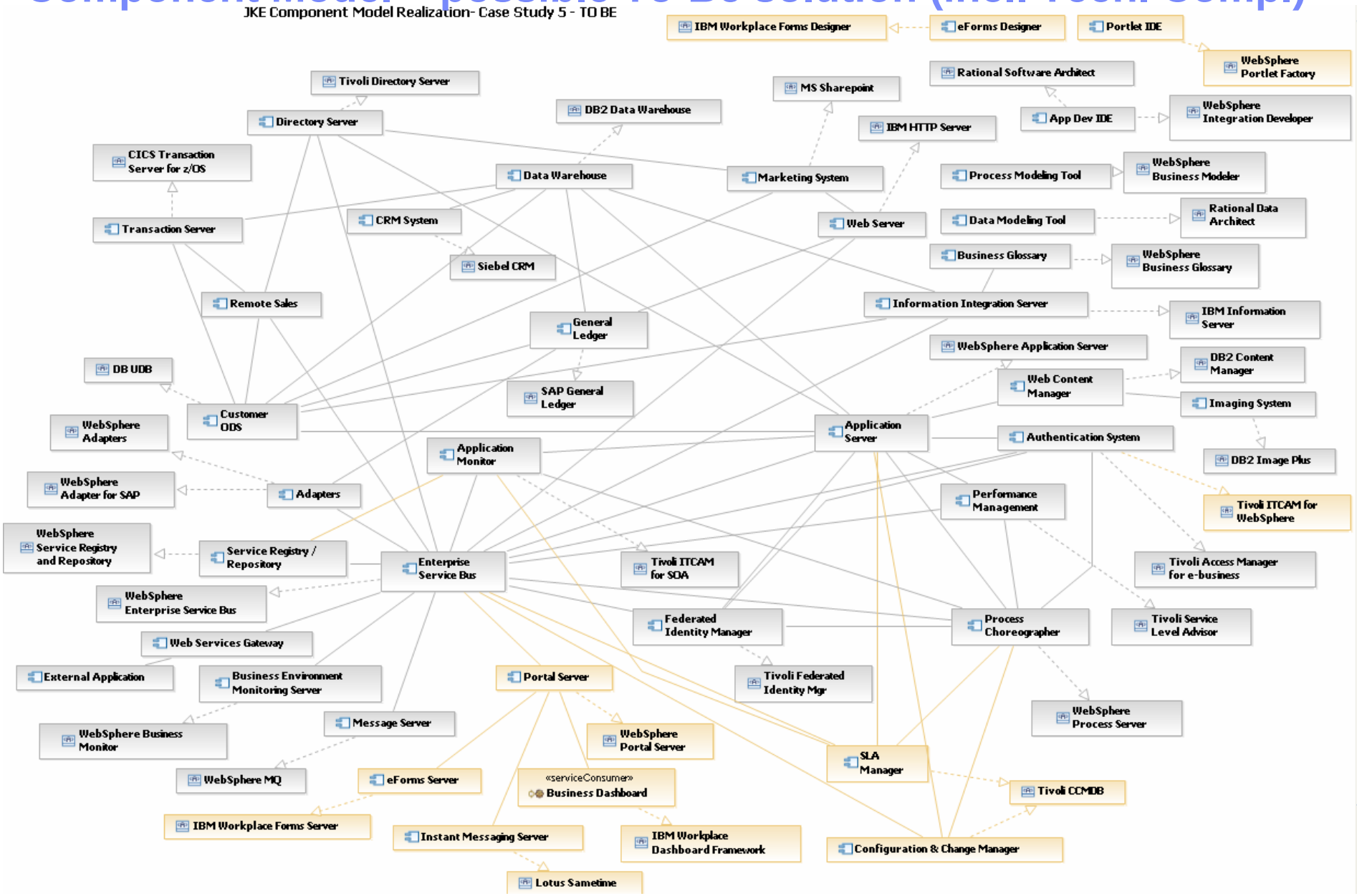
SOA Solution Layer Perspective – possible To-Be Solution



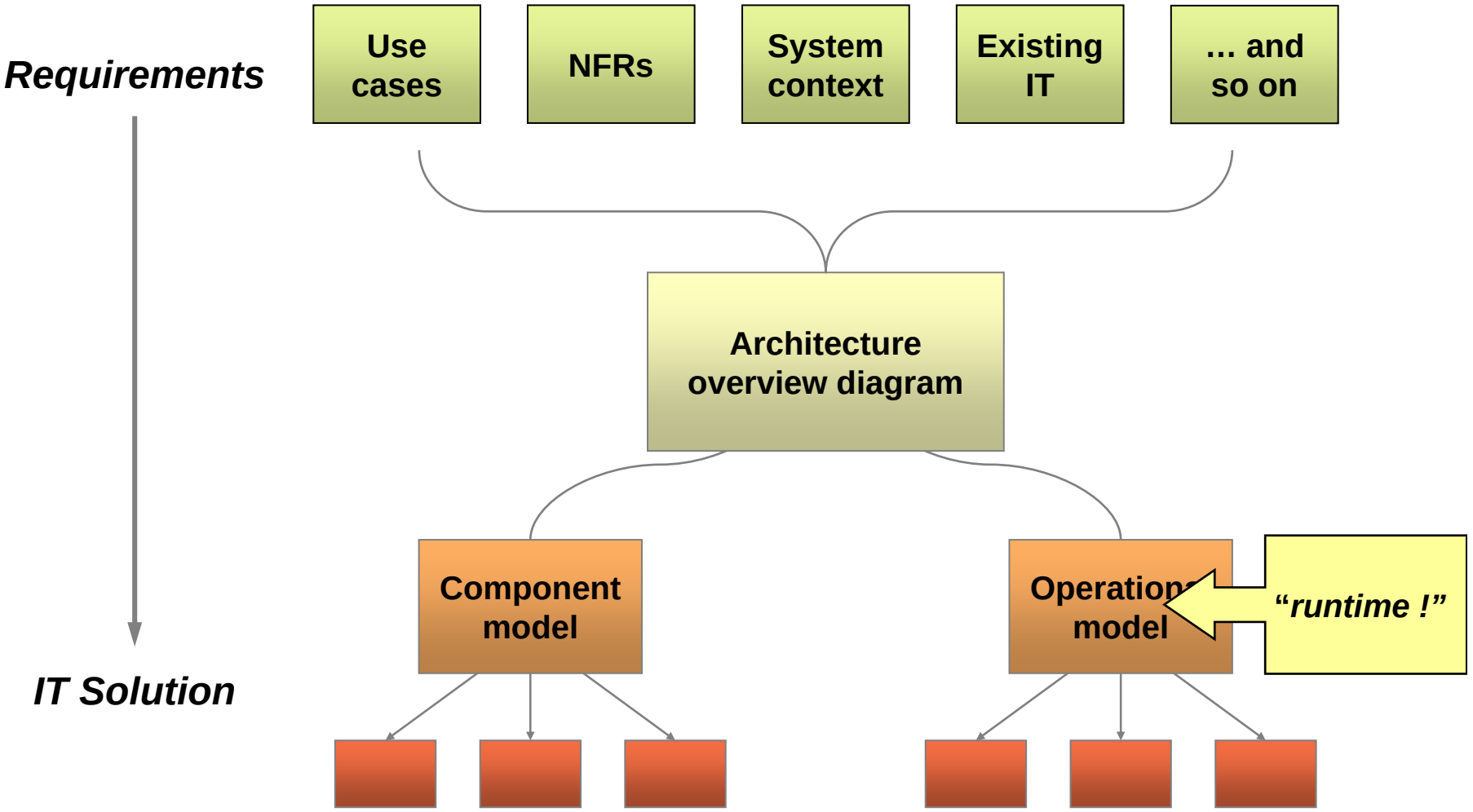
Component Model – possible To-Be solution



Component Model – possible To-Be solution (incl. Tech. Comp.)



Where does the Operational Model fit?



Operational Model – possible To-Be solution