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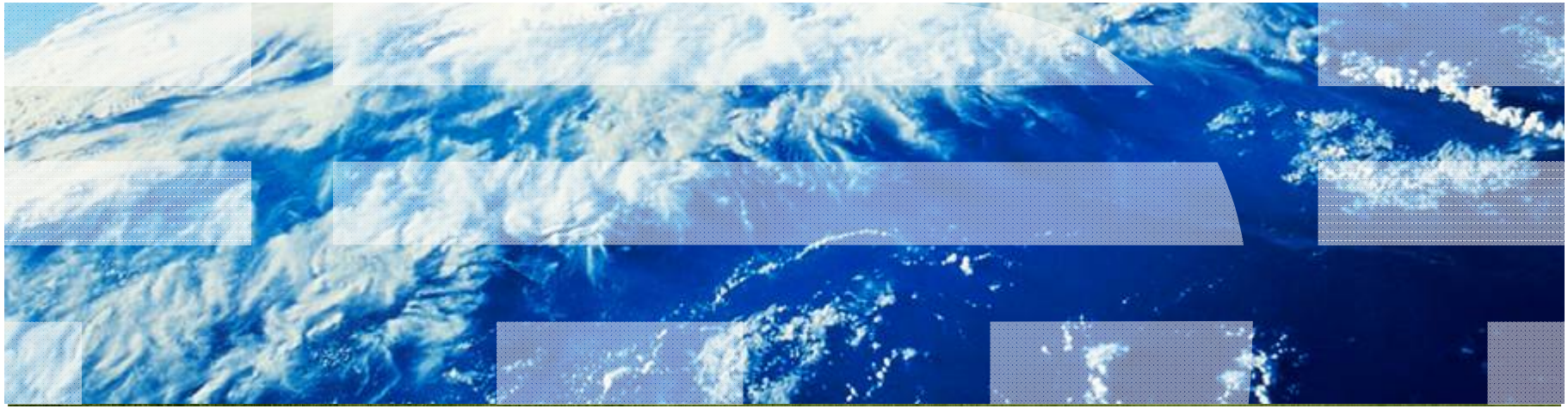
Enterprise IT Architectures

Enterprise Architecture – Governance



Agenda

I. Enterprise Architecture Governance & Transition

II. SOA Governance

III. Q&A

Enterprise Architecture – Governance & Transition

What is Governance?

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

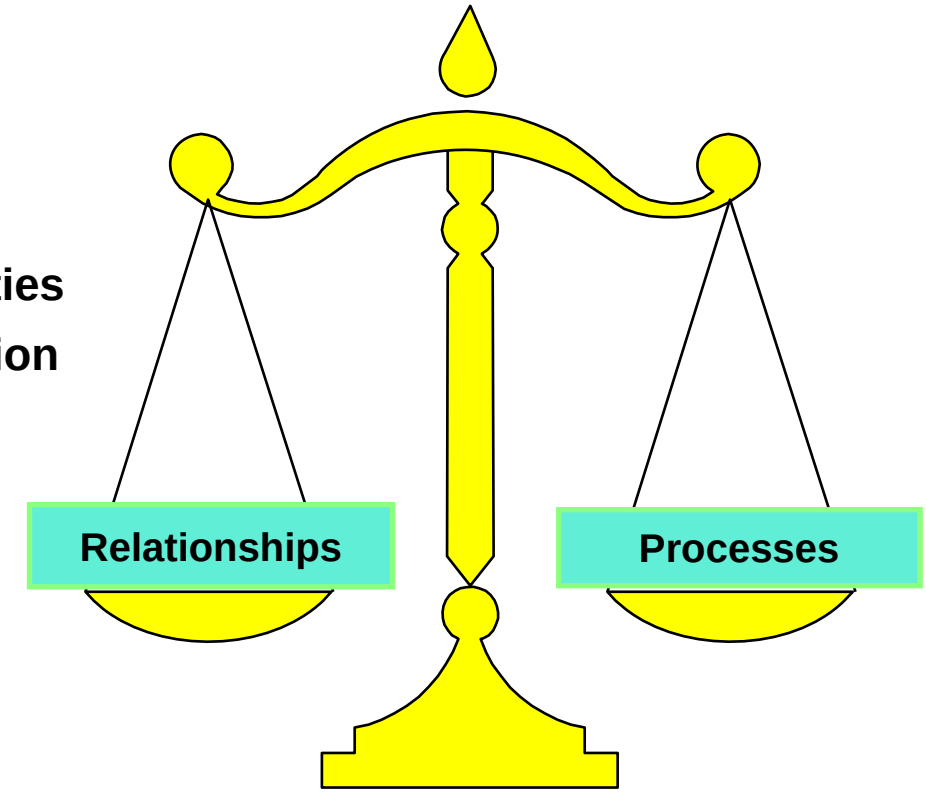
Establishing **measurement, policy and control mechanisms to** enable **people to carry out their roles and responsibilities**

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

Governance involves balancing the key aspects of relationships and processes on a foundation of communication

THE WILL

- Trust
- Alignment
- Responsibilities
- Communication
- Behavior
- Culture



THE WAY

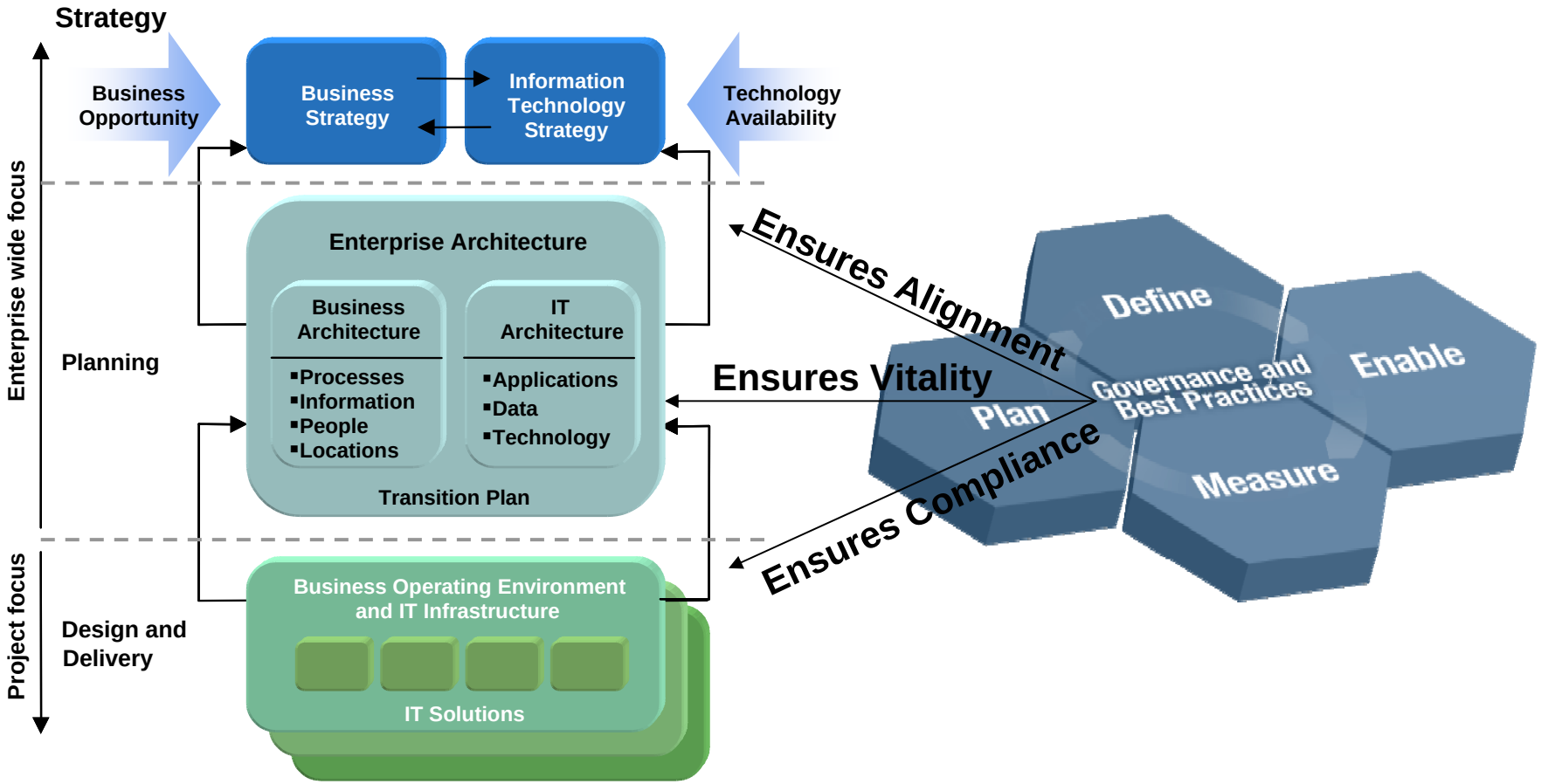
- Charter
- Organization
- Principles
- Processes
- Roles & Respon.
- Metrics
- Tools

Communication

Key terms and phrases

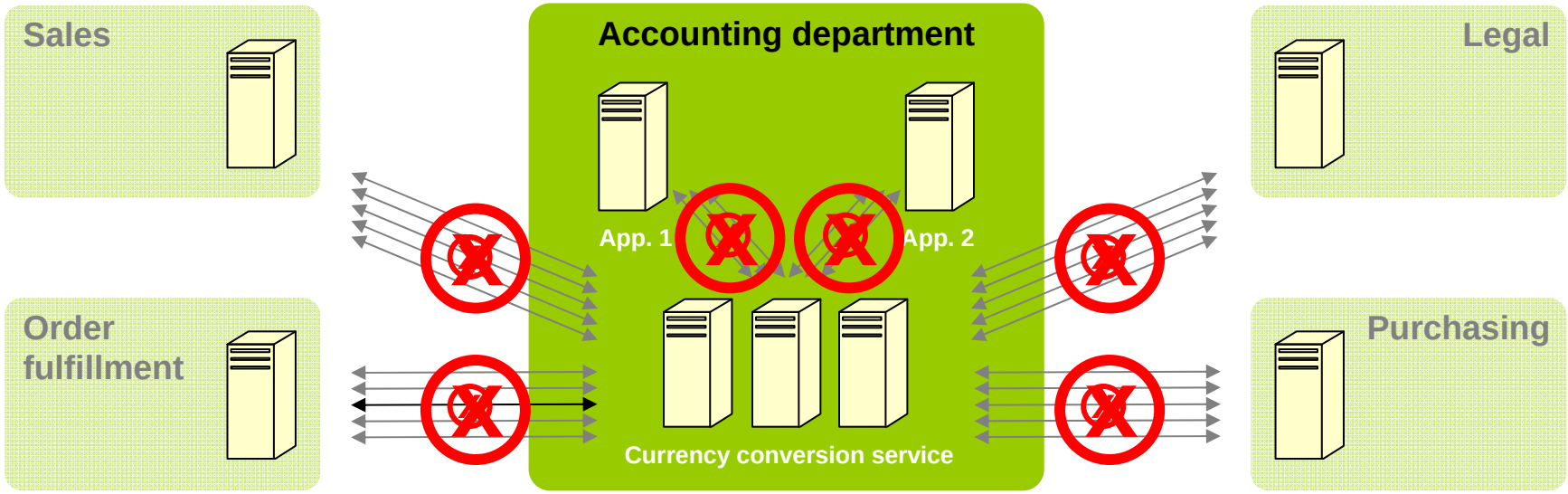
Governance	*A structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise's goals by adding value while balancing risk versus return over IT and its processes.* The IT Governance Institute
Principle	The underlying general rules which an organization will use to utilize and deploy all business and IT resources and assets, across the enterprise e.g. "IT systems will be designed to be capable of rapid expansion in line with unpredicted business growth." In EA we distinguish between Guiding Principles and Usage Principles.
Policy	A high level statement of **how** things will be managed or organized, including management goals, objectives, beliefs and responsibilities. Policies are normally defined at an overall strategy level and can be related to a specific area, for example, Security Policies, Management Policies. In many instances, policies reflect the law and givens, which must be adhered to - this is especially true in the case of Security and Privacy policies
Guideline	A general statement of direction, a desired future state which is not necessarily mandated. Guideline statements are similar in content to principle statements, but without the associated motivation and benefit statements.
Business Steering Committee	This group is responsible for providing business guidance, communicating changes in business direction, and for approving major changes and variances to the architecture. This committee should represent all business units, and participants should be senior managers (people with decision-making authority, for example, general managers or executive vice presidents).
Architecture Management Group (Architecture Review Board)	The group responsible for managing the design, deployment, maintenance, and evolution of the Enterprise Architecture. In addition, the AMG will be responsible for championing the EA throughout the enterprise.

Enterprise Architecture and Governance



Governance !

Importance by Illustrating Service Control

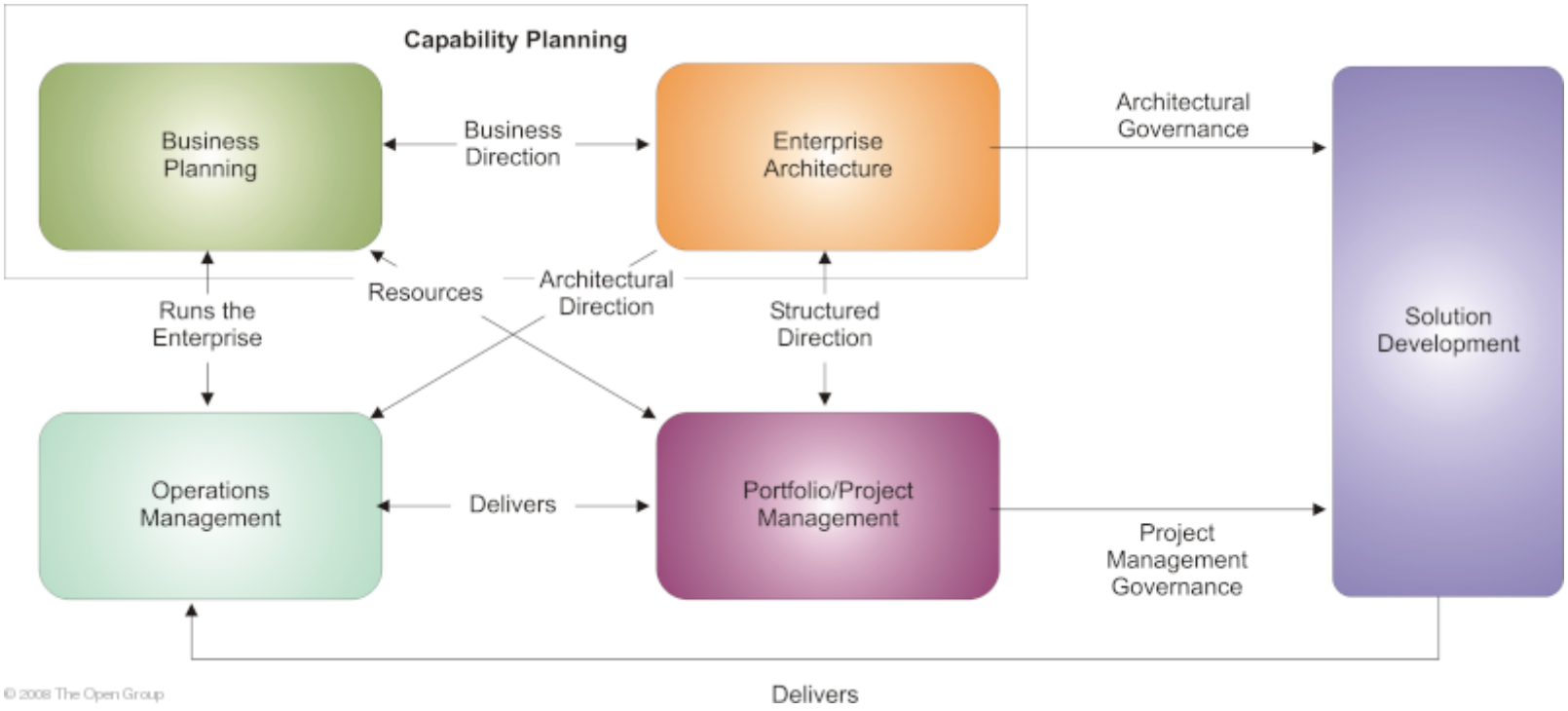


1. Provide a currency service that fills a specific line of business (LOB)
2. Other LOBs start using the service
3. LOBs increase use of services / quality suffers
4. Service is fixed at provider's expense
5. Fix works temporarily but problem reappears
6. Maintenance costs soar / provider ends service

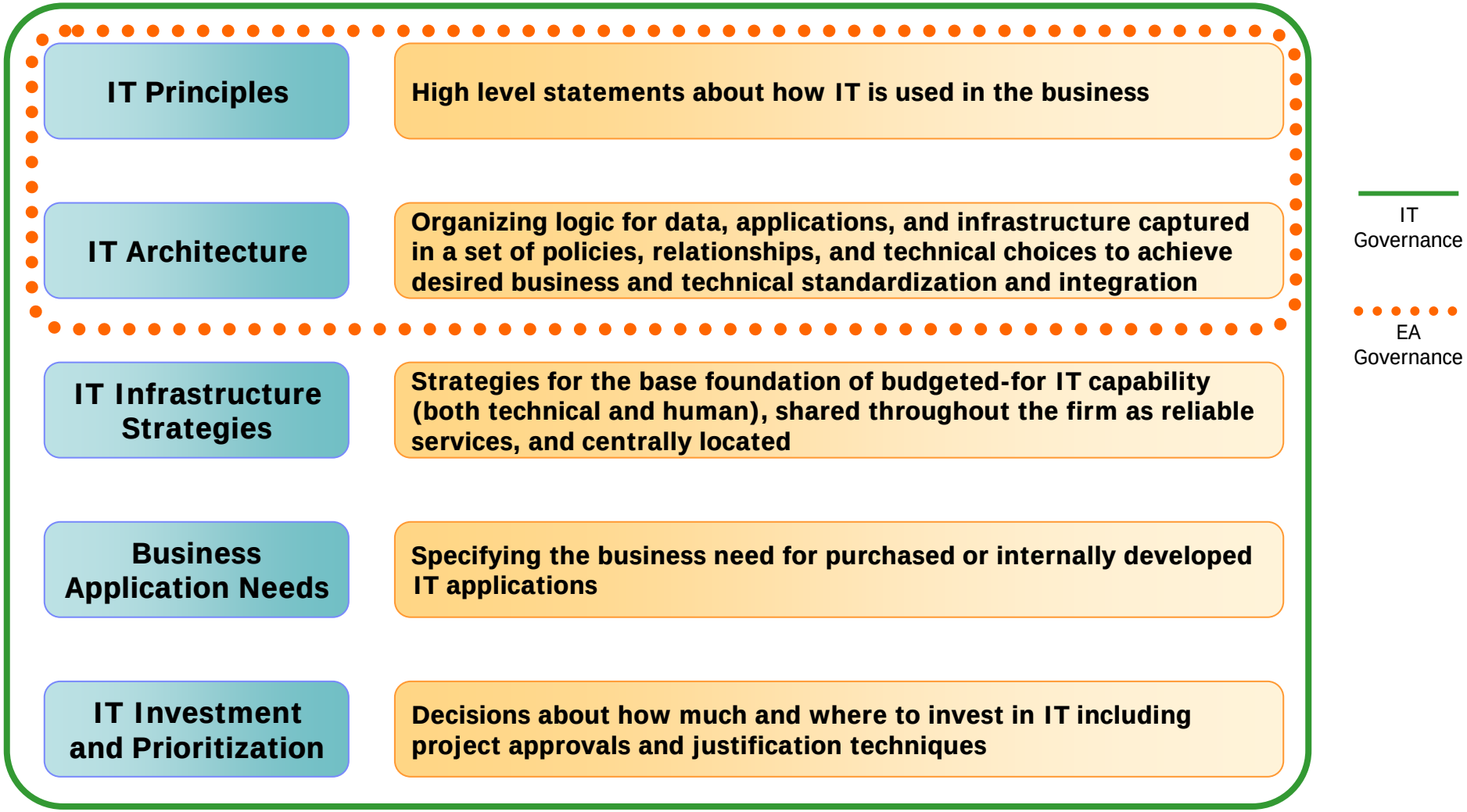
Governance !

Context of the wider Enterprise

- **"An Enterprise Architecture is only as good as the decision making framework that is established around it." (TOGAF)**

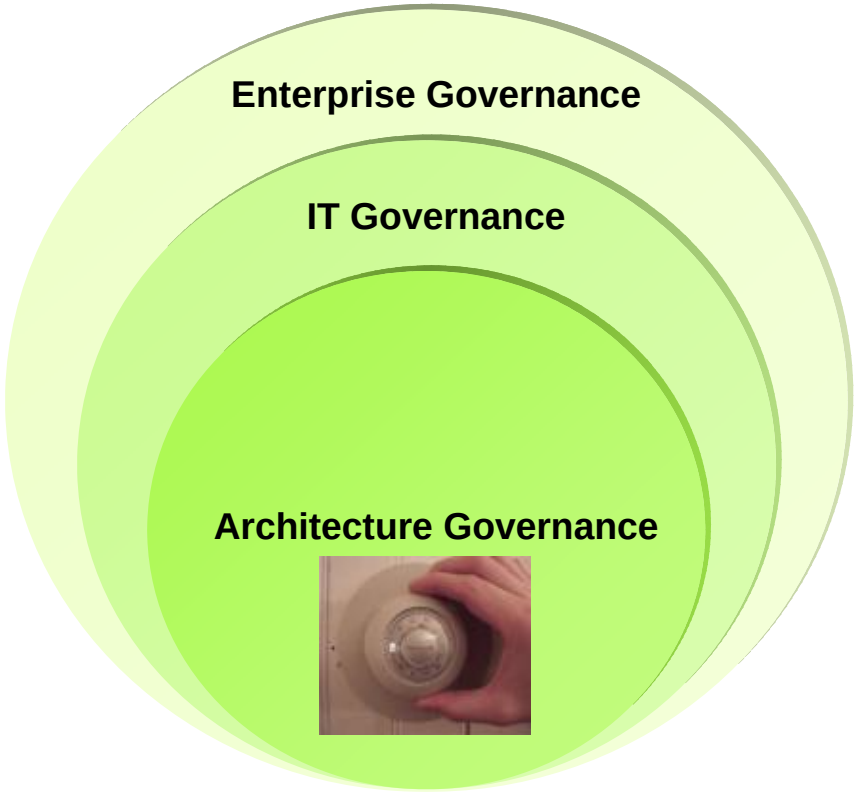


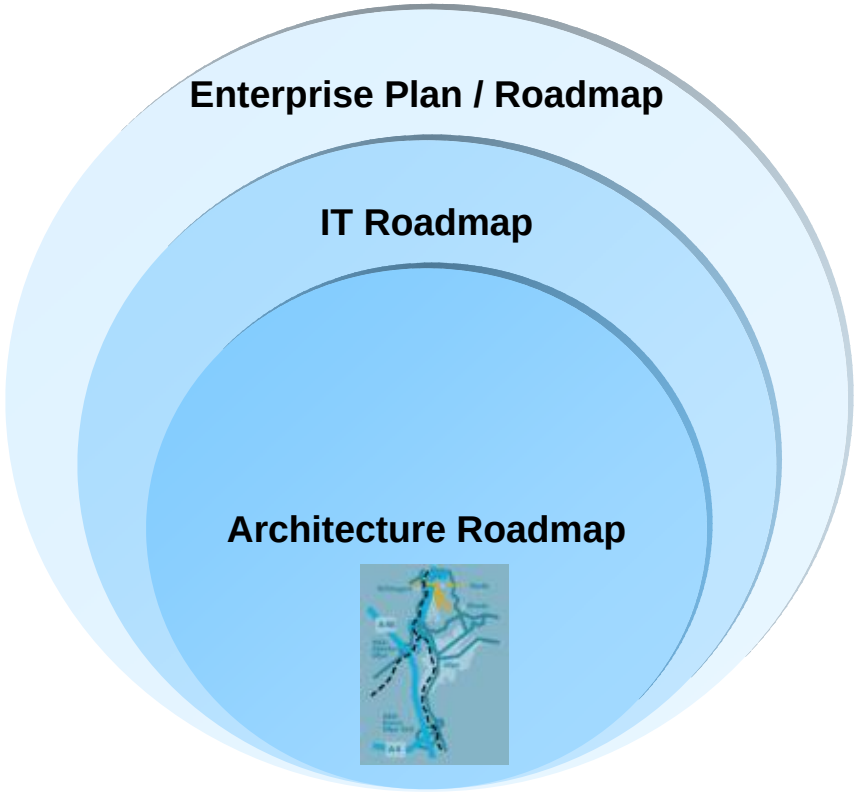
EA Governance (how EA decisions are made) is a subset of IT Governance (how IT decisions are made)



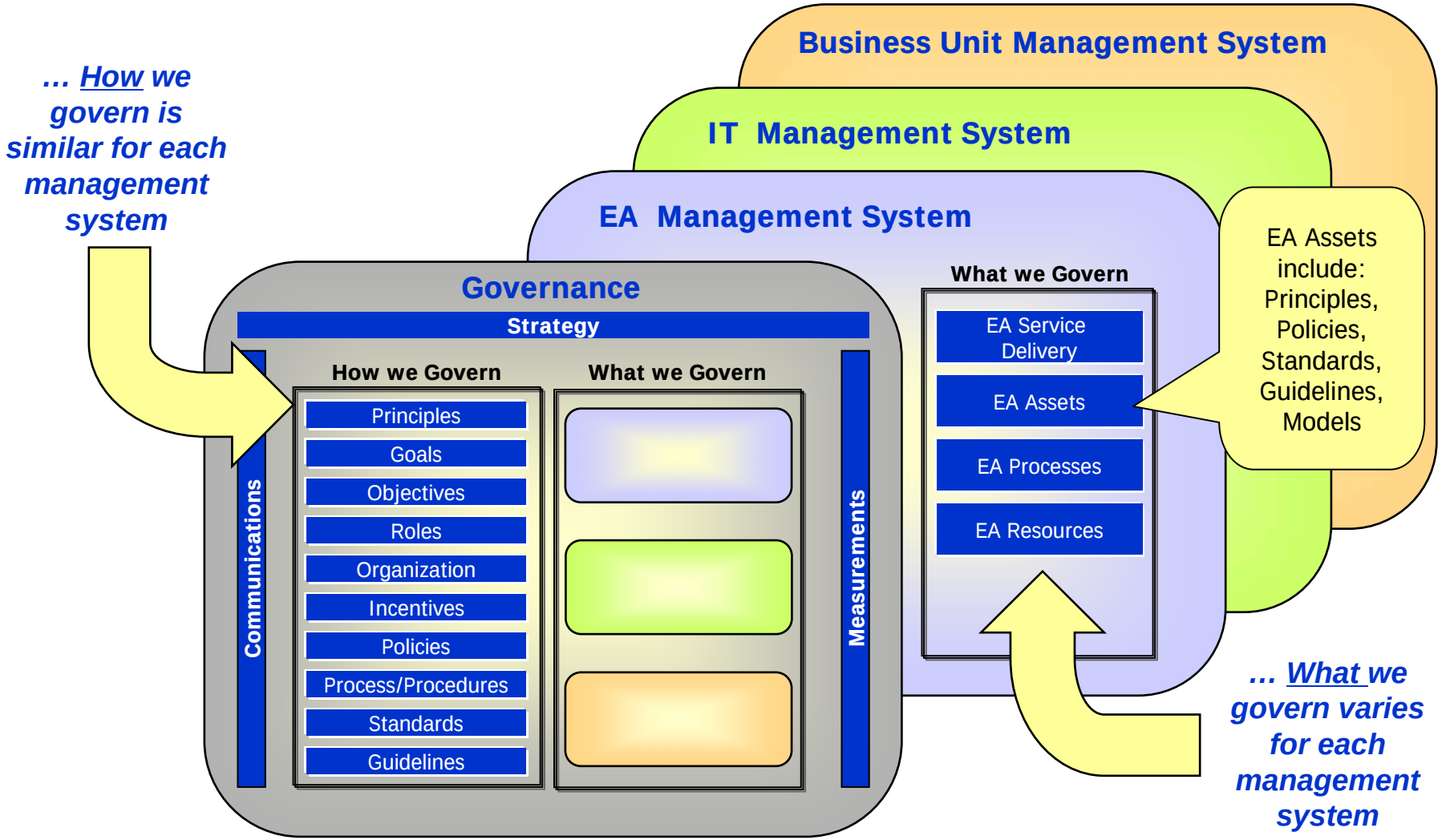
Source: IT Governance. How Top Performers Manage IT: Decision Rights for Superior Results, P. Well & J. Ross, Harvard Business School Press, 2004

The Governance and Roadmap areas are nested in IT and Enterprise level work

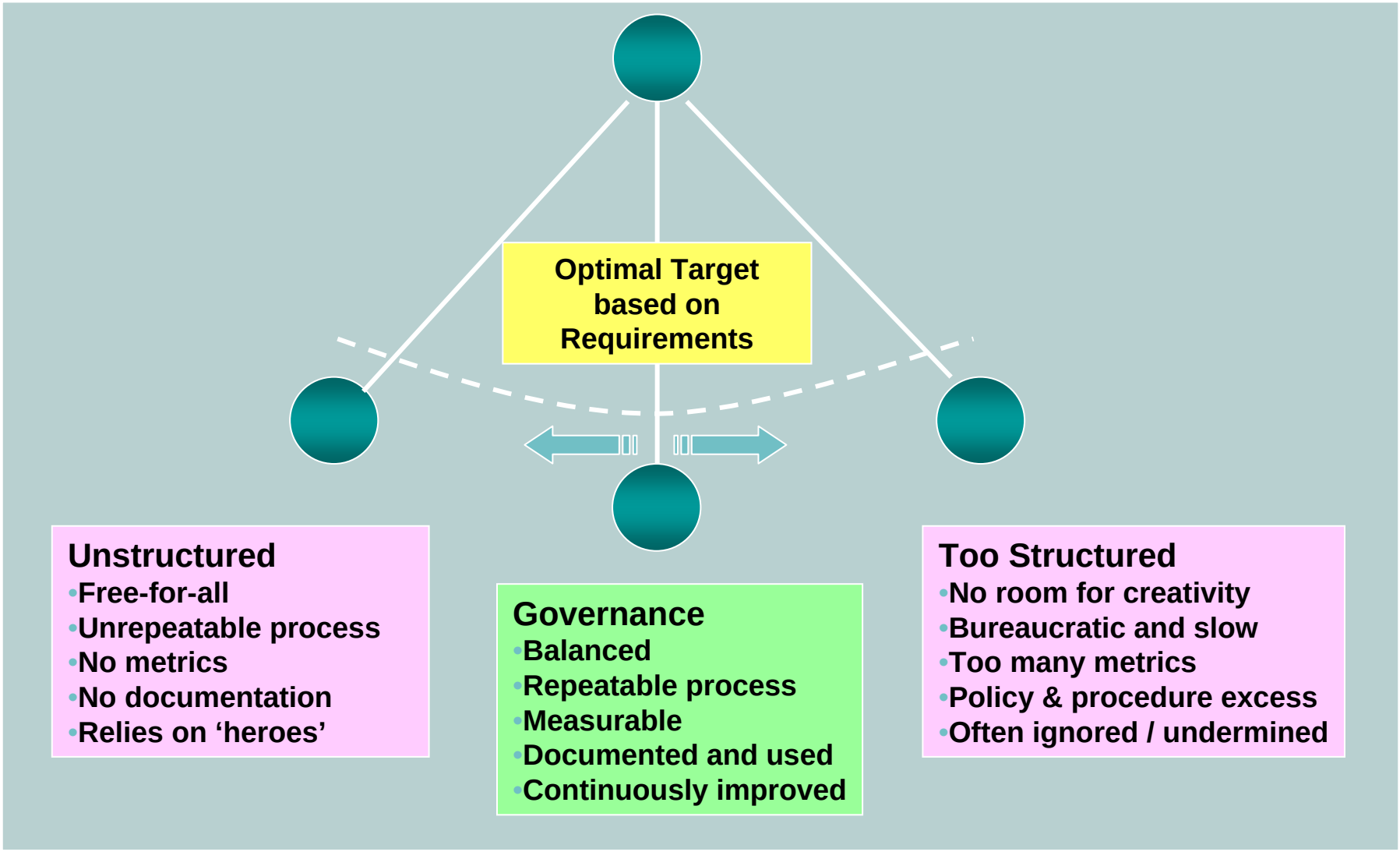




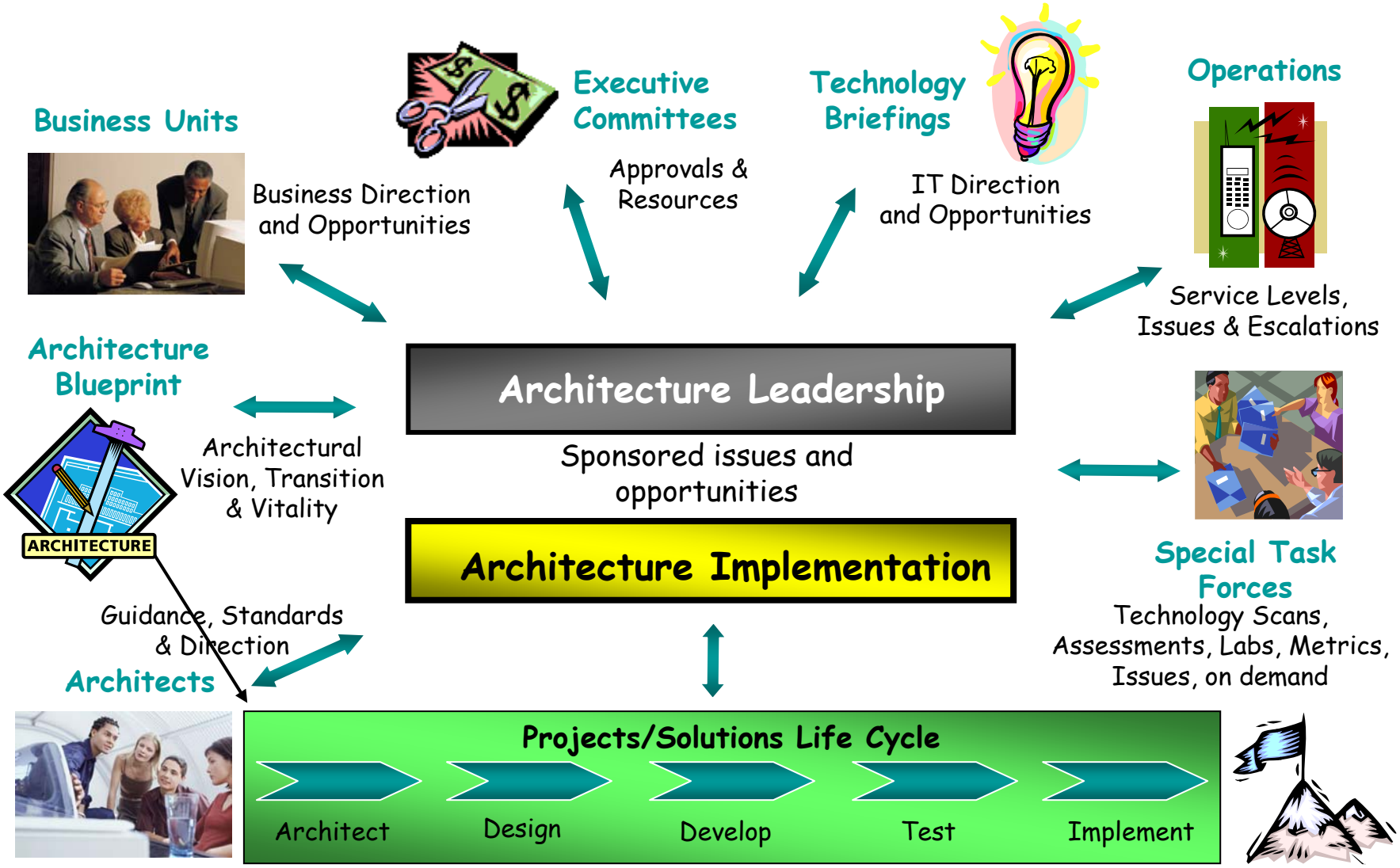
Governance specifies how decisions are made within a targeted Management System – in this case Enterprise Architecture.



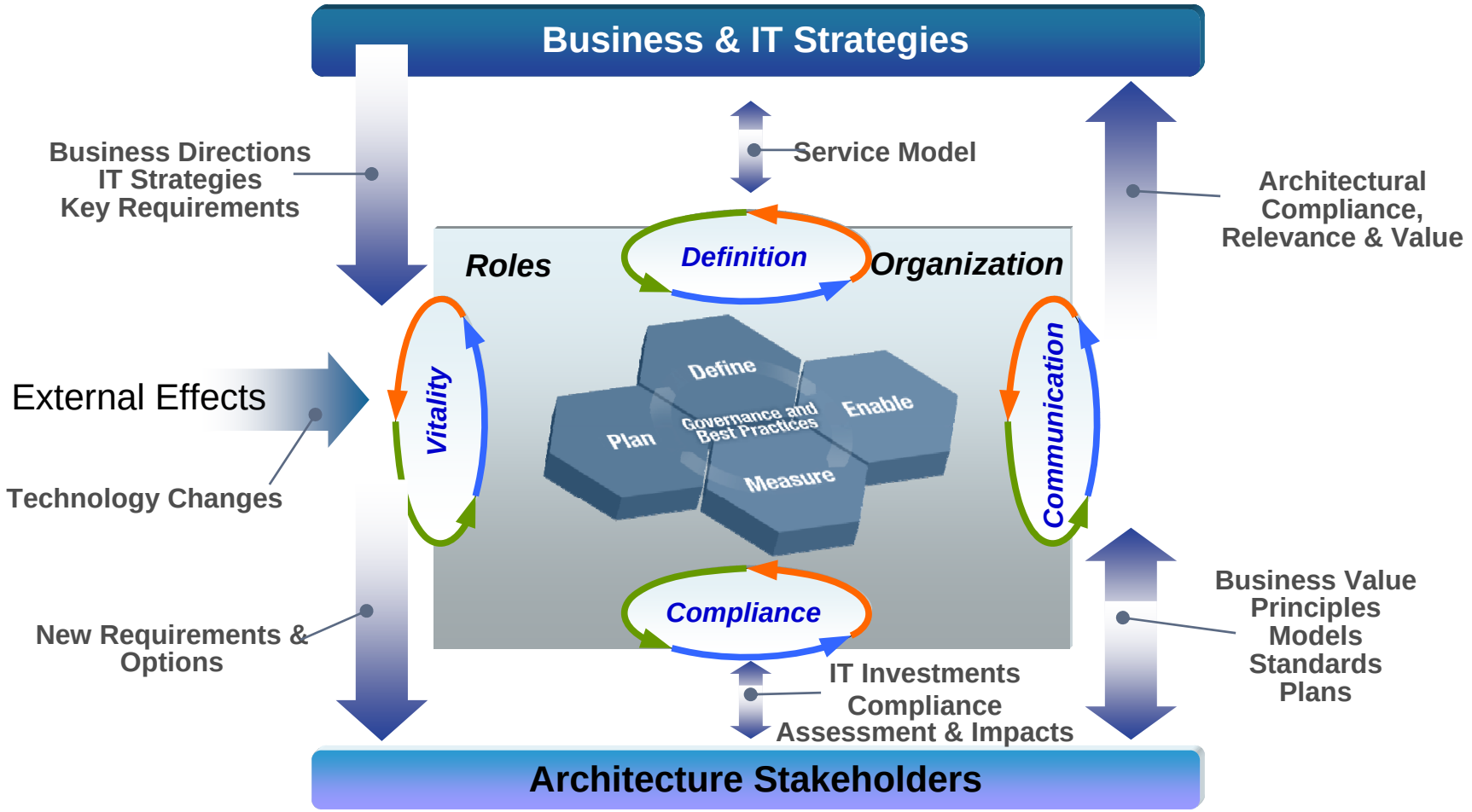
EA Governance Caveat – A balanced approach



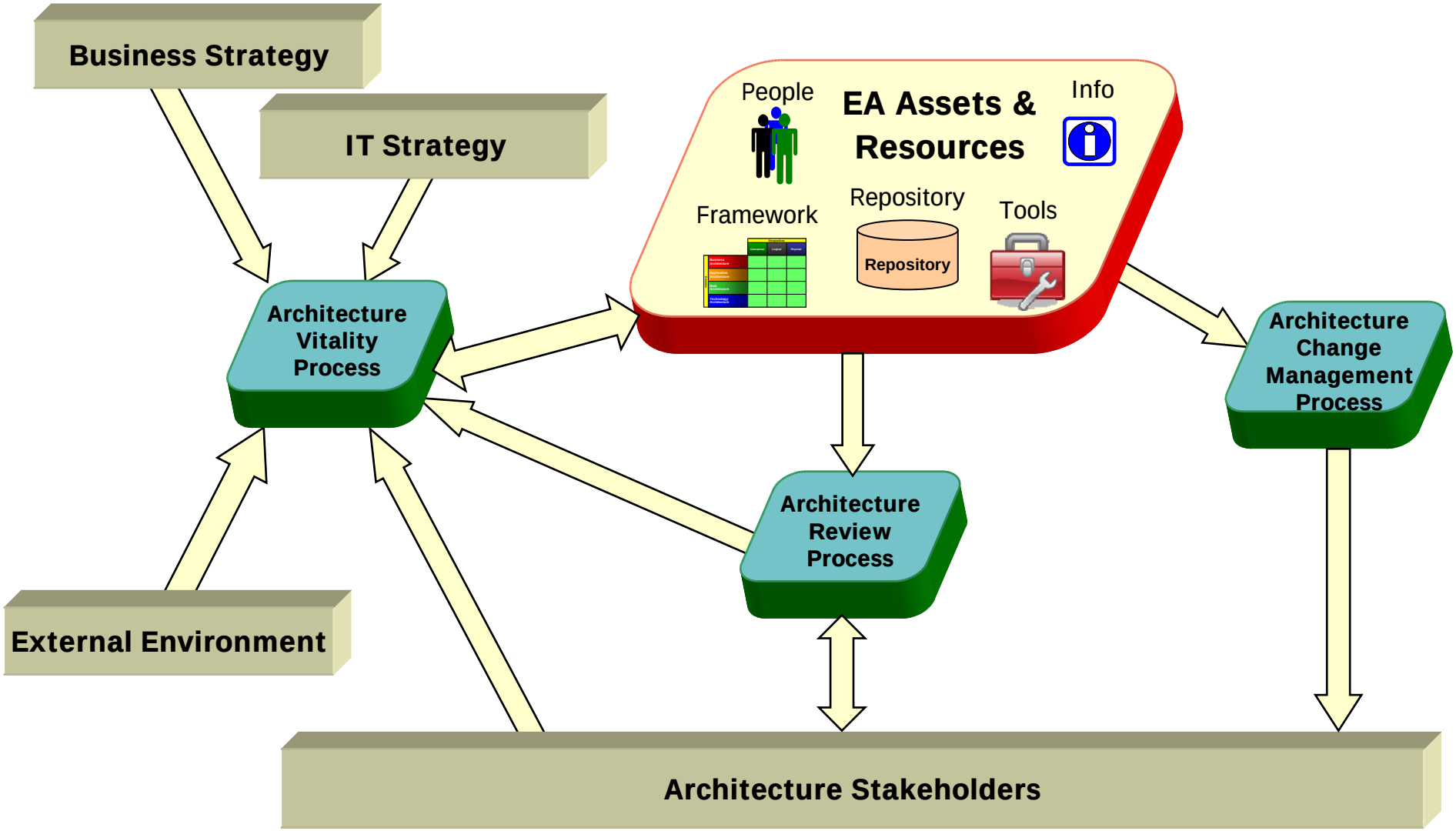
EA Governance affects many decision-makers



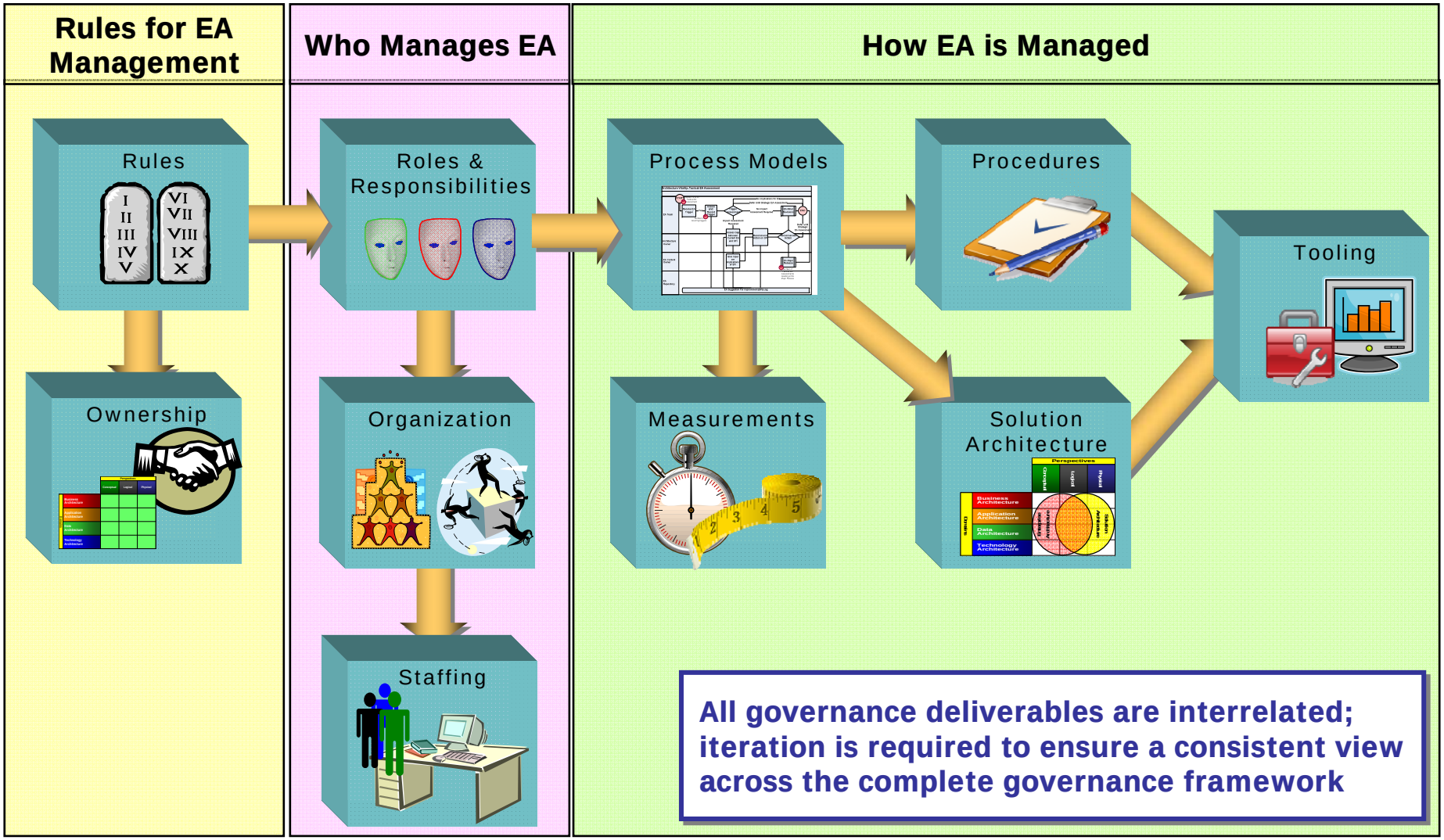
Governance Considerations – What is required ?
Processes, Roles and Organization



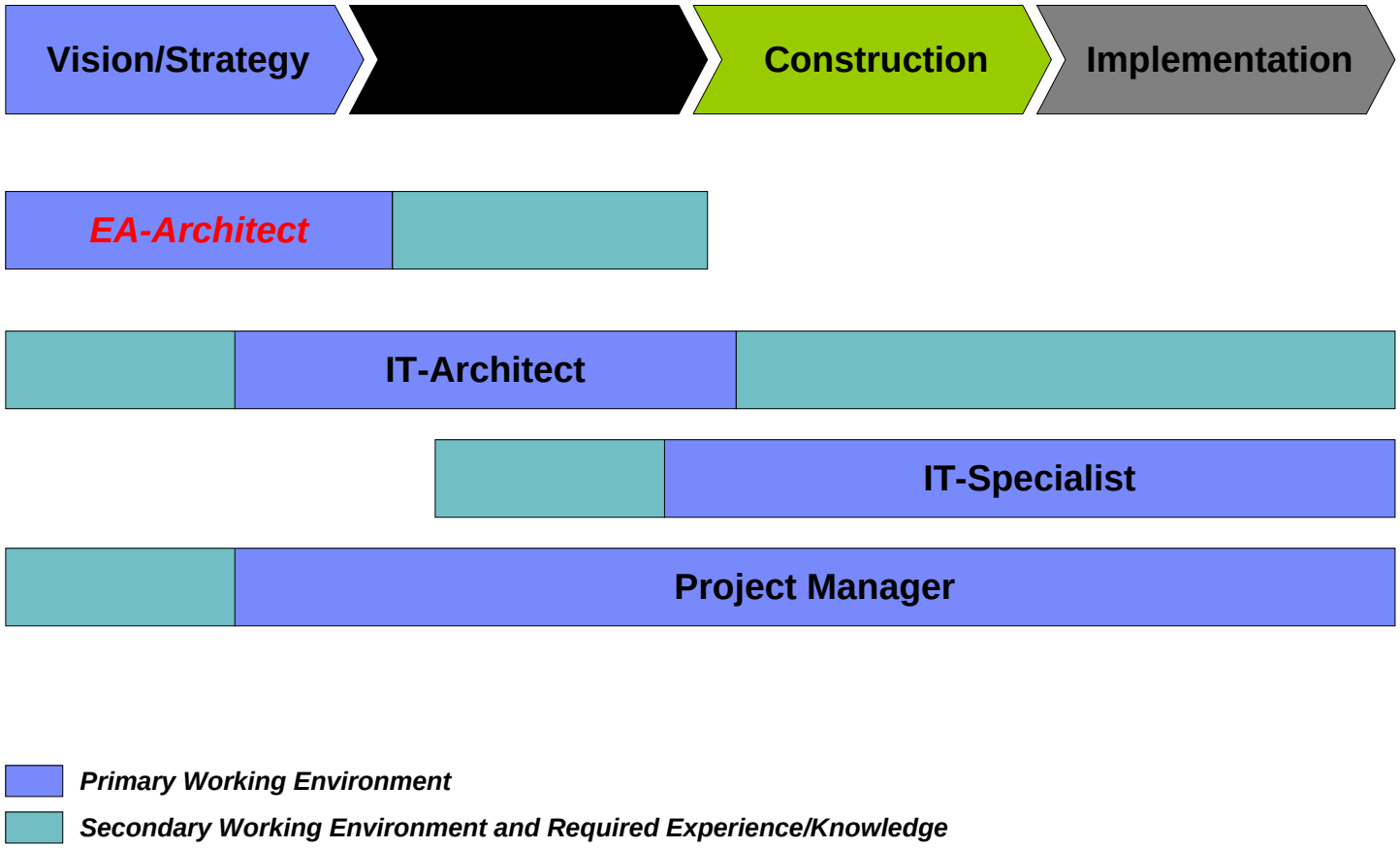
Key processes are for Architecture Review, Vitality, and Change Management



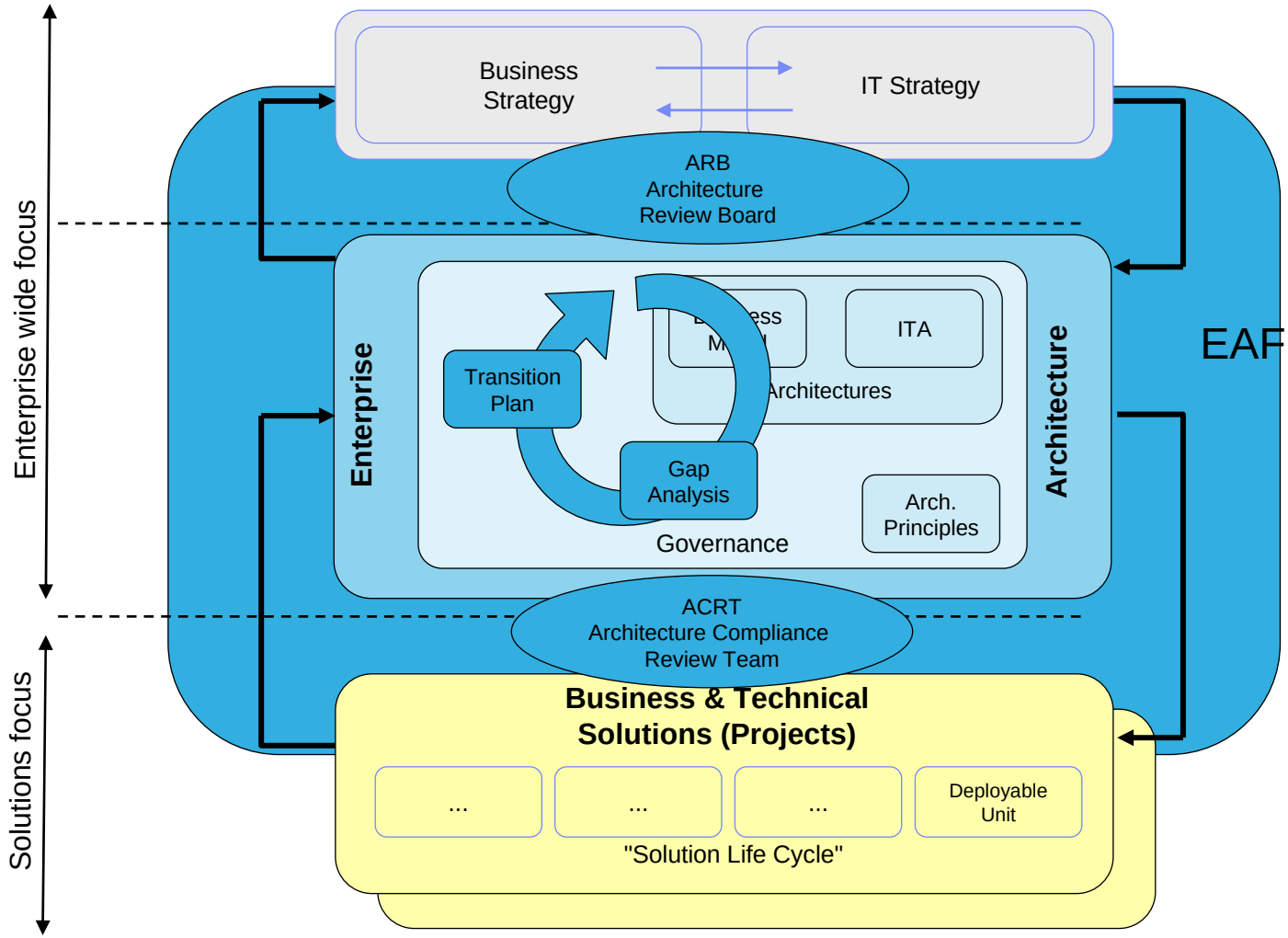
Typical EA Governance Aspects



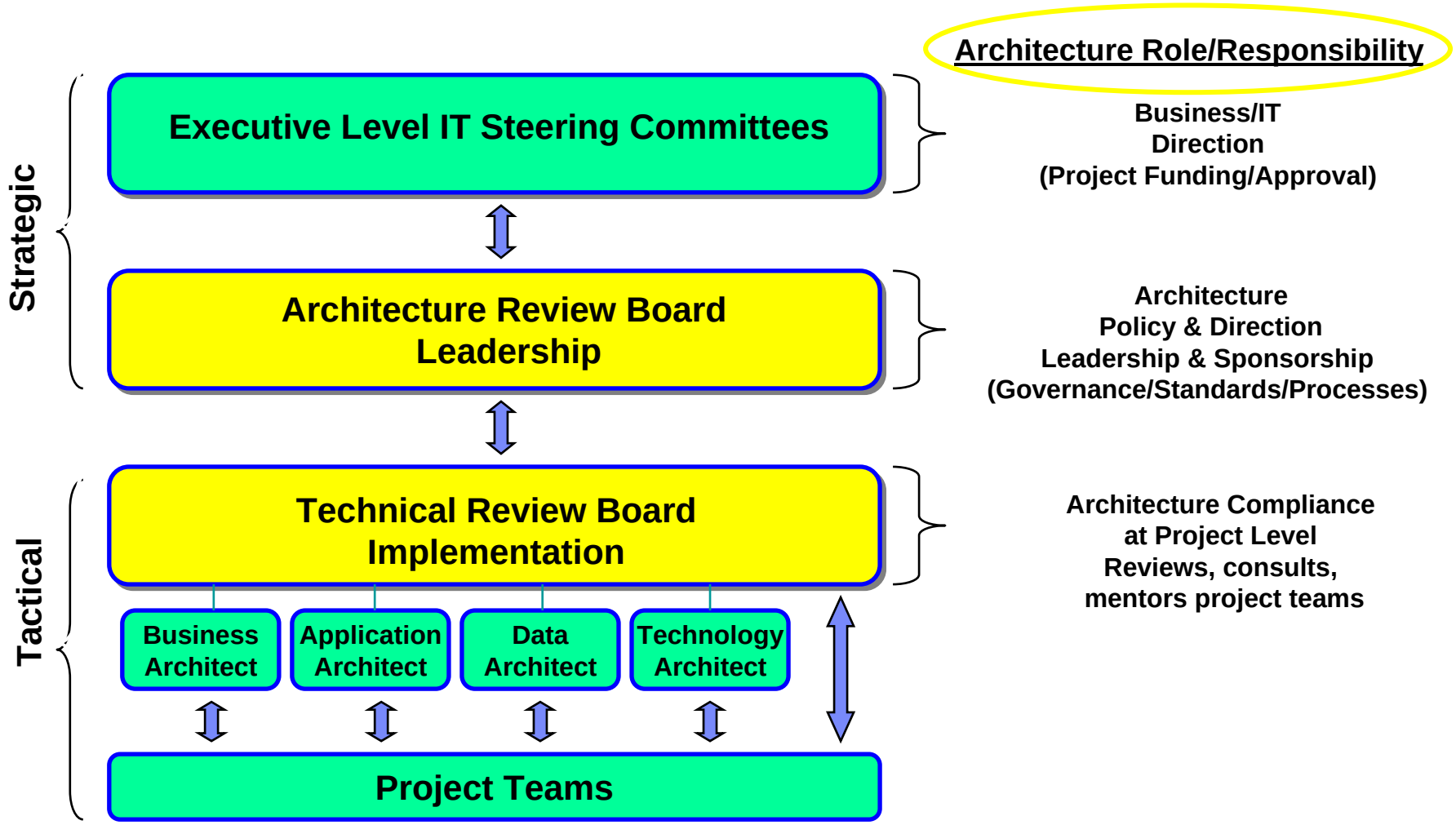
EA Architects are primarily involved in strategy and solution design stages



Committees for ensuring Enterprise Architecture



Roles and Responsibilities



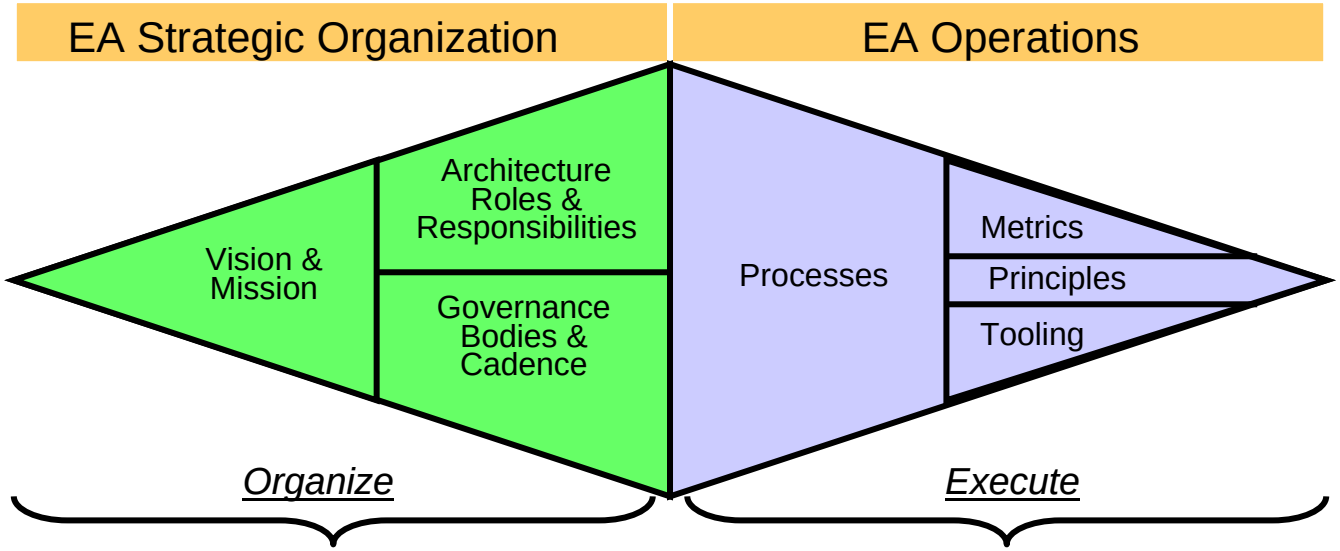
EA Governance – Overview of the boards/committees

Executive Review Board	IT Steering Committee	Architecture Review Board	Architecture Compliance Review Team	Architecture Stakeholders
Executive Decision Making CEO President CFO CIO	• Identify Business Requirements • Ensure Business and IT are strategically aligned • Review and Approve IT Initiatives & Projects • Review and Approve Architecture Funding • Sponsor and Champion Architecture • Approve R&D Plan • Monitor Progress	• Sponsor and Champion Architecture • Own and Support Architecture Vision and Guiding Principles • Ensure Architecture Compliance • Review, Approve/Deny Architecture Changes/ Exceptions/Appeals • Ensure Architecture Vitality and Review Emerging Technologies • Communicate Architecture to Stakeholders	• Champion Architecture • Review Projects for Compliance with Standards • Provide Architecture Guidance to the Stakeholders • Maintain Architecture Standards and Processes • Recommend Architecture Improvements	• Comply with Architecture & Provide Feedback to ARB • Locally Sponsor and Champion Architecture • Support Conformance to Architecture • Submit Requests for Architecture Changes and Exceptions

Enterprise Architecture Governance also has many dimensions

Enterprise Architecture Elements	
Strategy	**Strategic Alignment -** Explicit linkages to IT and Business Strategies in order to support and implement those strategies
	Principles – Fundamental rules upon which the Enterprise Architecture is based
	Architecture Vision – Represents the governing ideas and directions for a target Enterprise Architecture
	Measurements - Measuring the EA benefits and return on investment to prove its value
Artifacts	**Framework –** Structure of the EA, set of conventions for ensuring consistent notation, terminology and semantics to describe EA
	Models / Patterns - Overall EA context, diagrams and views; Assemblies of Components for communications and guidance
	Components / Standards – Basic Architecture building blocks, defining reusable functionality of service
Governance	**Management Processes -** Processes required to manage, use and update the Enterprise Architecture
	Roles – Key roles and responsibilities necessary to effectively manage and use the Enterprise Architecture
	Organization – Position and reporting structure of the EA Roles
Roadmap	**Current Environment -** An understanding of the organization's current operating environment
	Gap Analysis - An assessment of the gaps between the Current installed IT environment, and the Target IT environment
	Transition Plan - Transition initiatives required to effect transformation from the Current State to the Target State

Enterprise Architecture Governance Components



Vision, Mission, Charter
- Development of change vision and specific mission

Architecture Roles & Responsibilities
- Who are the architecture participants?
- How do the participants interact?
- Decision rights

Governance Bodies & Cadence
- What forums review and approve architecture decisions?
- Who leads and participates in the architecture forums, and how often do they meet?

Processes
- What activities are governed?
- Who reviews and approves decisions, and how do escalations occur?

Metrics
- What types of metrics and measures are managed?

Principles
- What is the high level development guidance?

Tooling
- What tools will be utilized?

Information Governance

Aspects

Information Governance is a holistic approach to managing and leveraging information for business benefits and encompasses people, processes, and technology

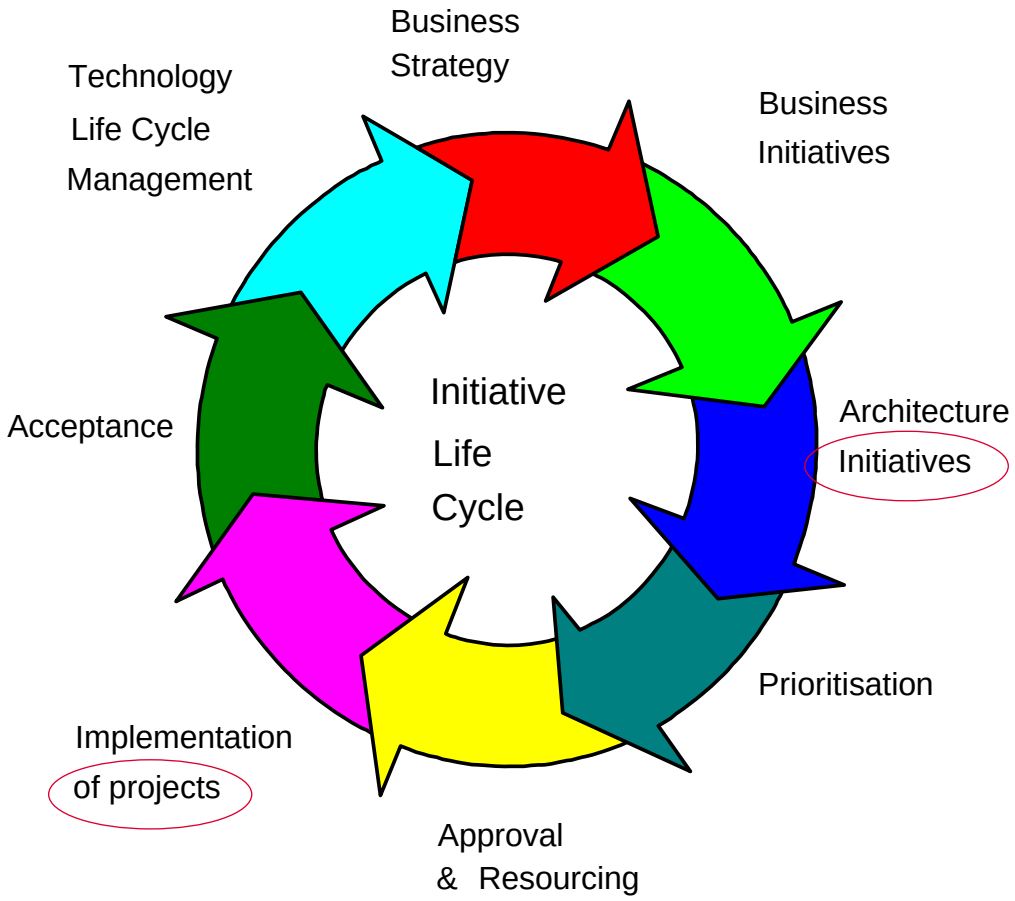
- Executive Sponsors and Champions
- Organizational structure and definitions of roles and responsibilities
- Information Governance Experts
- Data Stewards, Data Managers
- Data Quality Experts

- Data Standardization Processes
- Processes and Business Rules for ongoing governance
- Information Governance Policies and Procedures
- Common Data Standards and Business Definitions
- Data Quality Remediation Processes
- Change Management Processes (IT & Business)

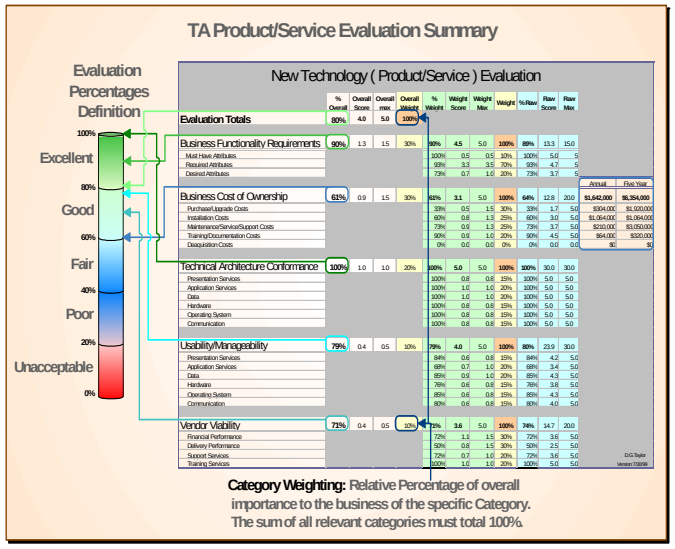
- Metadata Repositories, populated with the common data standards, business definitions, data structures, and data transformation rules
- Workflow Technology
- Data Quality Remediation Technology
- Integrated Development and Information Management Platform
- Reporting & Performance Management Technology

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

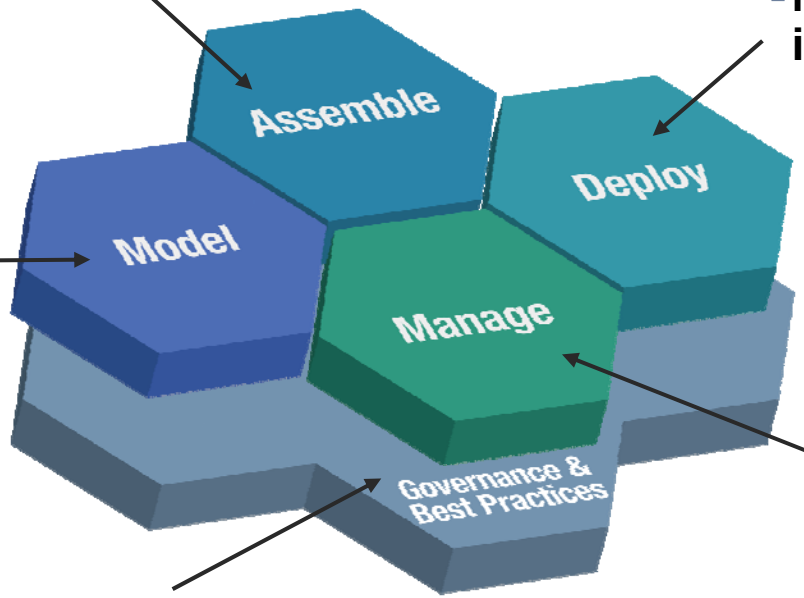
Current	Migration	Future
Current Environment OS/390, USS390, OS/400, AIX, Solaris, Unix, Win 9x, 2000, Novell, OS/2, MacOS	**Tactical Deployment** zOS, Solaris, Win2000, WinXP	**Strategic Direction** zOS, Solaris, WinXP, 2003
Retirement Targets Win9x, Novell		**Preferred** zOS, Solaris, Windows
Sunset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

SOA Governance

Governance within the SOA Lifecycle

- Discover
- Construct & Test
- Compose

- Integrate people
- Integrate processes
- Manage and integrate information



- Gather requirements
- Model & Simulate
- Design

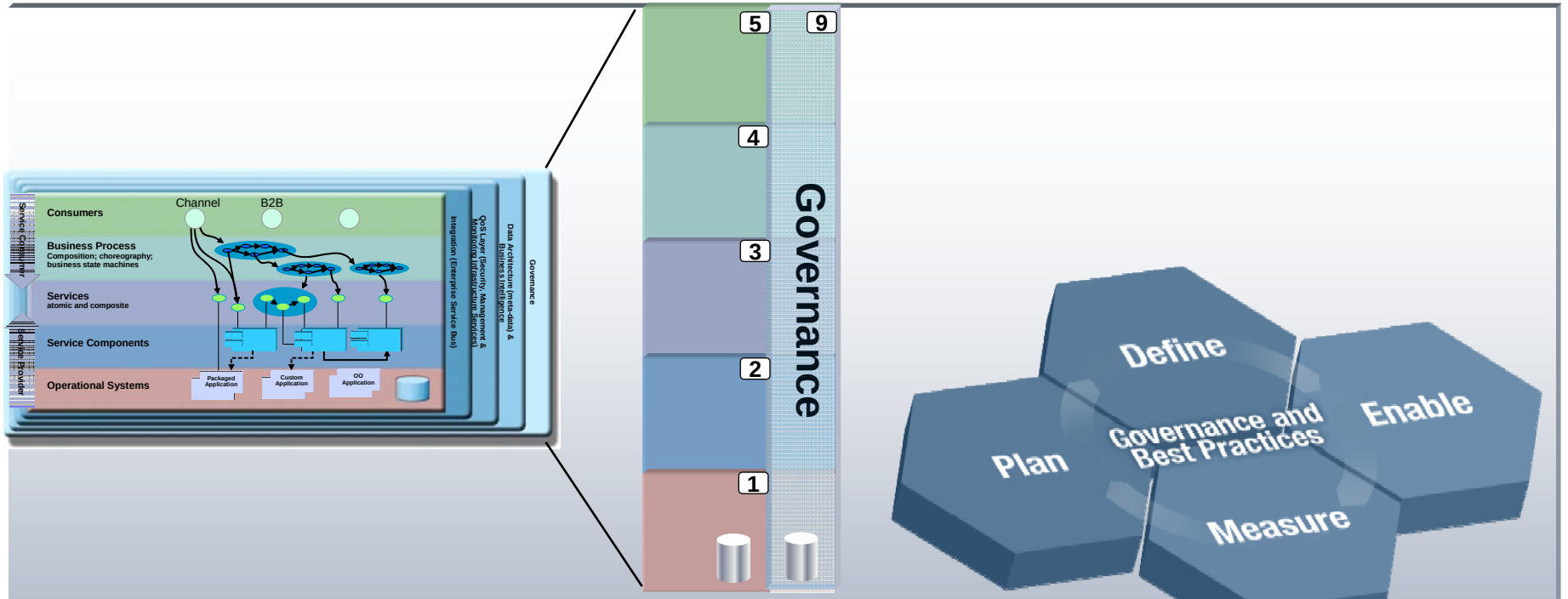
- Manage applications & services
- Manage identity & compliance
- Monitor business metrics

- Financial transparency
- Business/IT alignment
- Process control

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**

What is SOA Governance?

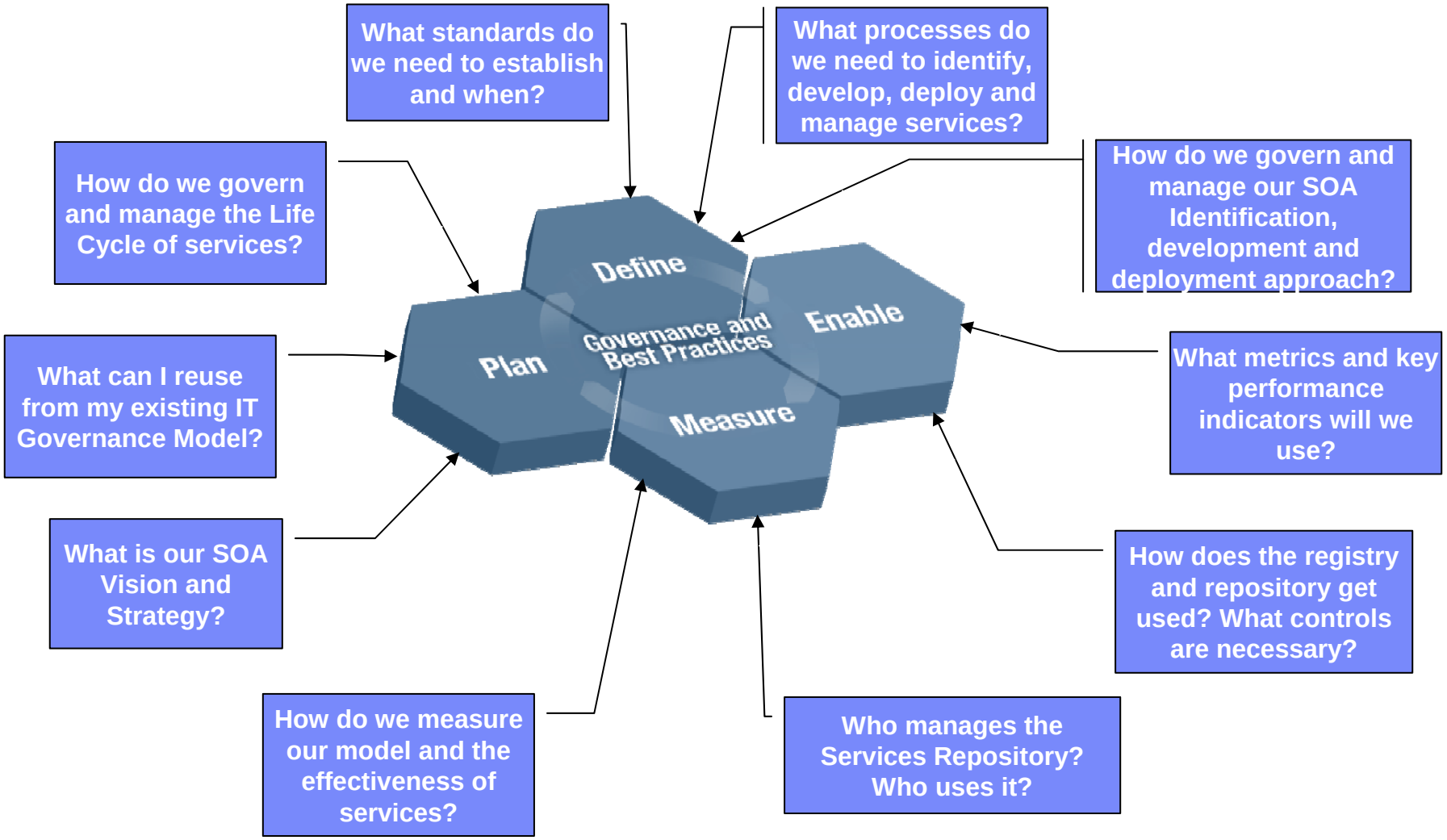


SOA Governance?

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

SOA Governance Life Cycle Addresses Key Questions



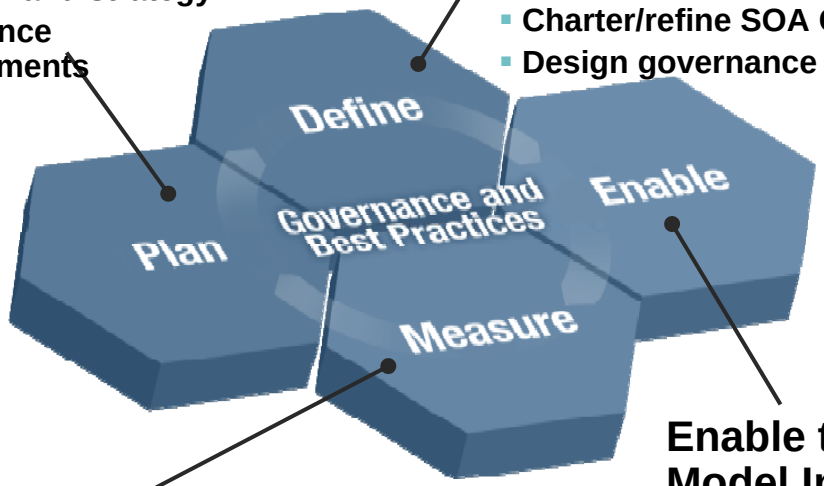
SOA Governance Lifecycle – How to establish?

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

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.

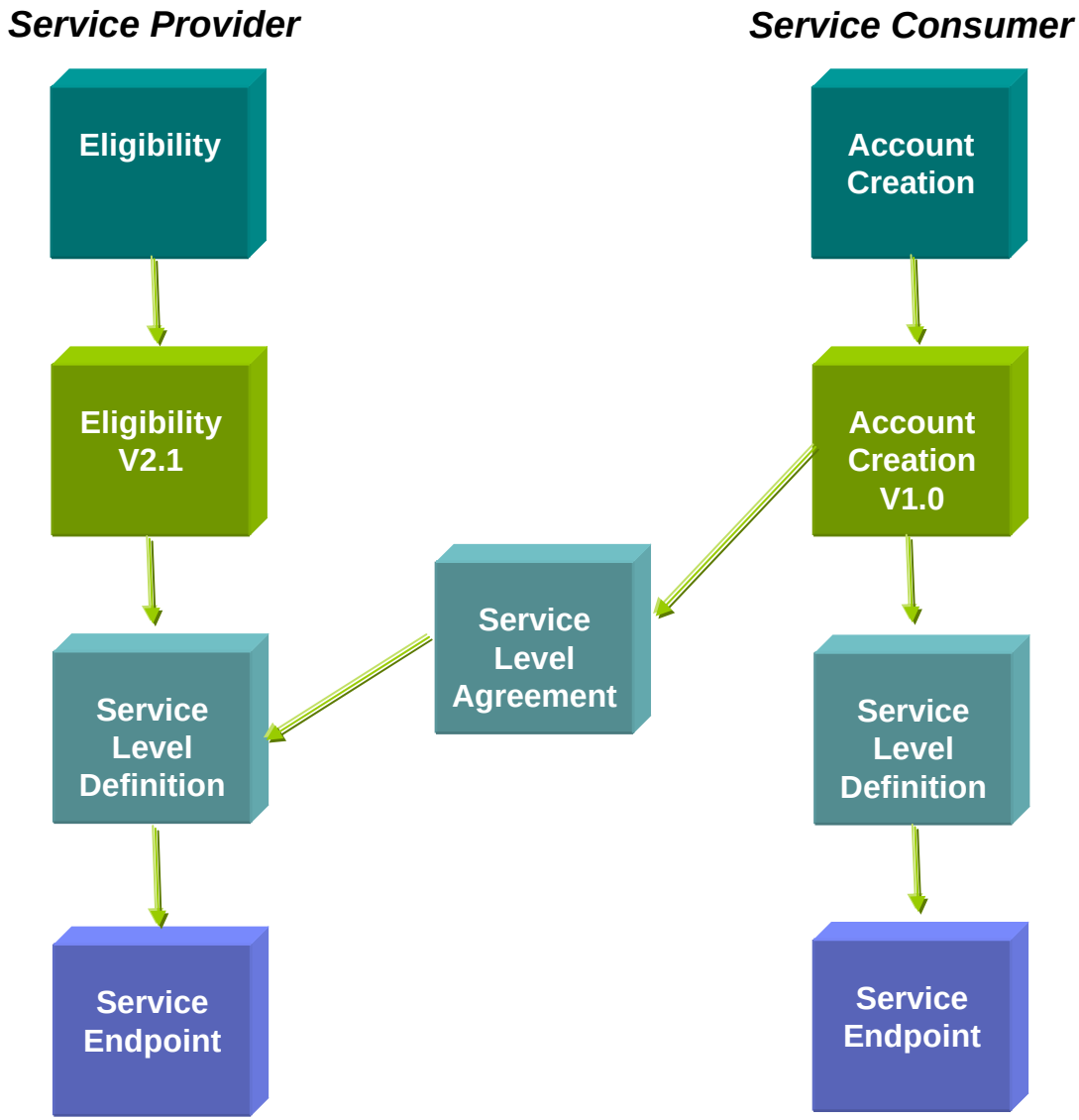
SOA Governance – solution portfolio level

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

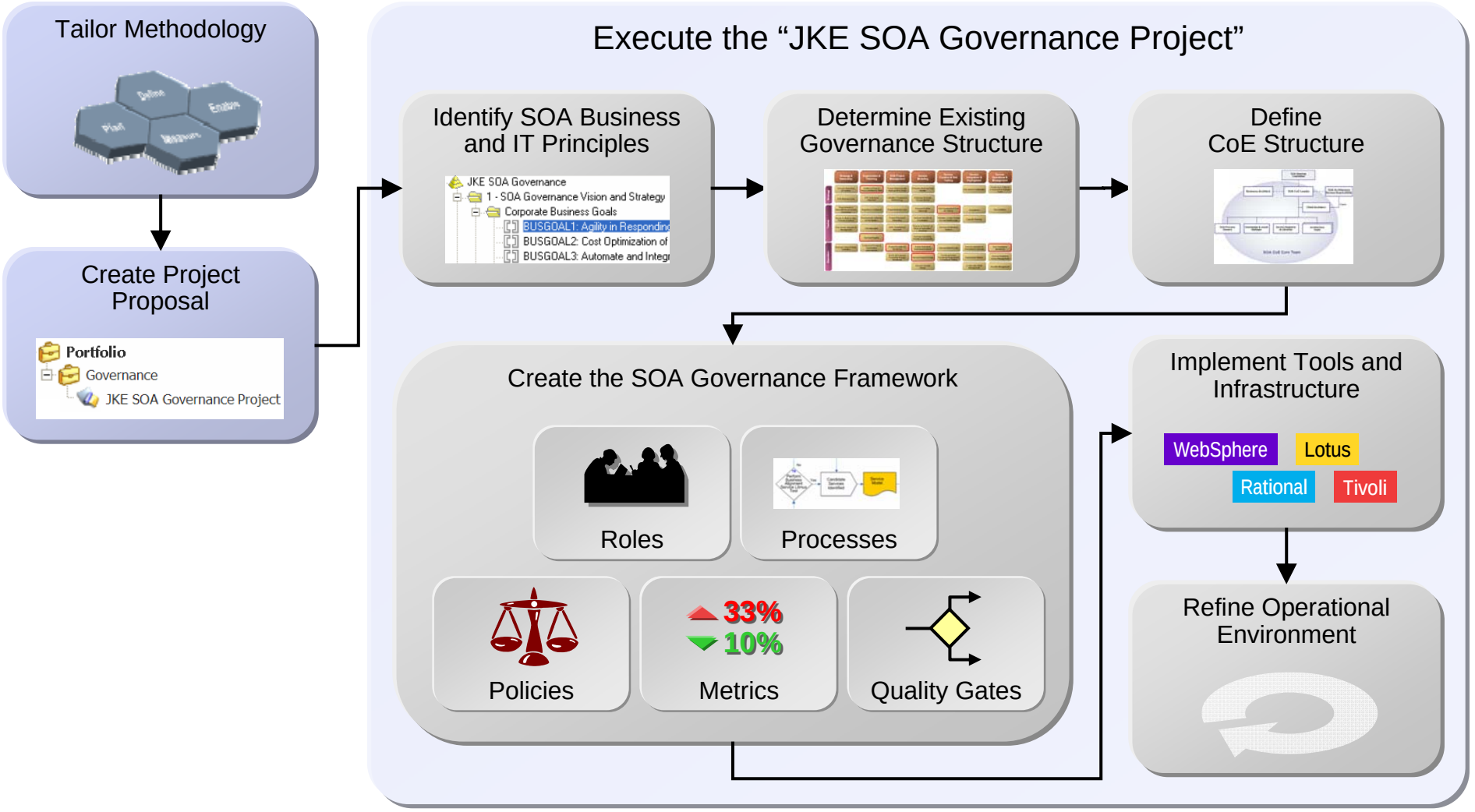
Service Governance – project service level

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

Governs the Service Consumers as well as the Service Provider

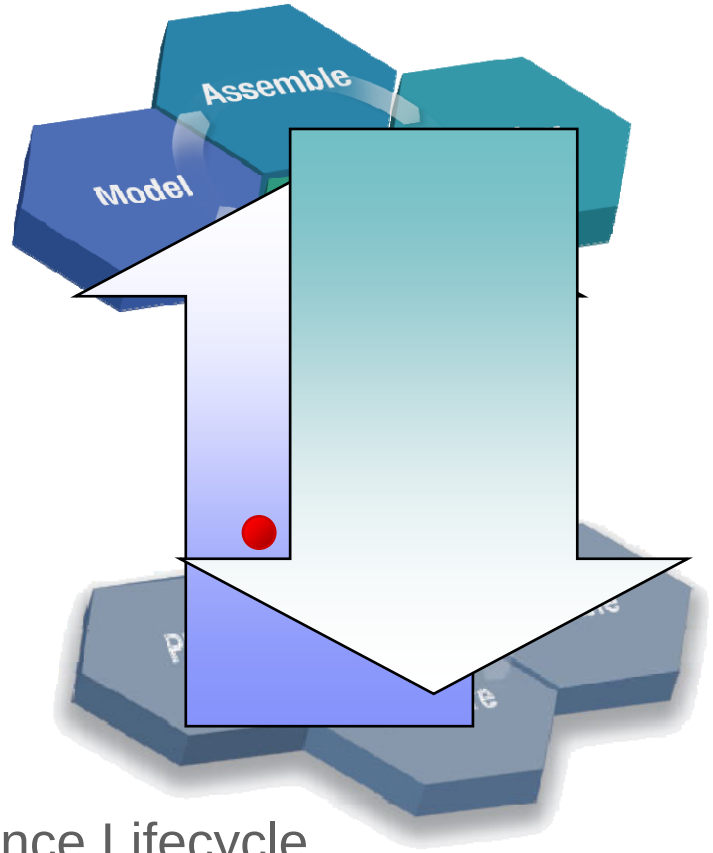


Example: Defining the Governance Solution



Interaction Between the Lifecycles

Service Lifecycle

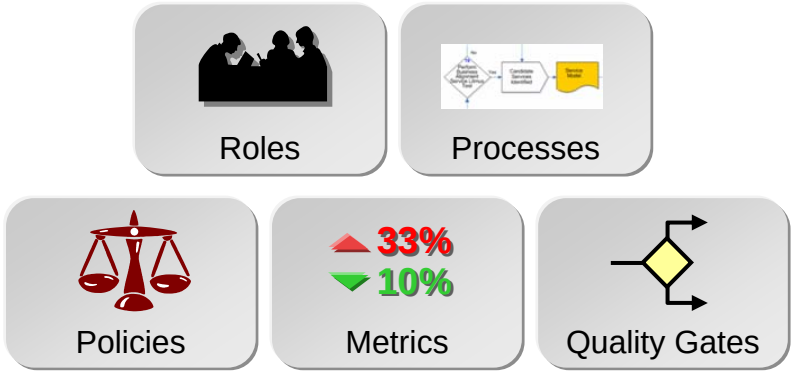


Governance Lifecycle

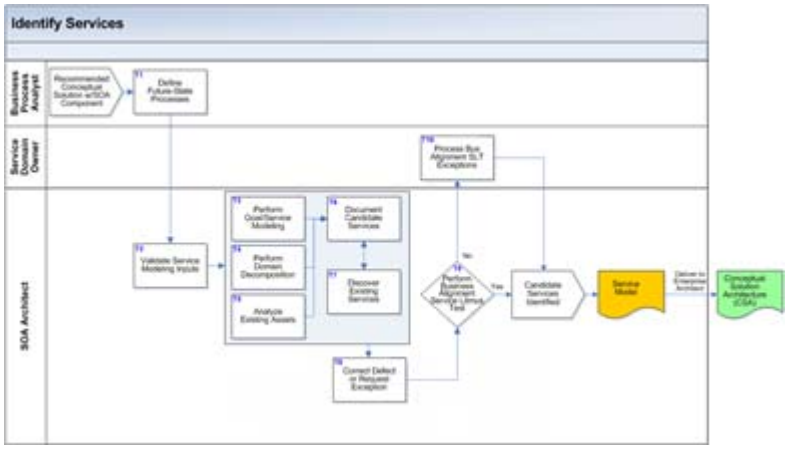
- Policies
  - **quality gates**
  - **controls**
  - **metrics**
  - **standards**
- **are *defined* in the Governance lifecycle (for different aspects of Governance)…**
- **…and they are *enforced* in the service lifecycle**
- **metrics are captured to improve governance process**

The Governance Framework (Extensions to Development Processes)

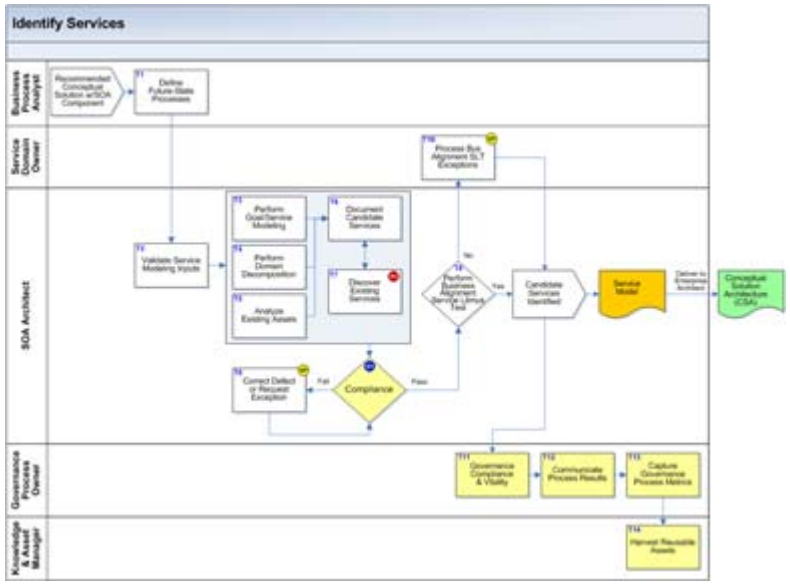
- **All the "elements" that we need to add to make a process well-governed**



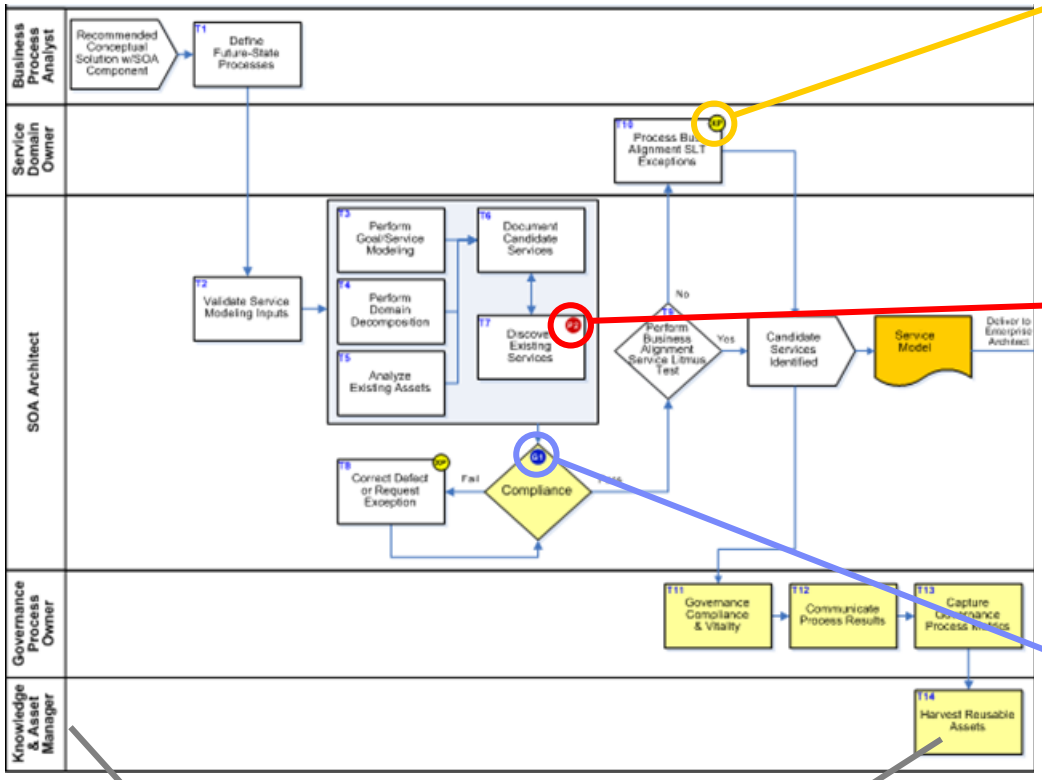
non-governed process



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

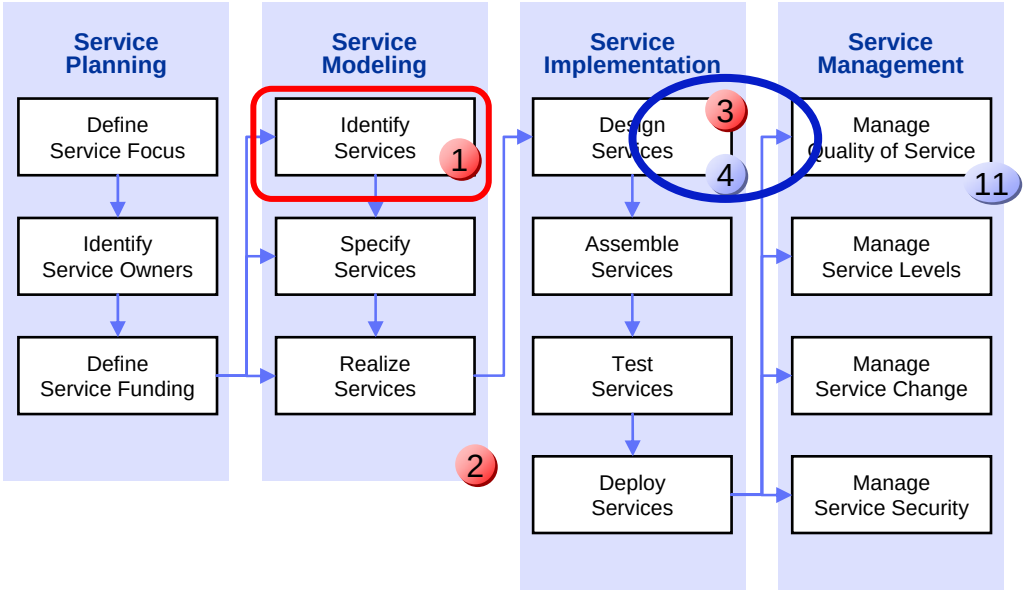
review

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

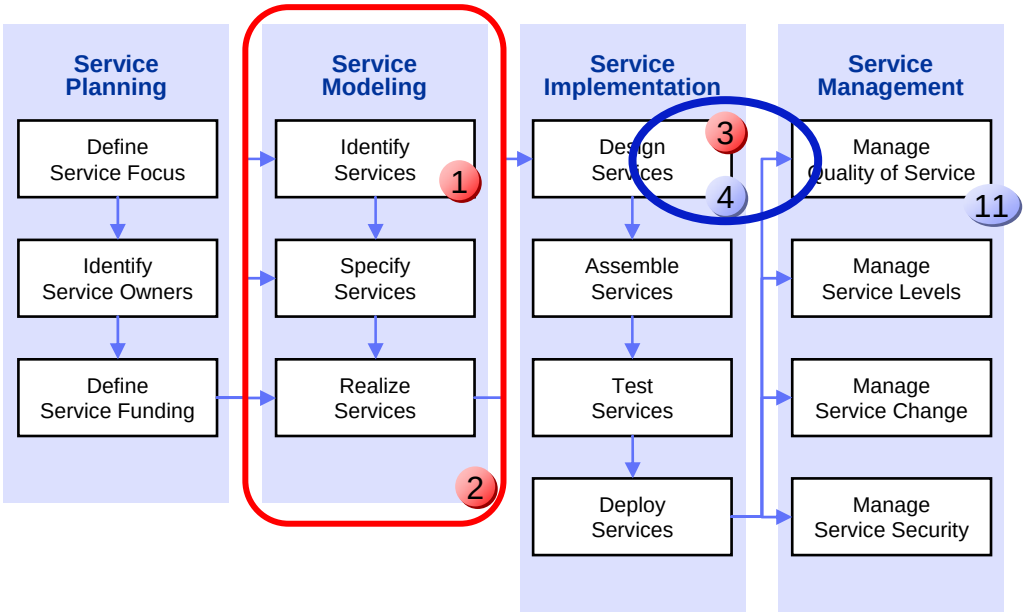


Policy 1 Services should be reused instead of created whenever possible

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

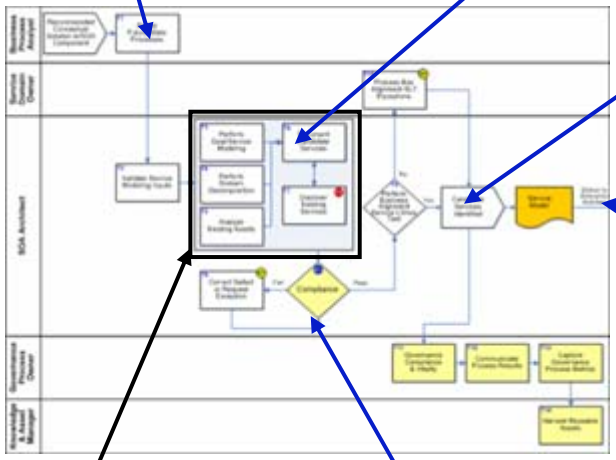
Governance at Development Time – Enforcing Policies of Services Life Cycle

Ensure Compliance and Define Policies

1. Service state transitions are defined based on governance solution

2. Validate Service Ownership

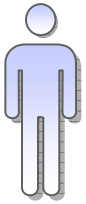
3. Registry Lookup to enforce reuse of existing services



5. Publish Service to repository after Litmus test is successful

6. Add a Policy for Dynamic Binding

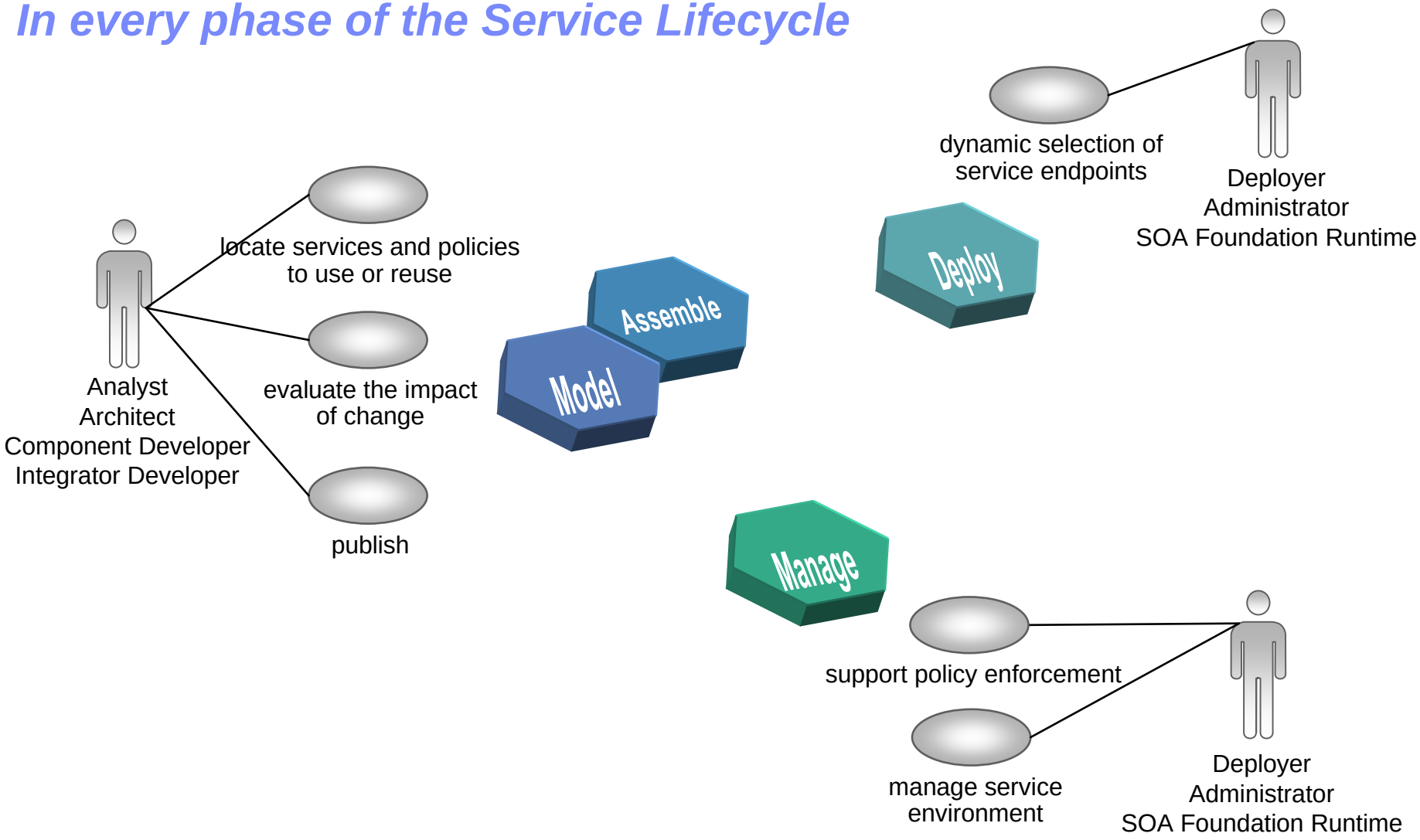
Service Analysis and Design



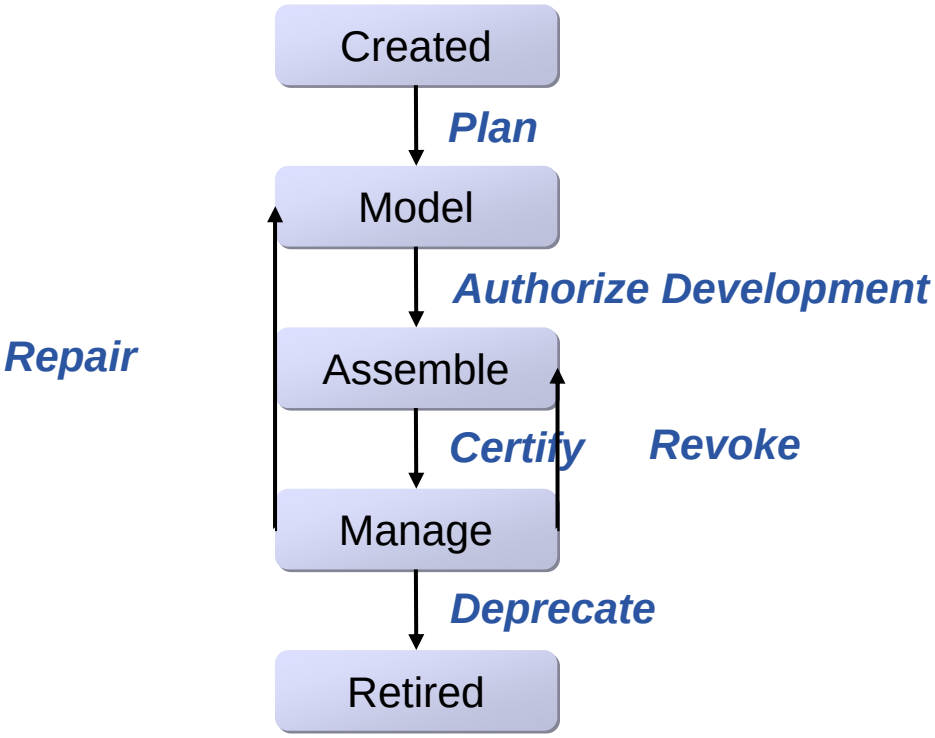
4. Validate Service Design for Standards Compliance

When is a Repository Used?

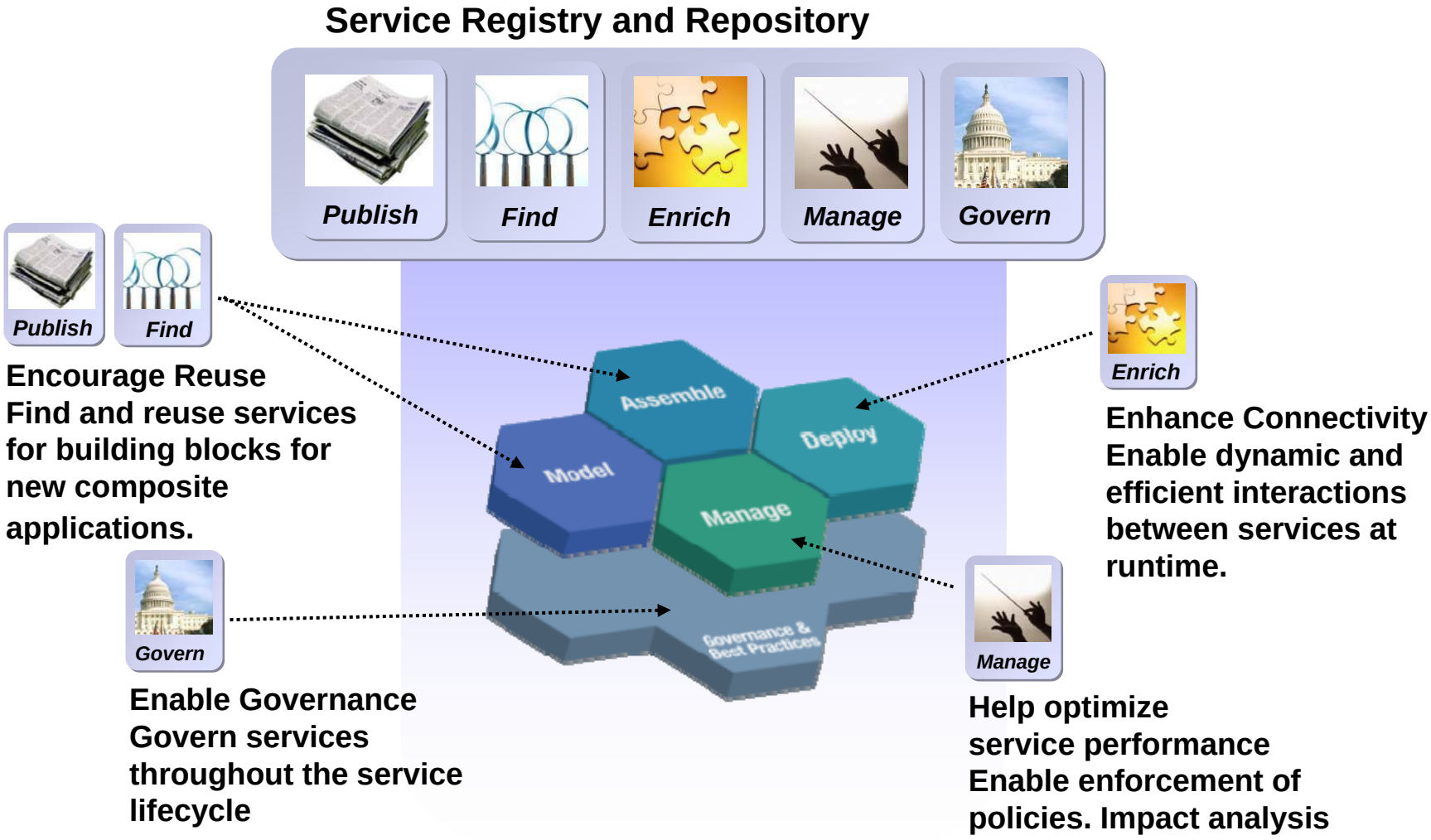
In every phase of the Service Lifecycle



Supporting the Steps of Service Life Cycle



Main Capabilities of Service Registry and Repository



APPENDIX – TOGAF

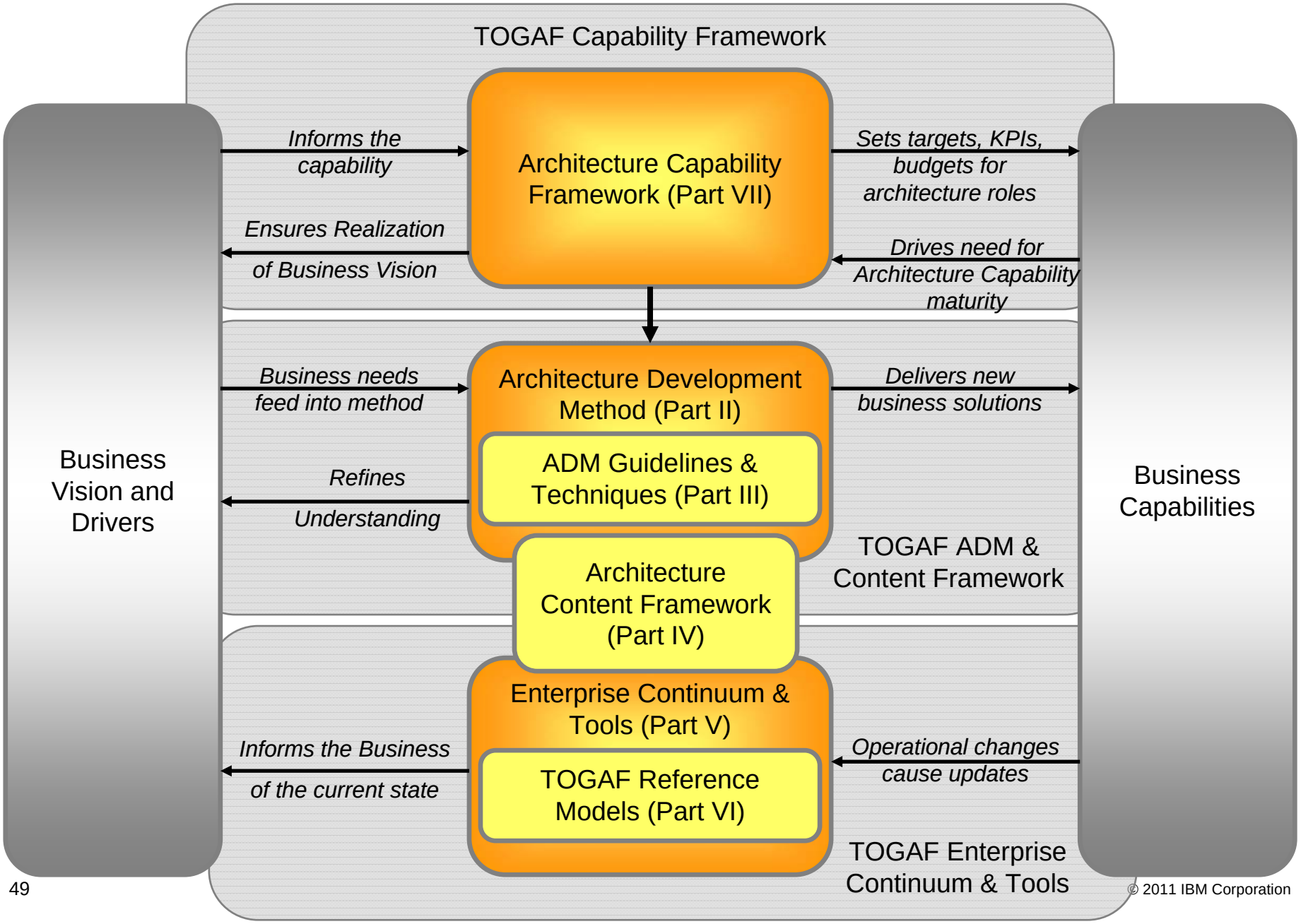
TOGAF (The Open Group Architecture Framework) 9.1

- **TOGAF Version 9.1 is a detailed method and set of supporting resources for developing an Enterprise Architecture. Developed and endorsed by the membership of The Open Group's Architecture Forum, TOGAF 9.1 represents an industry consensus framework and method for Enterprise Architecture that is available for use internally by any organization around the world - members and non-members of The Open Group alike - subject to license conditions.**

- **First developed in 1995, TOGAF was based on the US Department of Defense Technical Architecture Framework for Information Management (TAFIM). From this sound foundation, The Open Group Architecture Forum has developed successive versions of TOGAF at regular intervals and published them on The Open Group public web site.**

What is TOGAF®?

- **TOGAF, an Open Group Standard:**
  - **A proven enterprise architecture methodology and framework used by the world's leading organizations to improve business efficiency**
  - **The most prominent and reliable enterprise architecture standard, ensuring consistent standards, methods, and communication among enterprise architecture professionals**
  - **Enterprise architecture professionals fluent in TOGAF standards enjoy greater industry credibility, job effectiveness, and career opportunities**
  - **TOGAF helps practitioners avoid being locked into proprietary methods, utilize resources more efficiently and effectively, and realize a greater return on investment**



TOGAF 9.1 Content Metamodel