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Enterprise IT Architectures

Governance

Agenda of this Session

- Governance Introduction
  - Definitions (IT Governance, EA Governance)
- Enterprise Architecture Governance aligning Execution with Strategy
  - Capabilities
  - Principles
- Enterprise Architecture Governance (Organization and Management)
  - Boards, CoC (Center of Competence)
  - Transition
- SOA Governance
  - Life Cycle

Governance – Introduction

Governance: Introduction Comment

- Governance matters
  - Realize business benefits, Business process flexibility and Improve time to market
  - Mitigate business risk
  - Improves team effectiveness by measuring the right things and communicating clearly between business and IT

- Hint:
  - Align Governance as as much as possible to “C”-management procedures
  - Act as Enabler – not Inhibitor

What is Governance?

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

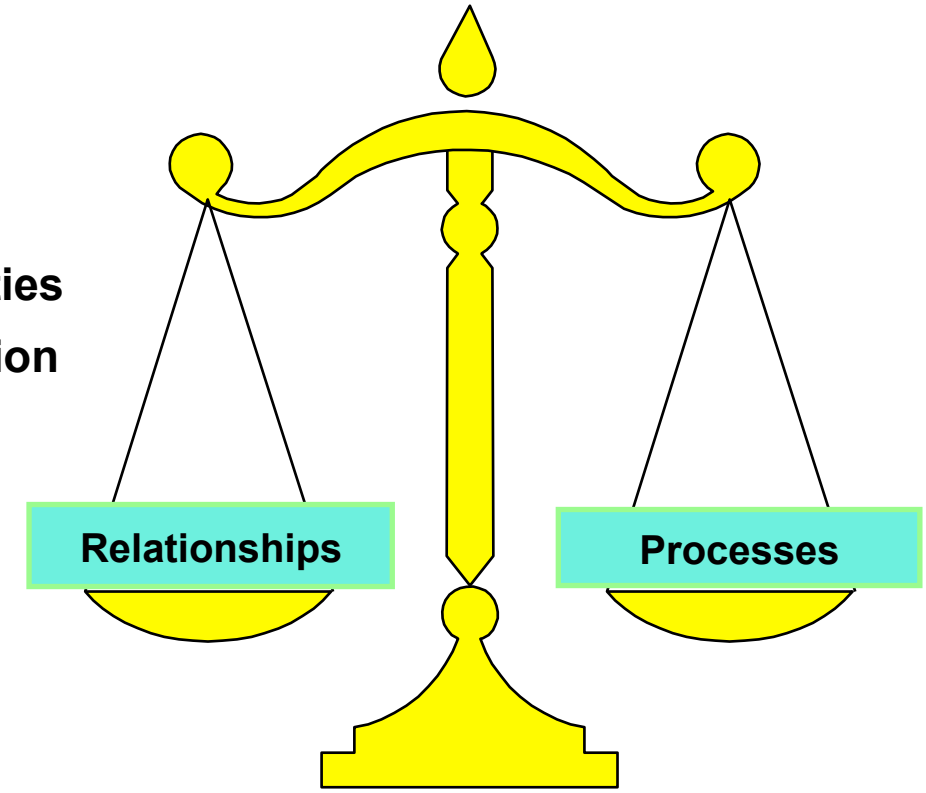
Establishing **measurement, policy and control mechanisms to** enable **people to carry out their roles and responsibilities**

- 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

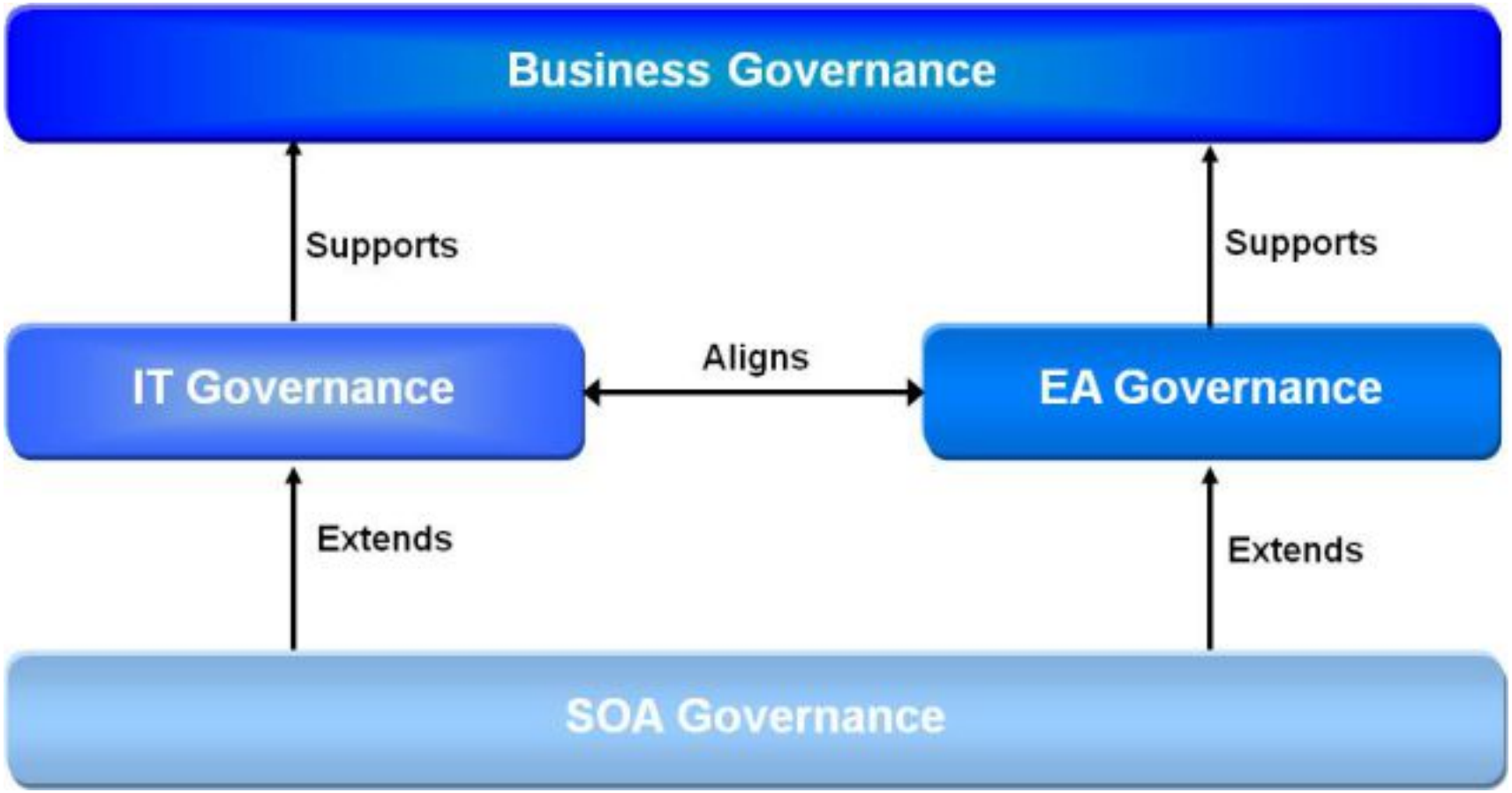


THE WAY

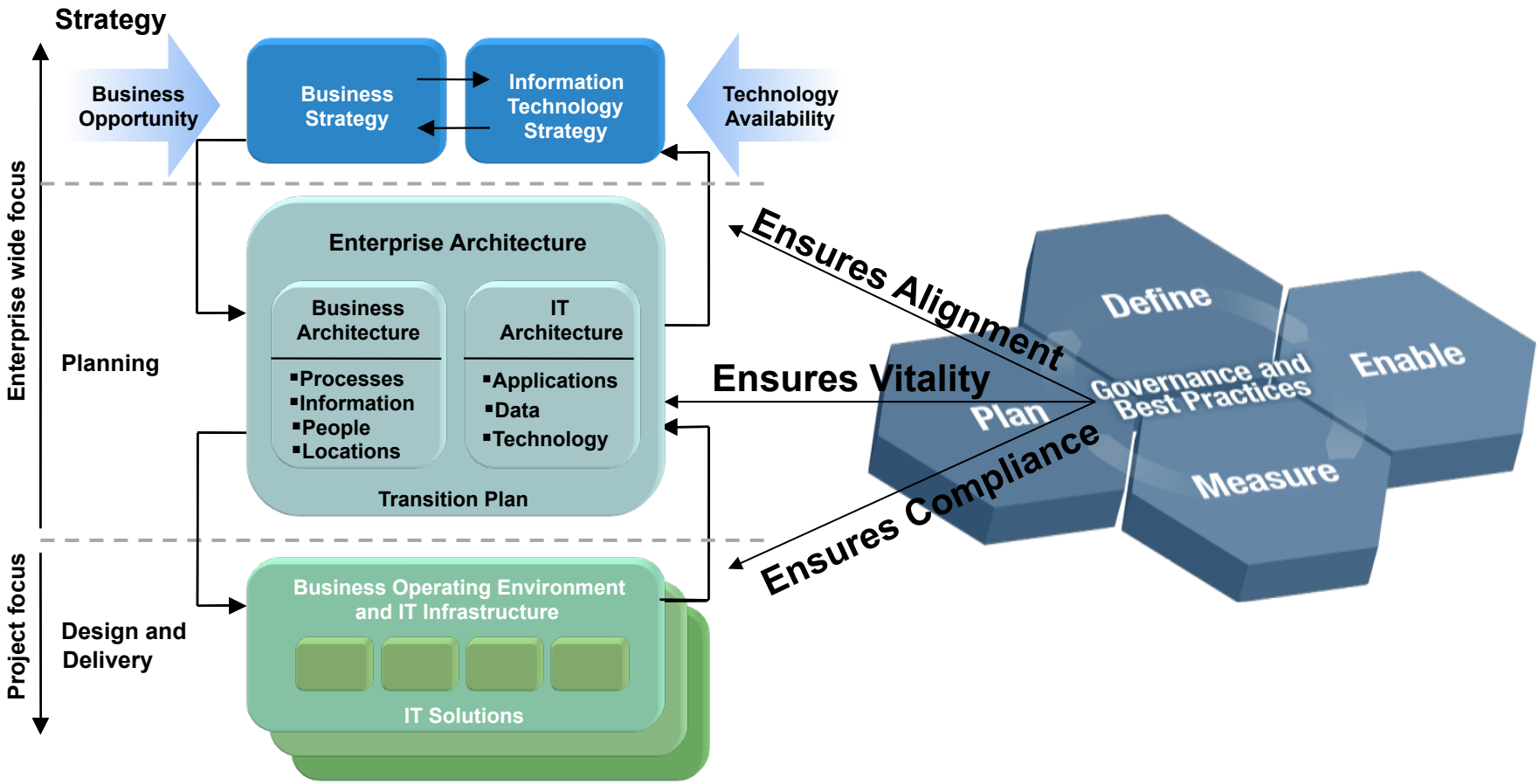
- Charter
- Organization
- Principles
- Processes
- Roles & Respon.
- Metrics
- Tools

Communication

Positioning Various Types of Governance (quote from TOGAF)



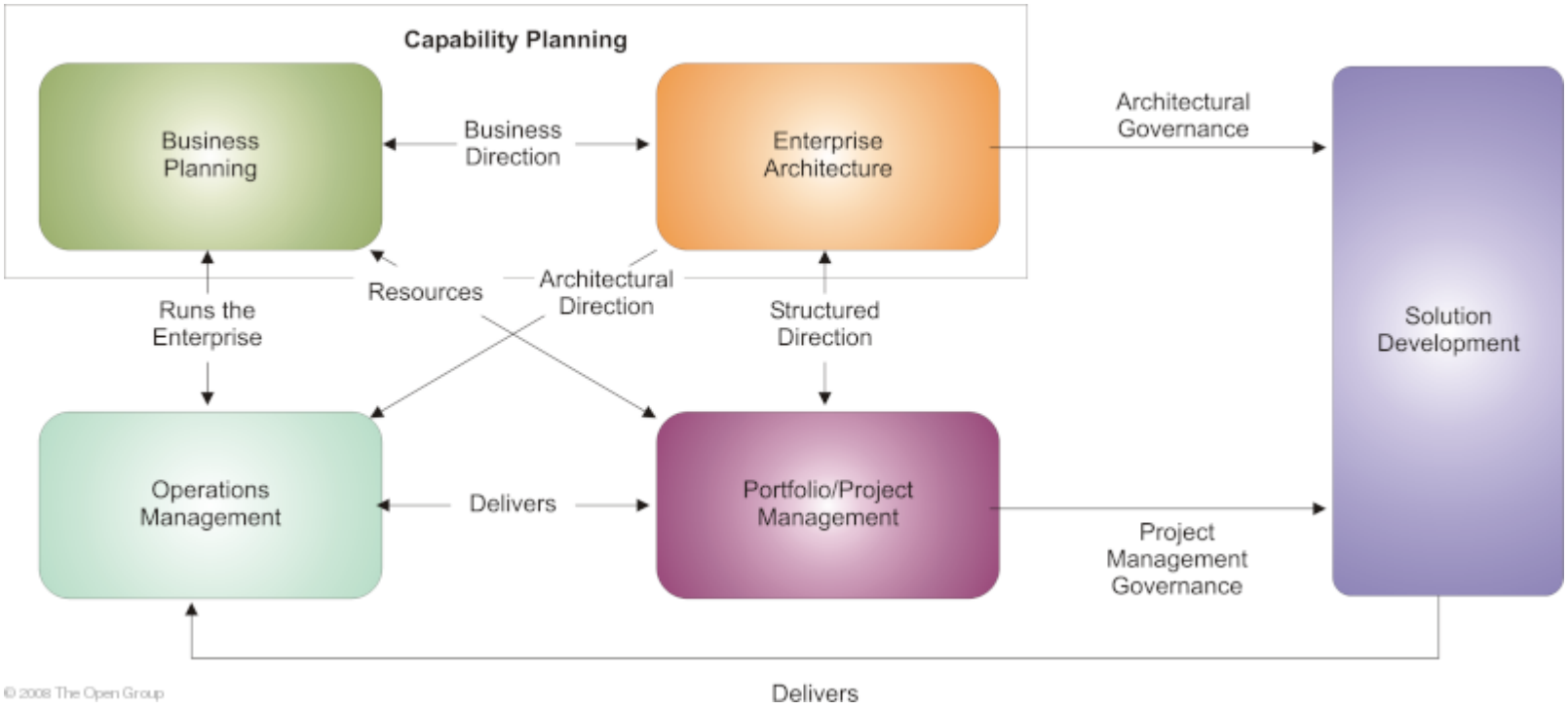
Enterprise Architecture and Governance



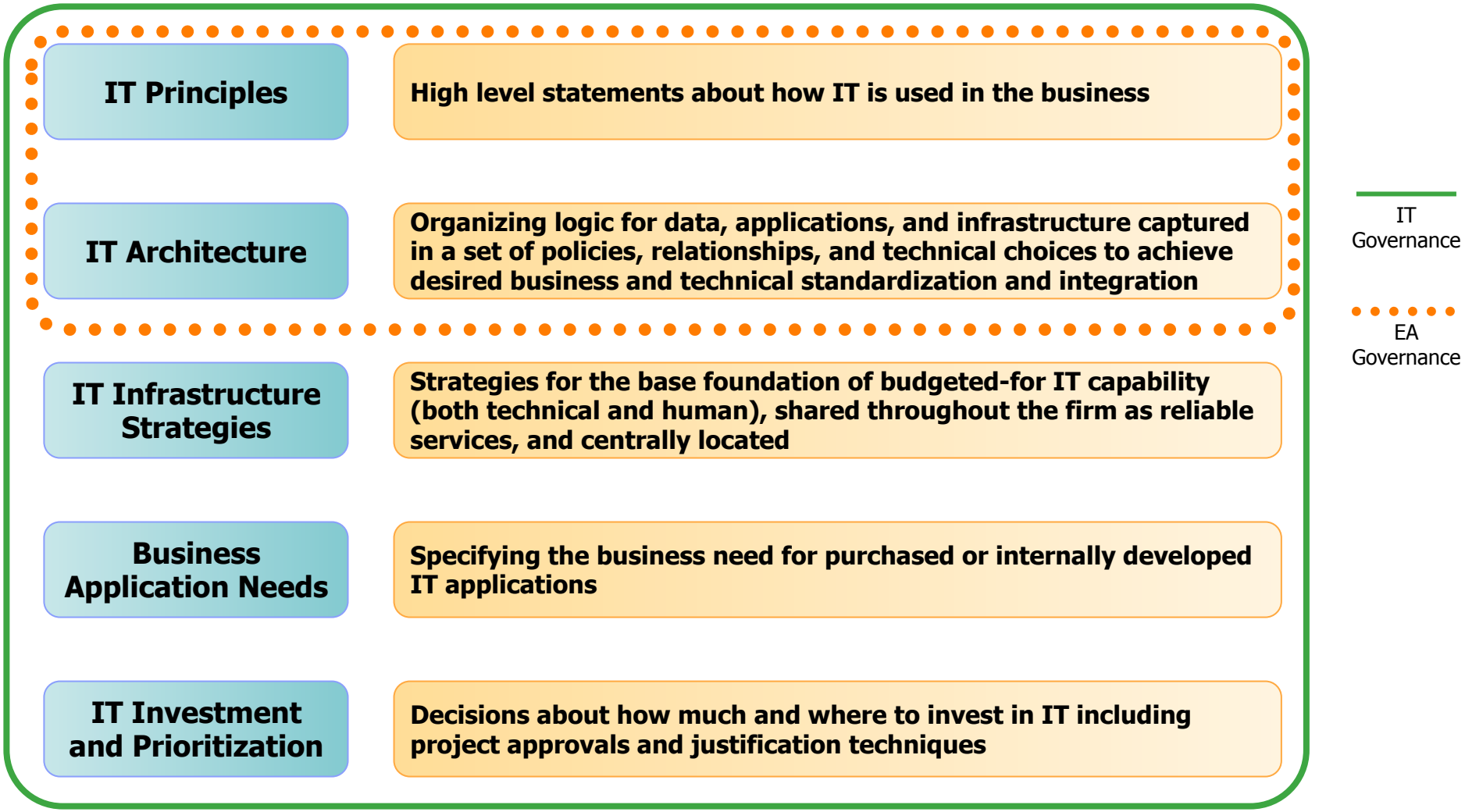
Governance !

Context of the wider Enterprise

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

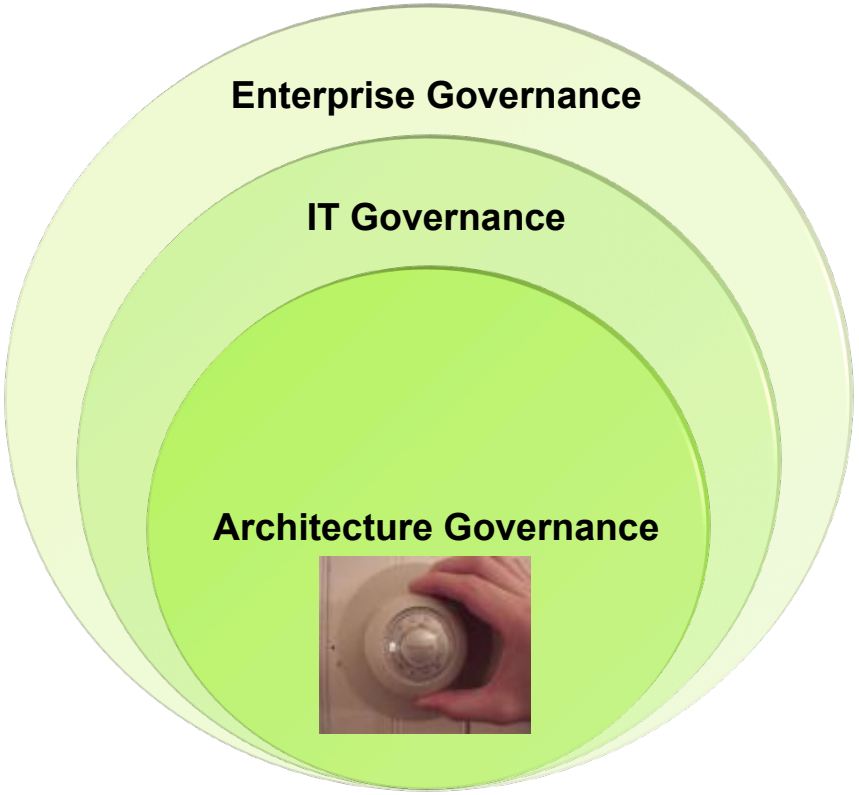


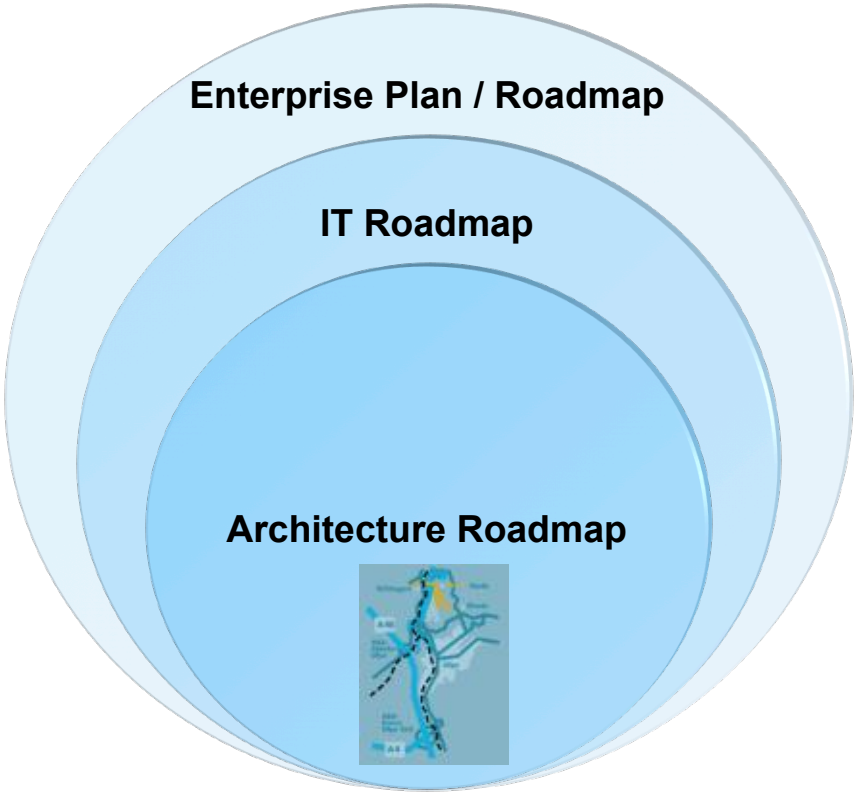
EA Governance (how EA decisions are made) is a subset of IT Governance (how IT decisions are made)



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





Enterprise Architecture Governance aligning Execution with Strategy

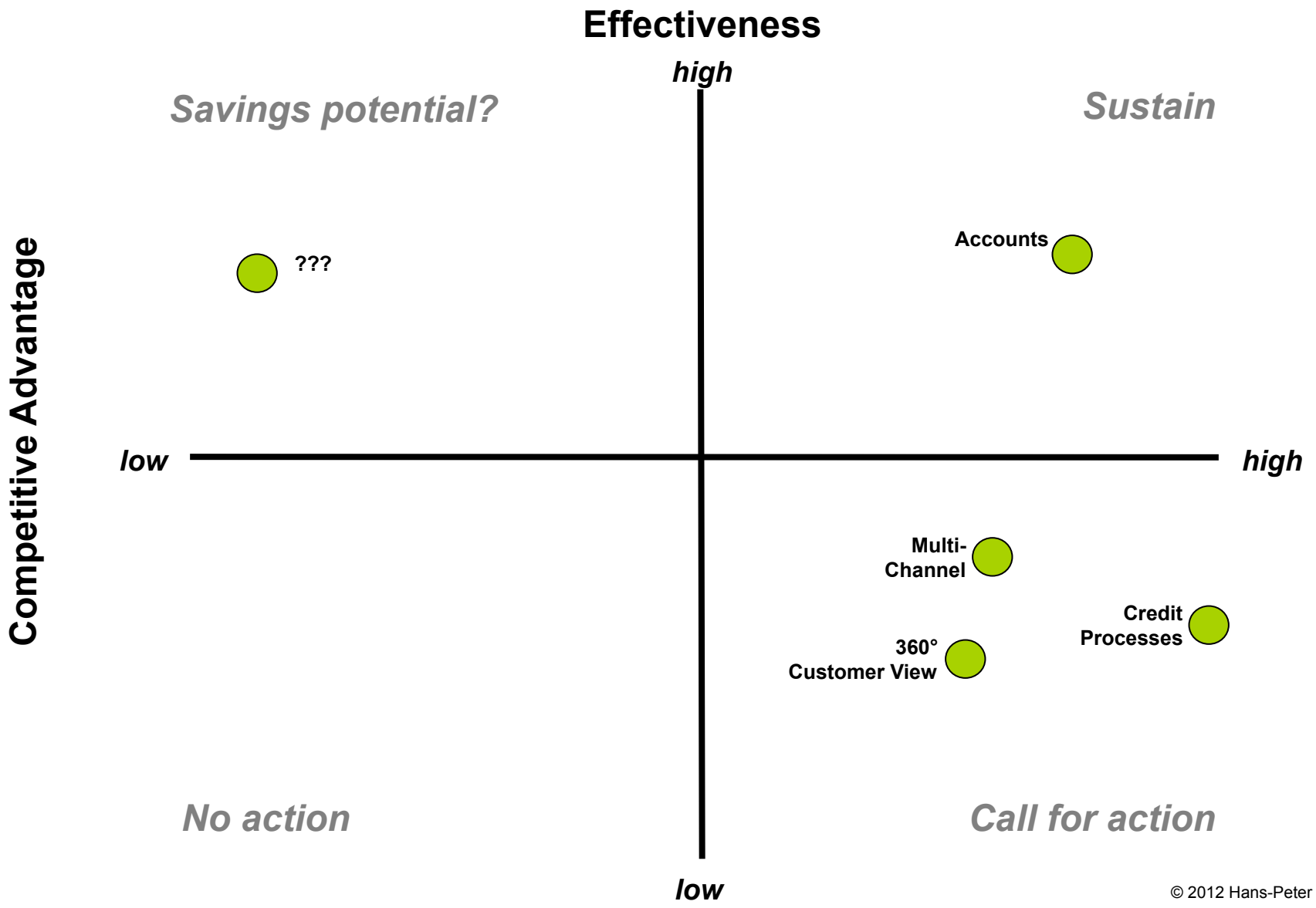
Capabilities: Introduction Comment

- **Focus on *Capabilities* enables EA to better organize Business, IS & IT assets to meet requirements**

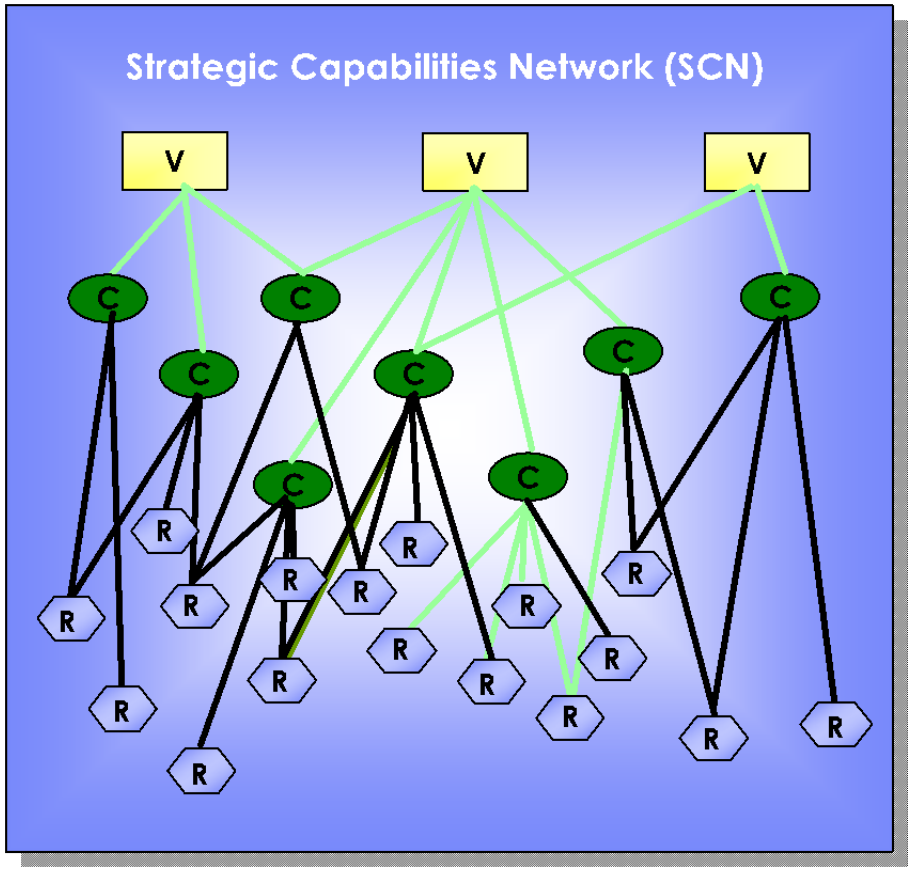
- **Examples**
  - **Single Face to the customer (360 view)**
  - **Ability to offer customized credit products**
  - **Ability to influence component quality**

- **Hints:**
  - **Let "C"-management express capabilities and explain how well they are handled (see Competitive Capabilities Map) – Getting Buy-In**
  - **Use CBM (Component Business Mapping) und SCN (Strategic Capabilities Network) – they are complementary**

Illustration: Competitive Capabilities Map



SCNs (Strategic Capabilities Network) link Strategy and Architecture via three key concepts.



- *Value Proposition*: What a company needs to be in order to offer a differentiated value to the market.

  Example: Ikea's low cost, customer convenience, modular design

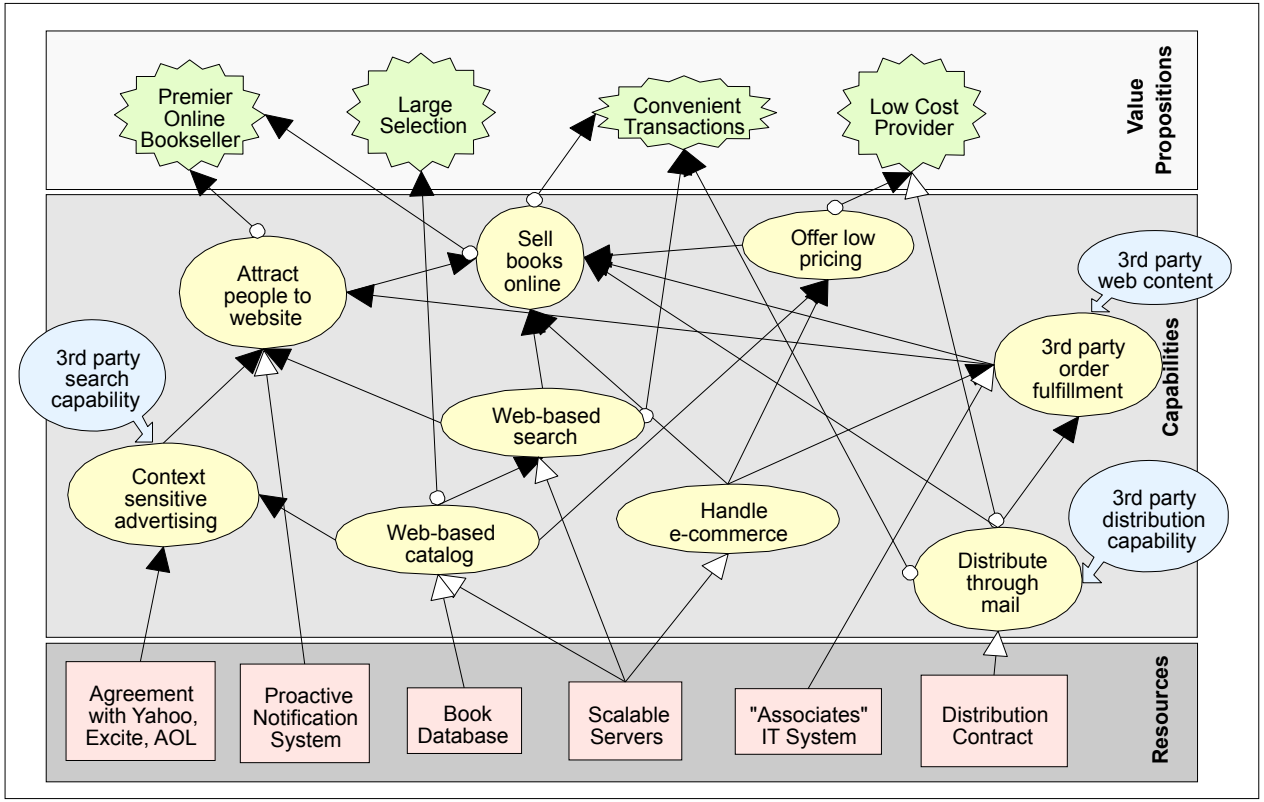
- *Capability*: What a company needs to do in order to achieve its strategic positions. Capabilities perform, improve, and create the activities of the firm.

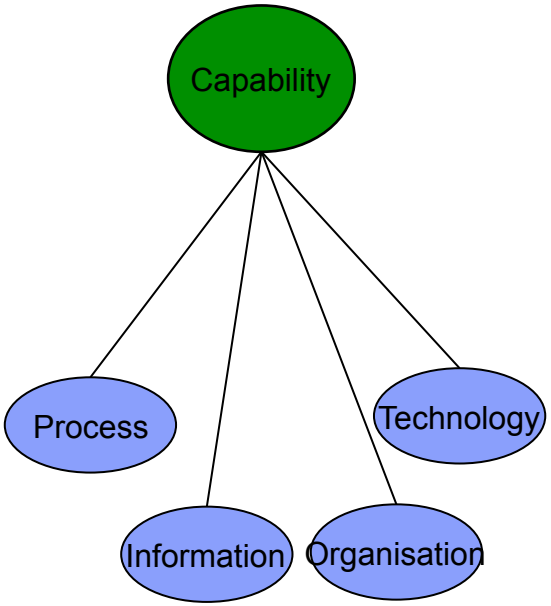
  Example: Ability to design for customer assembly, Ability to merchandise in-store and online.

- Capability Enabler (*Resource*): What a company needs to have in order to perform its capabilities. Resources represent the process, knowledge, organization and technology assets of the firm.

  Example: In-house engineers and designers, store locations, store layout expertise, web developer/programmer, server…

Enterprise Capabilities: Aligning Architecture to Strategy (Example Amazon)





Principles: Introduction Comment

- Principles
  - The term “principle” is widely but not consistently used “Defines the underlying general rules which an enterprise will use to make decisions“
  - Principles must show a clear traceable link back to business goals and to specific IT requirements
  - Principles should be consistent and aligned with business strategy and initiatives
  - Principles should be well expressed (Name, Description, Motivation, Implication)

- Hint: let “C”-management express Guiding Principles and explain how well they are handled (see Example)

There is often three levels of formality:

1. *Policies are often legally binding, and usually externally imposed*
2. *Principles are generally internally generated, and not legally binding*
3. *Guidelines are usually "nice to have"*

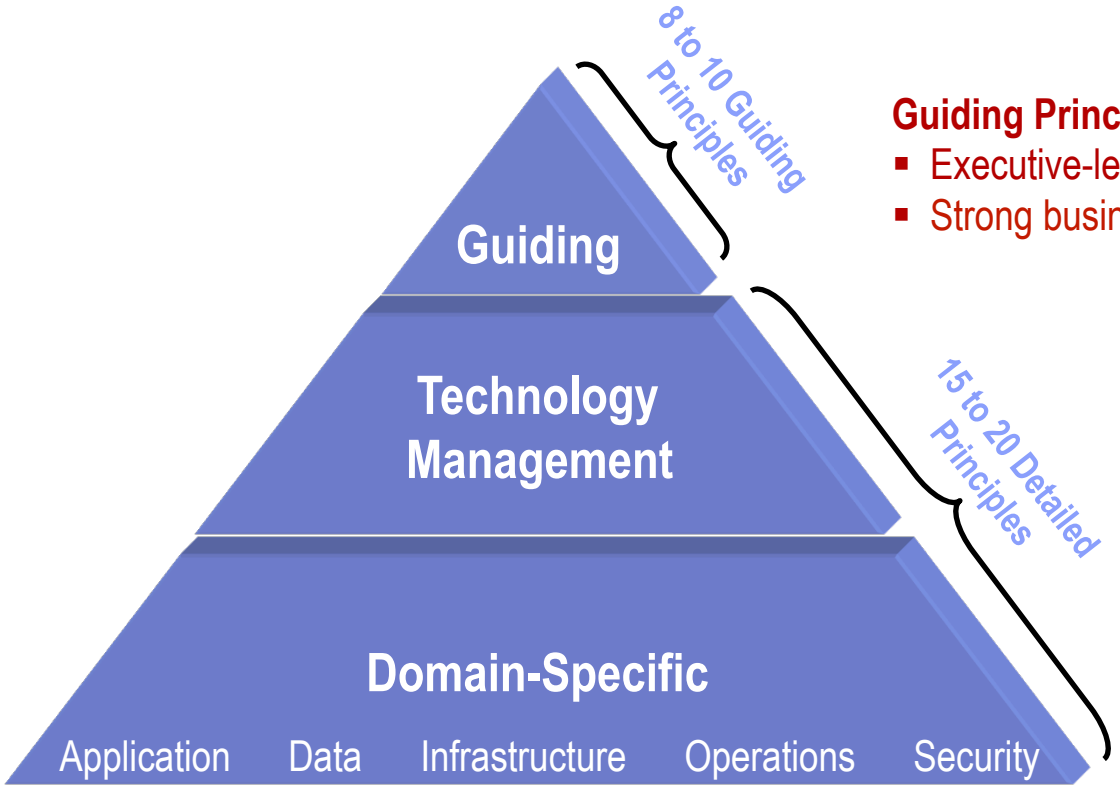
Definitions

Term	Definition
Key Architecture Driver	Typically broad, high level statements, which define WHAT the EA must do, in order to support the business and IT strategies and be seen as successful and effective by the business. If capabilities have been defined, these will provide the key drivers for the architecture.
Principle	"A fundamental truth or proposition that serves as the foundation for a system of belief or behaviour or for a chain of reasoning." The New Oxford Dictionary of English Defines the underlying general rules which an organisation will use to make decisions about the selection, utilisation and deployment of all business and IT resources and assets, across the enterprise.
Policy	A high level statement of how things will be managed or organised, including management goals, objectives, beliefs and responsibilities.
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.

Example *Guiding Principles* – Early Iteration

Guiding Principle	Description
Investigate TCO, ROI, and Risks	One of the element of risk management is that small suppliers should provide access to the code.
Reuse standard before buy standard before reuse non-standard solution before build internal solution	Standard is very important, reuse is the second choice but reuse of non-standard could be very costly and risky. Market applications (packet solutions) as seen as standards. This also applies to processes etc.
Simplify the portfolio of applications and reduce the complexity of the environment	Complexity of environment includes challenging the business requirements in order not to implement unnecessary functions.
"Do not reinvent the wheel" – use assets	
Manage Information/Data as a corporate wide asset	

It is convenient to classify EA Principles to assist in understanding and communication.



Guiding Principles:

- Executive-level focus
- Strong business flavour

Detailed Principles:

- Focus on more detailed and specific principles
- Tend to have more of a technology focus

Note:

- Principles should be consistent with capabilities and reinforce or support these.
- Senior executive commitment is imperative if changes are to be effected. As such the number of Guiding Principles should be limited to a maximum of 10.
- More detailed principles are needed for architects and developers to help them design and implement solutions which deliver the business capabilities.

EA Principles must be at a consistent level, provide guidance and not dictate how things should be done in the organization

Defining Principles - Rules, Guidelines

A good principle:

- States a fundamental belief of the enterprise in one or two clearly written sentences.
- Recommends an action against which some arguments could be made.
- Has relevance to a technical architecture.
- Is worded directly and simply in terms understandable by both business and IT managers.
- Has business wide applicability.
- Is durable; will not be outdated quickly by advancing technology.
- Has objective reasons for advancing it instead of the alternatives which were considered.
- Has impacts which need to be documented.
- Represents change

A poor principle:

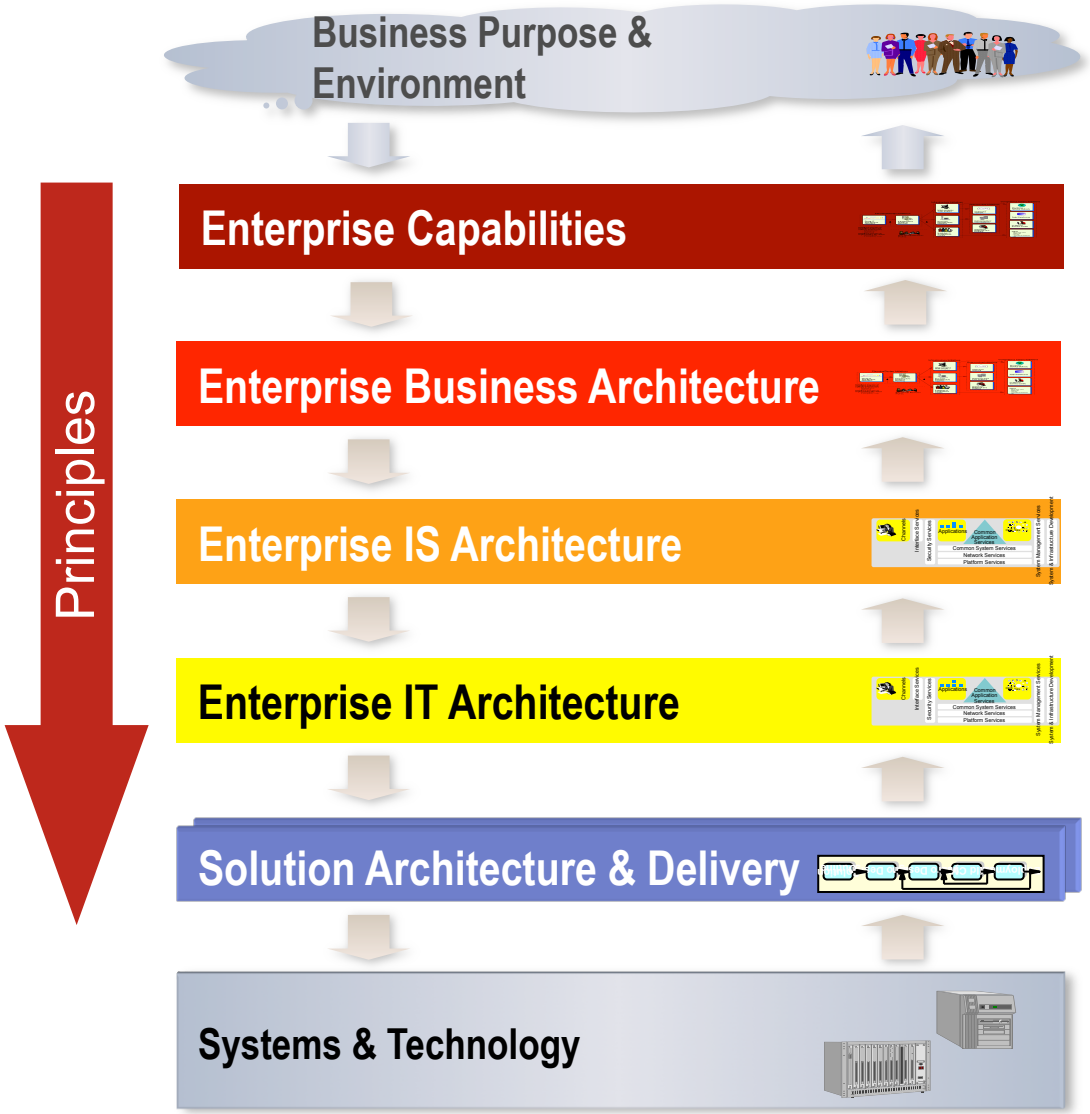
- Makes a statement which no one would dispute.
- Is a general business or financial statement.
- Has little or no general applicability. It may actually select a standard or a technology.
- Is stated at too low a level of detail and may not endure.
- May be included "because I say so".

A Context for Principles … why have Principles?

Enterprise Architecture provides a framework to guide investment and design decisions to support **business intent.**

Principles provide a means to articulate the architectural implications of that business at a high level.

- **Facilitate behaviour change;**
- Describe preferred practices;
- Reflect vision of improved ways of using technology to benefit business;
- Reflect high-level business & IT requirements in a commonly understood way;
- Rules or guidelines that apply across the business: to guide architects, designers, developers;
- Capture the “spirit” of the architecture.

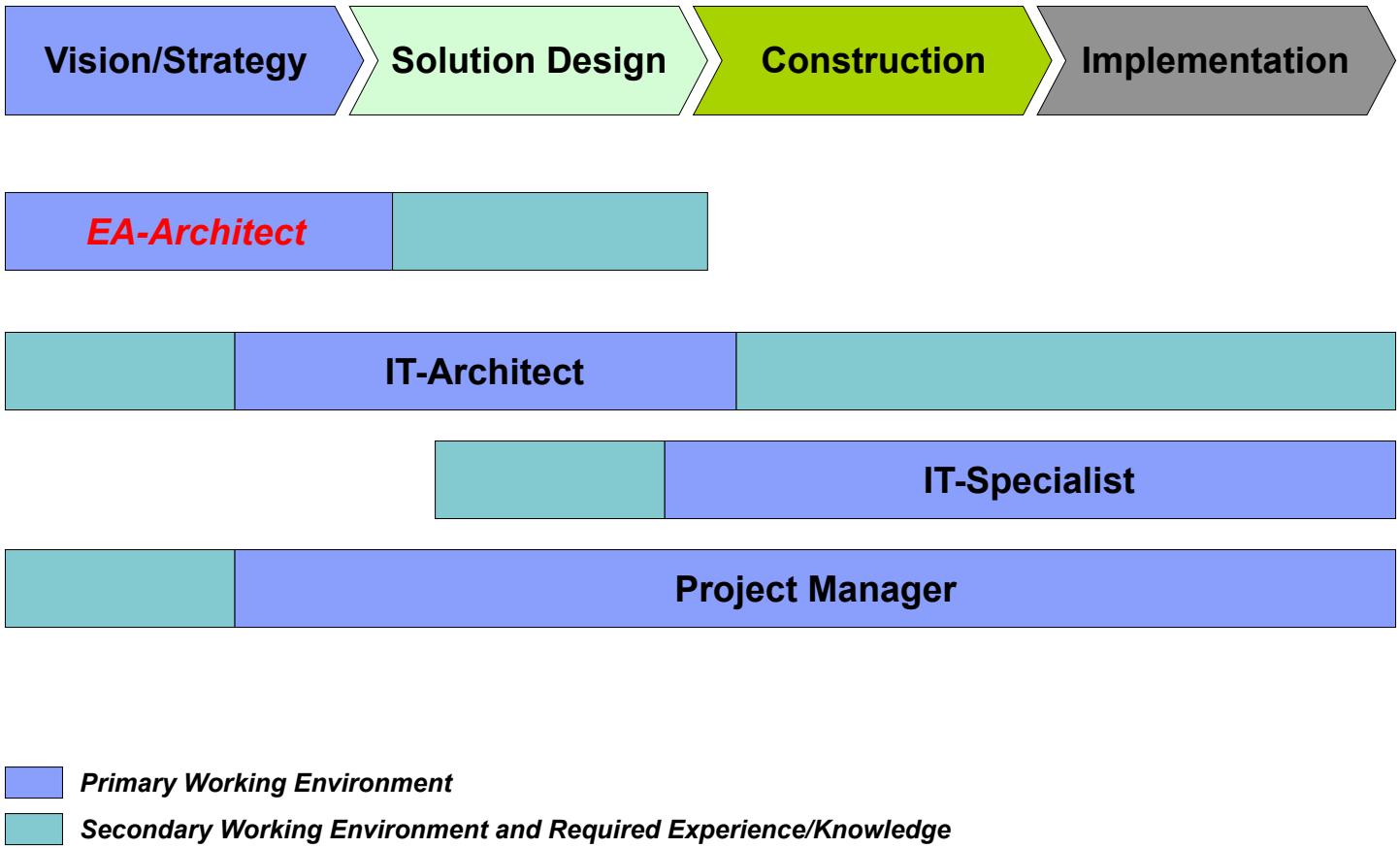


Effectiveness of principles is dependent upon some key success factors …

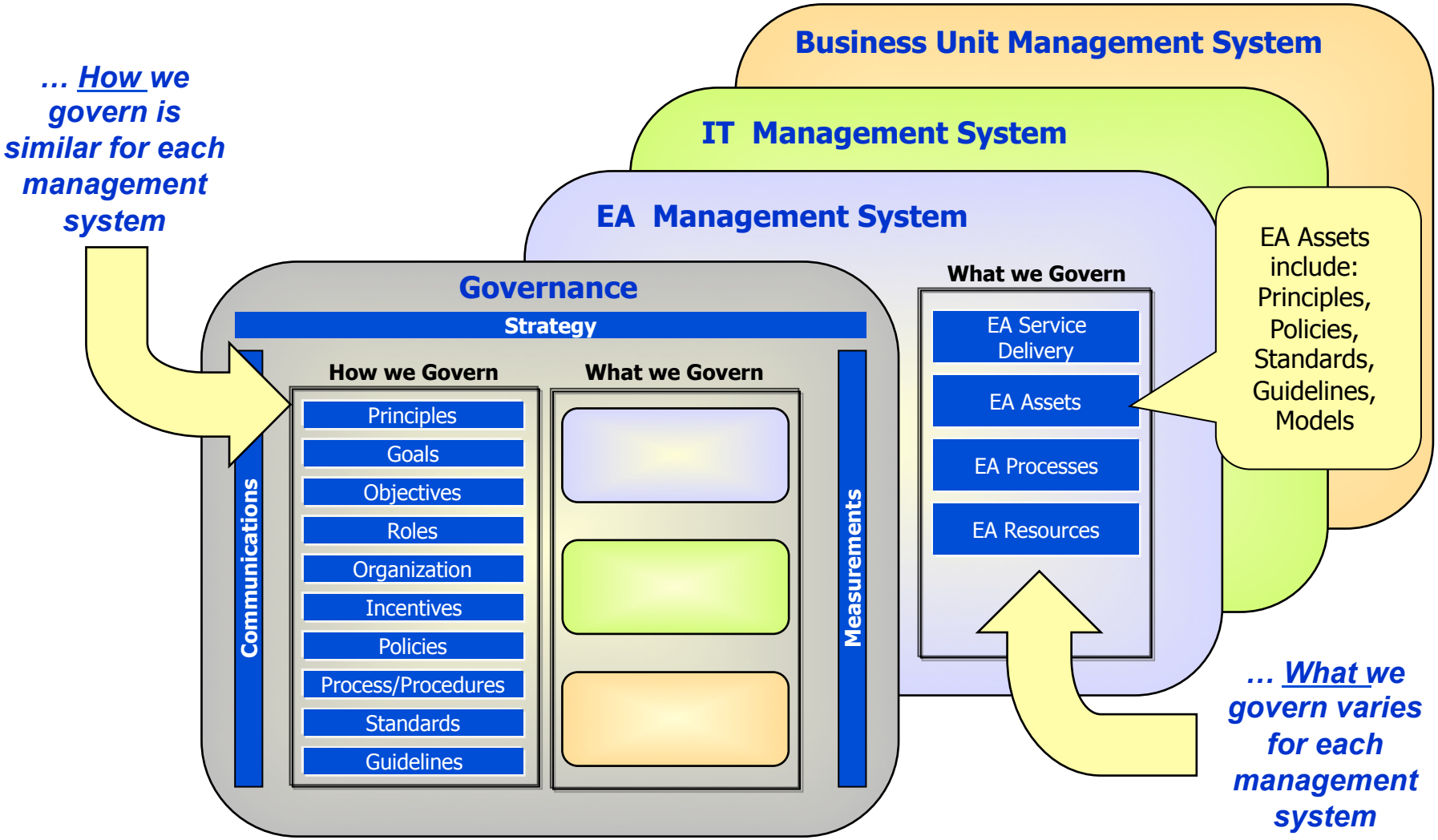
- Ownership
  - By Architecture Review Board.
- Engagement & Involvement
  - Created and endorsed by business and IT executives who have the authority to enforce.
  - Top-down support through leadership and action.
- Compliance Process
  - Compliance to Principles needs to be part of governance process.
- Communication
  - Architecture orientation and training.
  - Communication to all stakeholders and participants.

Enterprise Architecture Governance (Organization and Management)

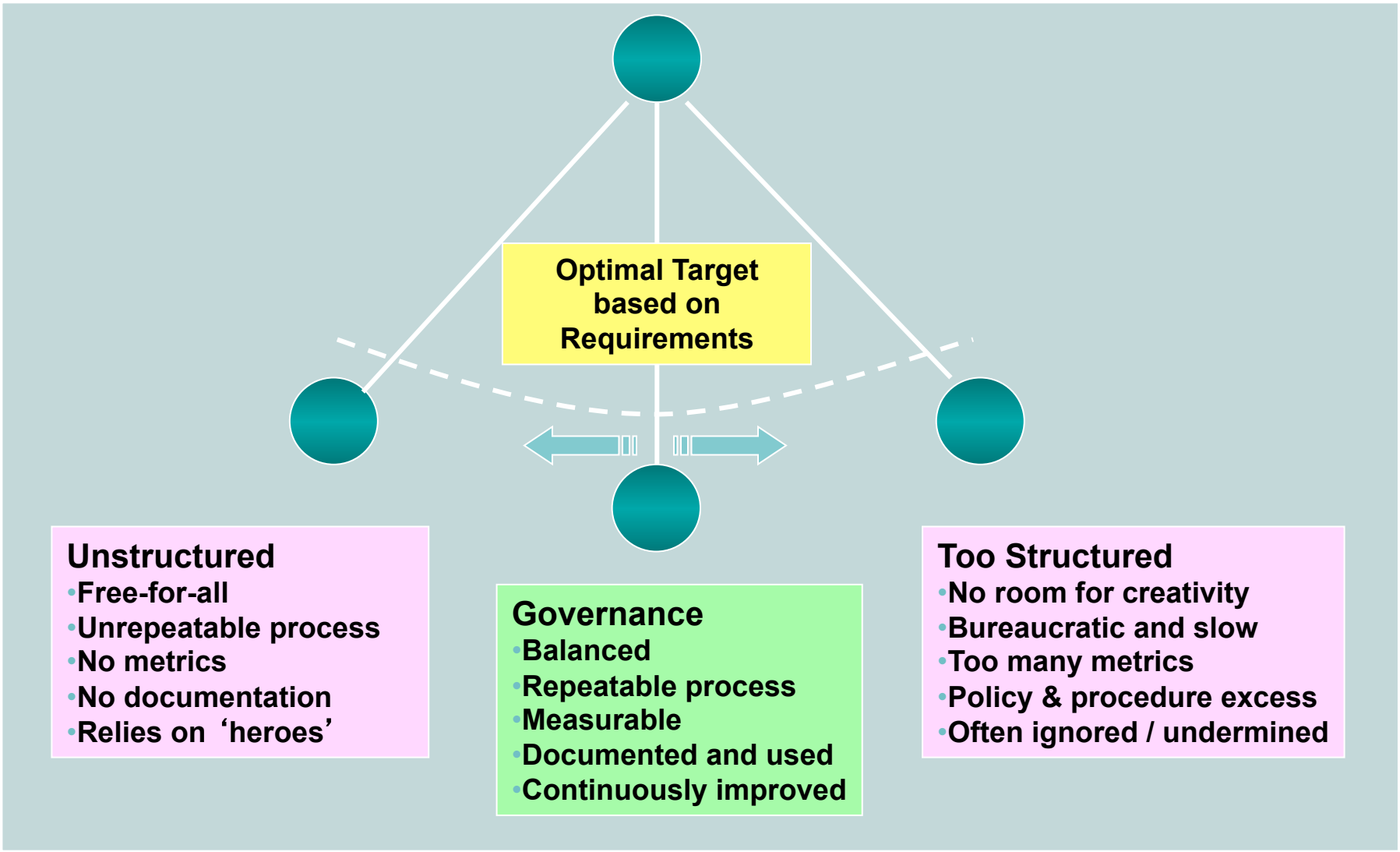
EA Architects are primarily involved in strategy and solution design stages



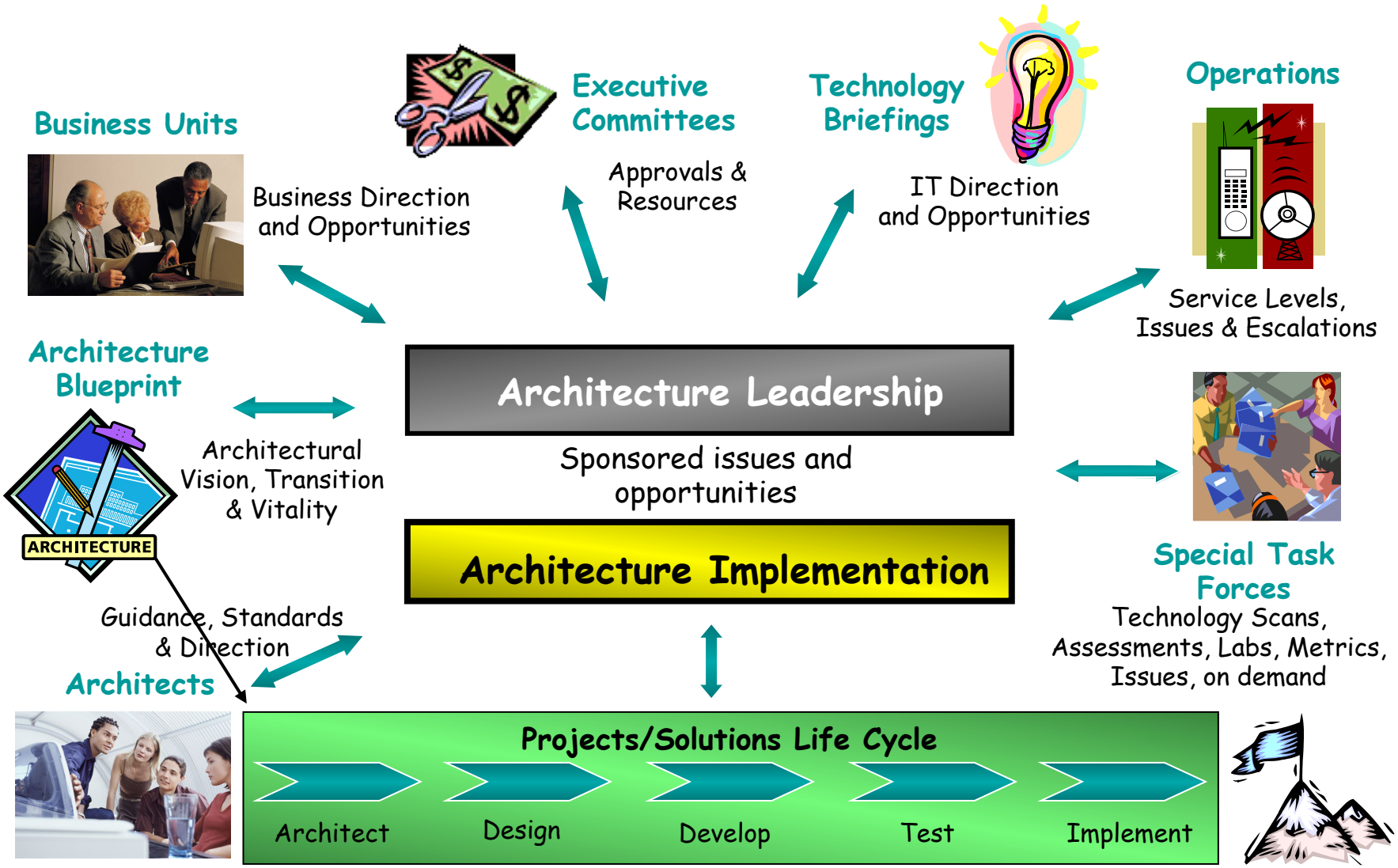
Governance specifies how decisions are made within a targeted Management System – in this case Enterprise Architecture.



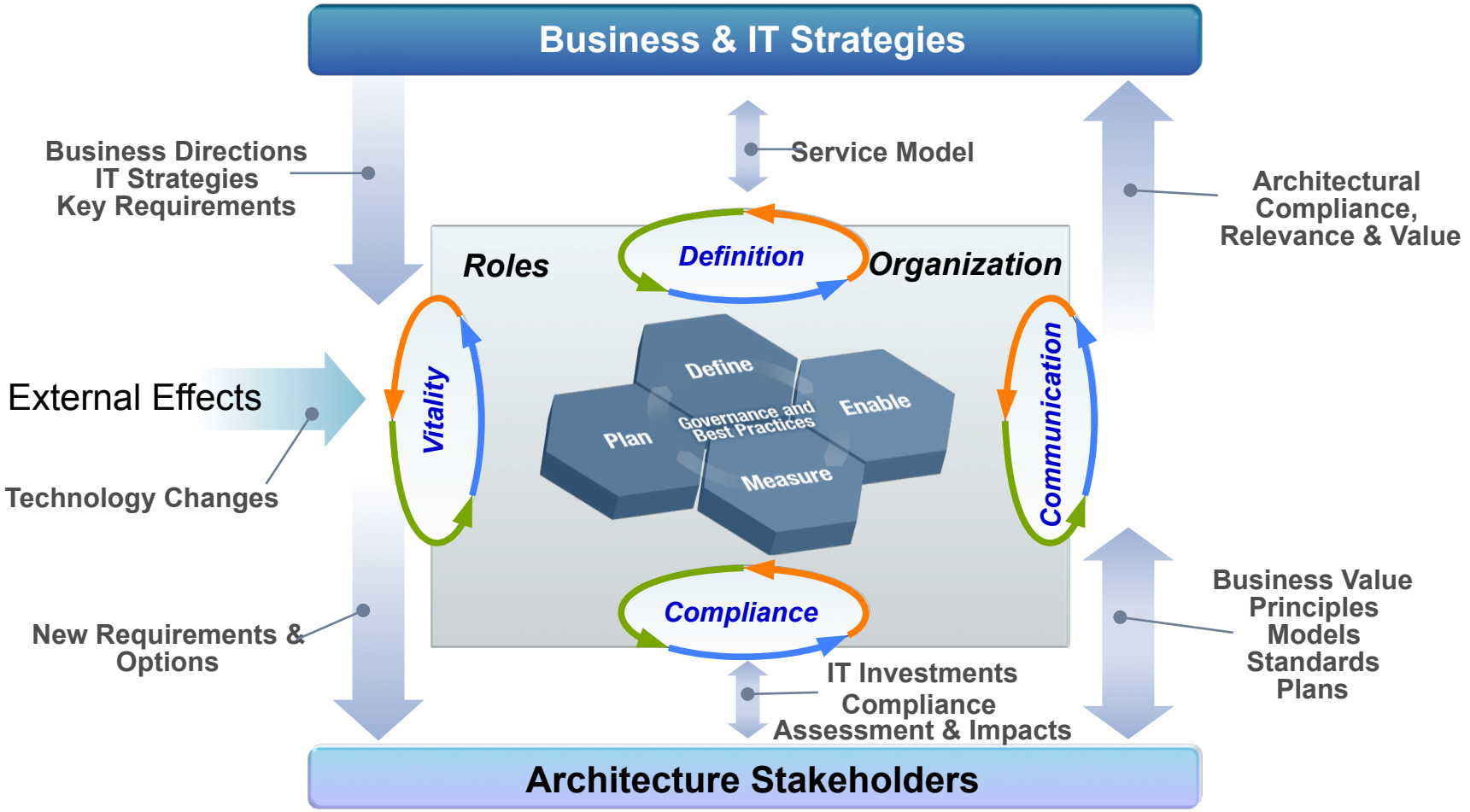
EA Governance Caveat – A balanced approach



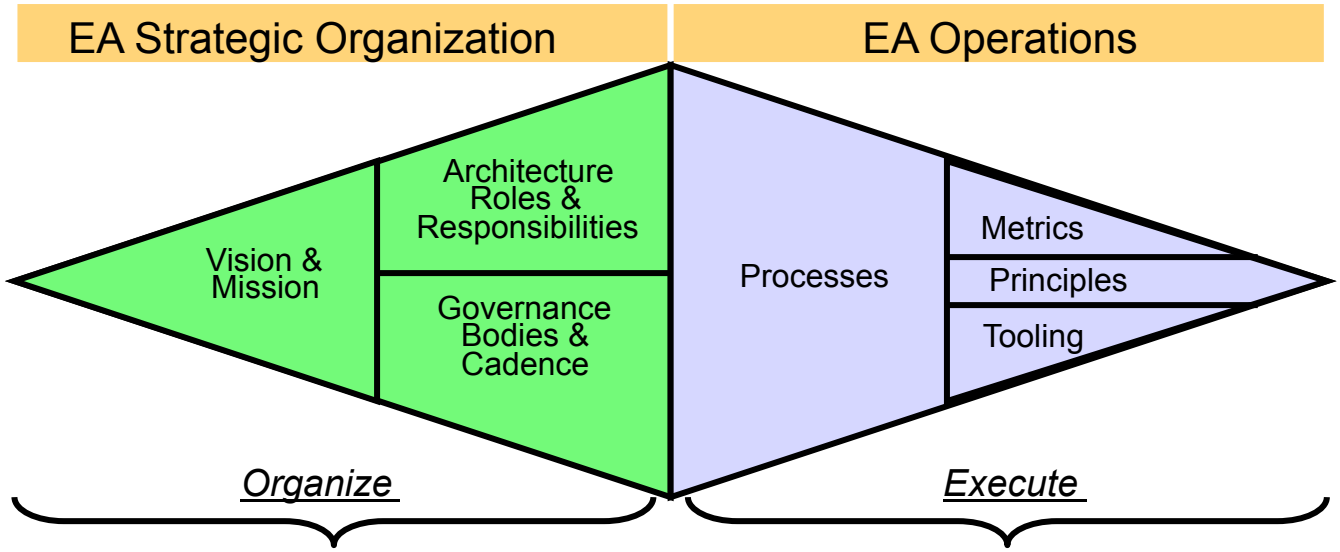
EA Governance affects many decision-makers



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



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?

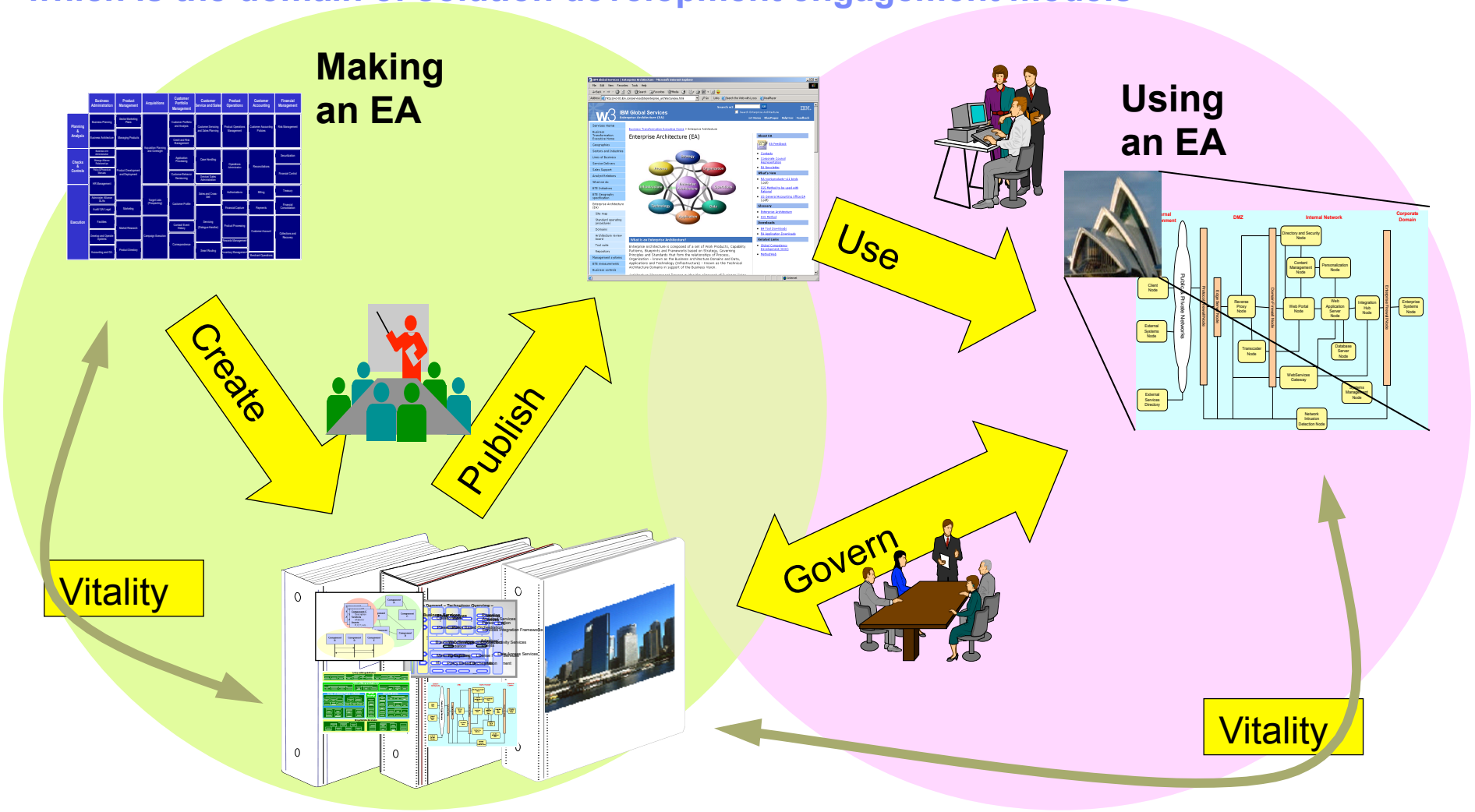
Processes
- What activities are governed?
- Who reviews and approves decisions, and how do escalations occur?

Metrics
- What types of metrics and measures are managed?

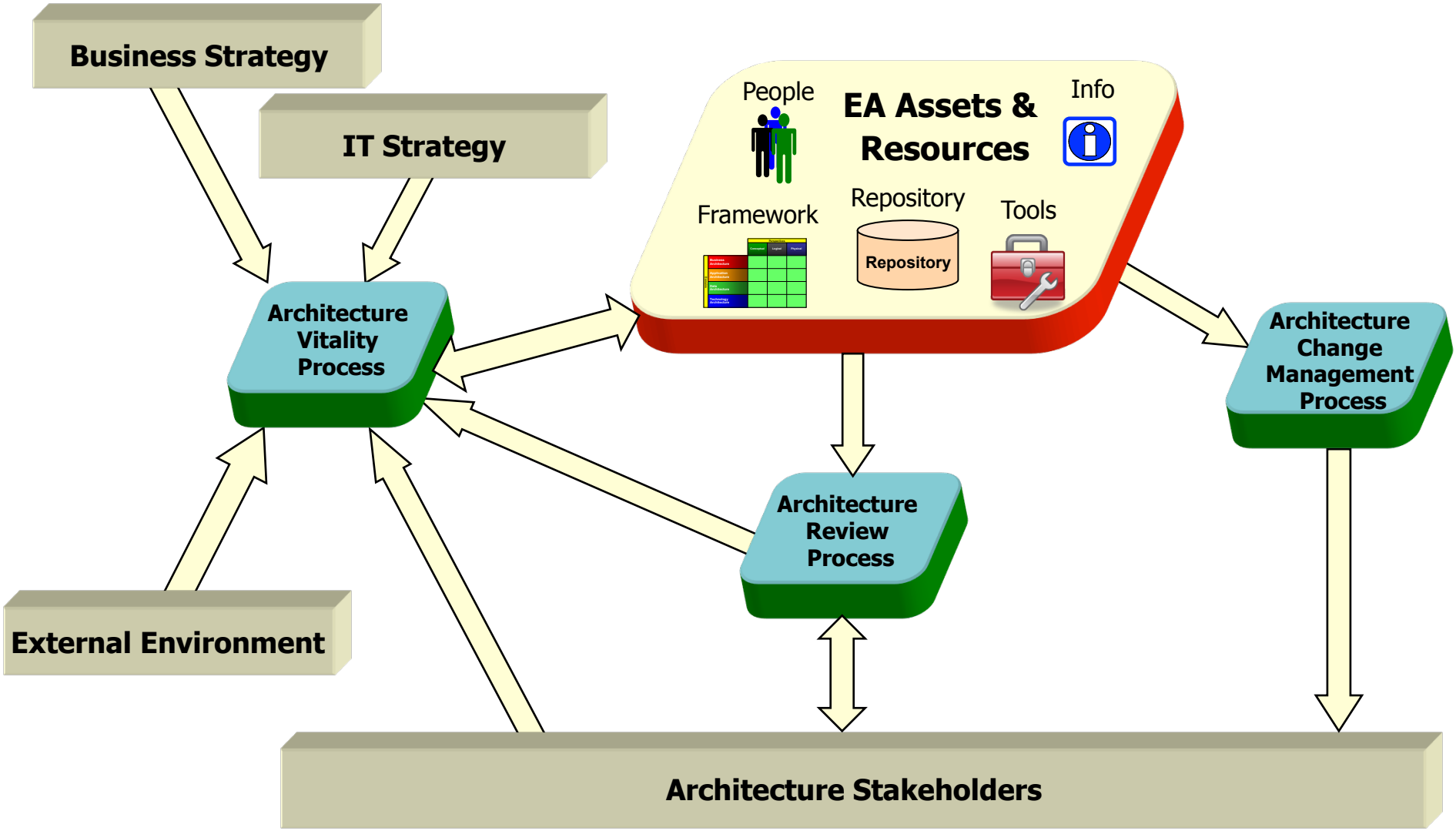
Principles
- What is the high level development guidance?

Tooling
- What tools will be utilized?

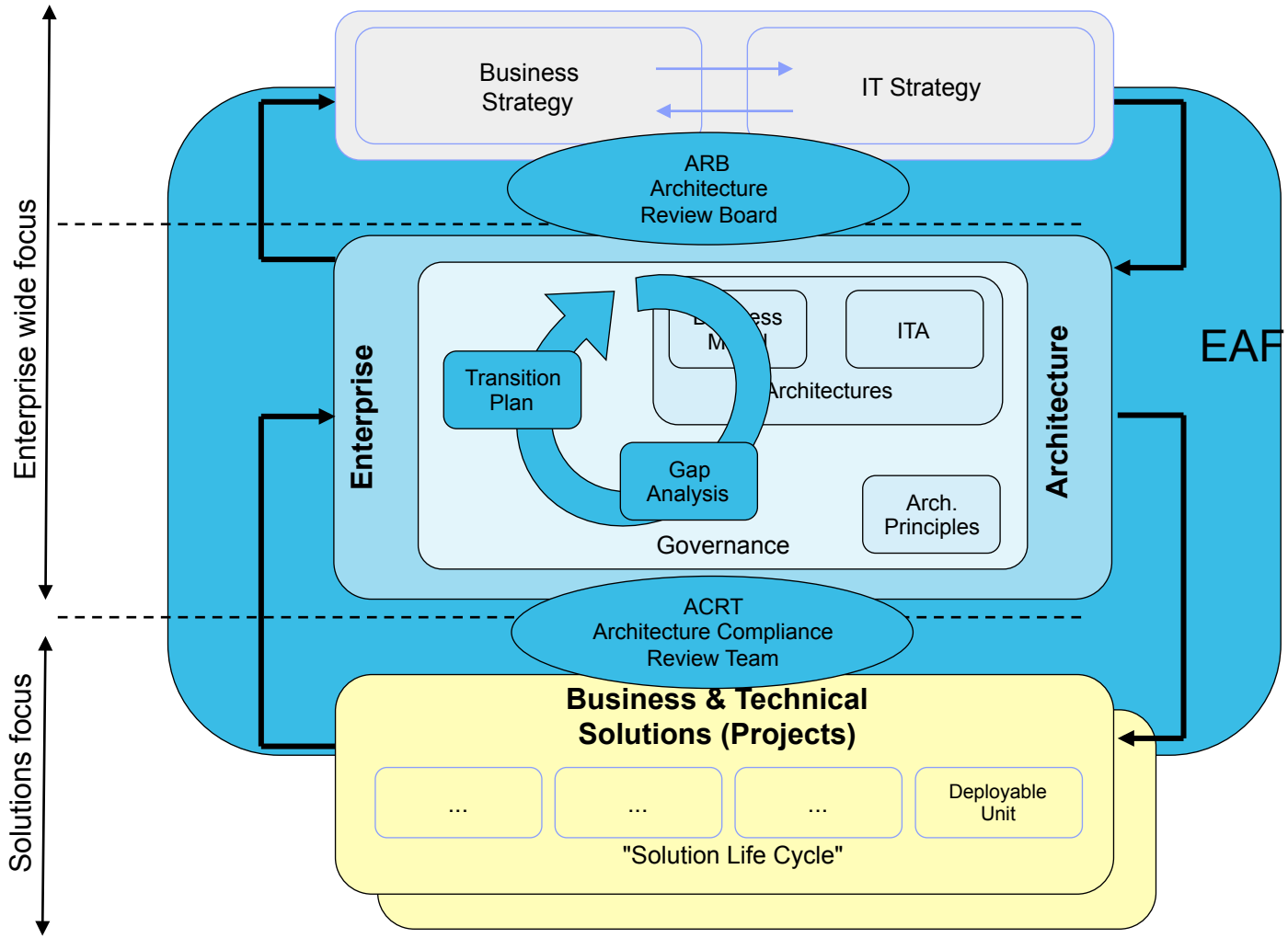
But whatever the purpose, the EA engagement is focused on the *creation* of the architectural and governance elements of an EA - it is not focused on their *use*, which is the domain of solution development engagement models



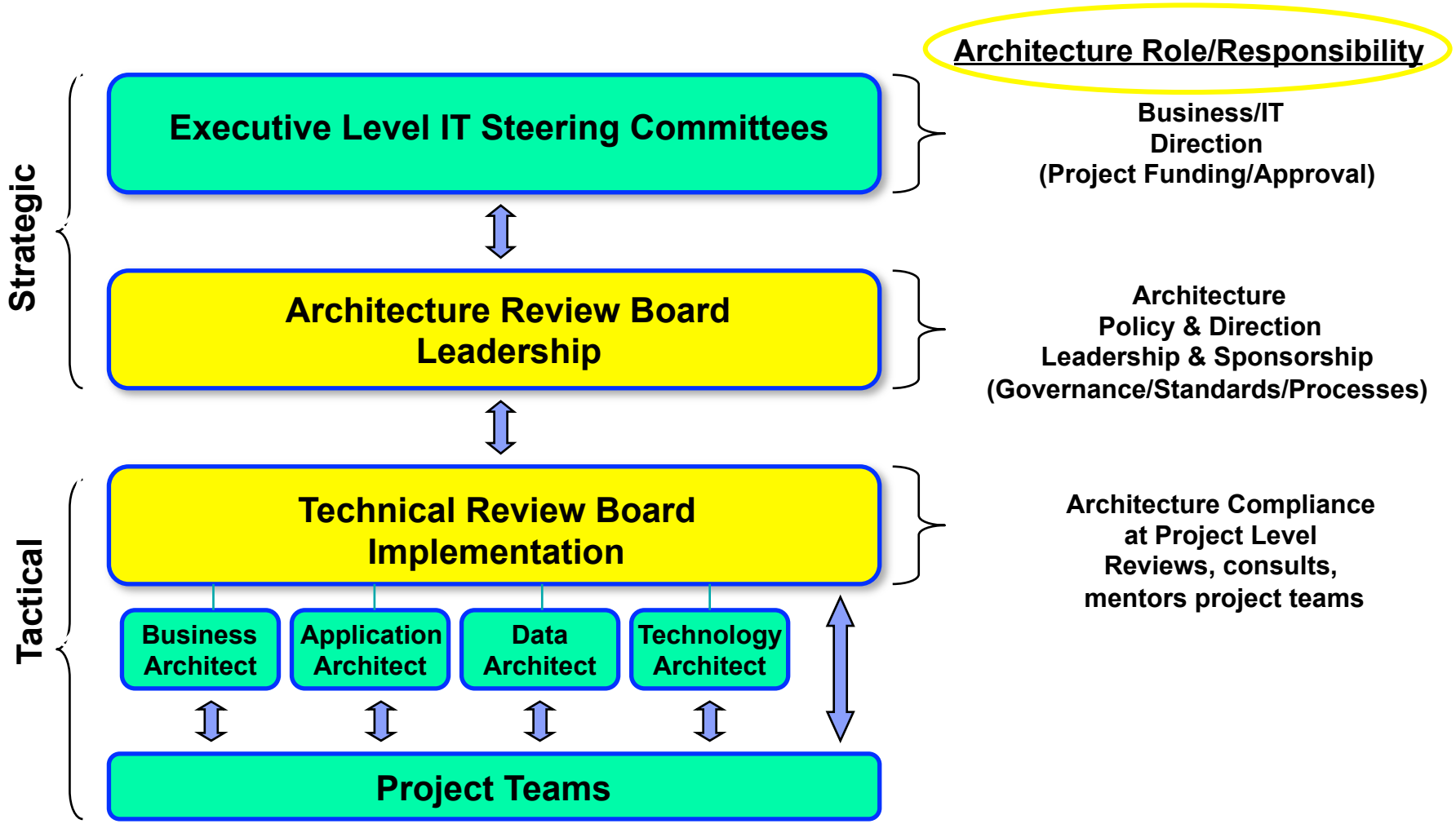
Key processes are for Architecture Review, Vitality, and Change Management



Committees for ensuring Enterprise Architecture



Roles and Responsibilities

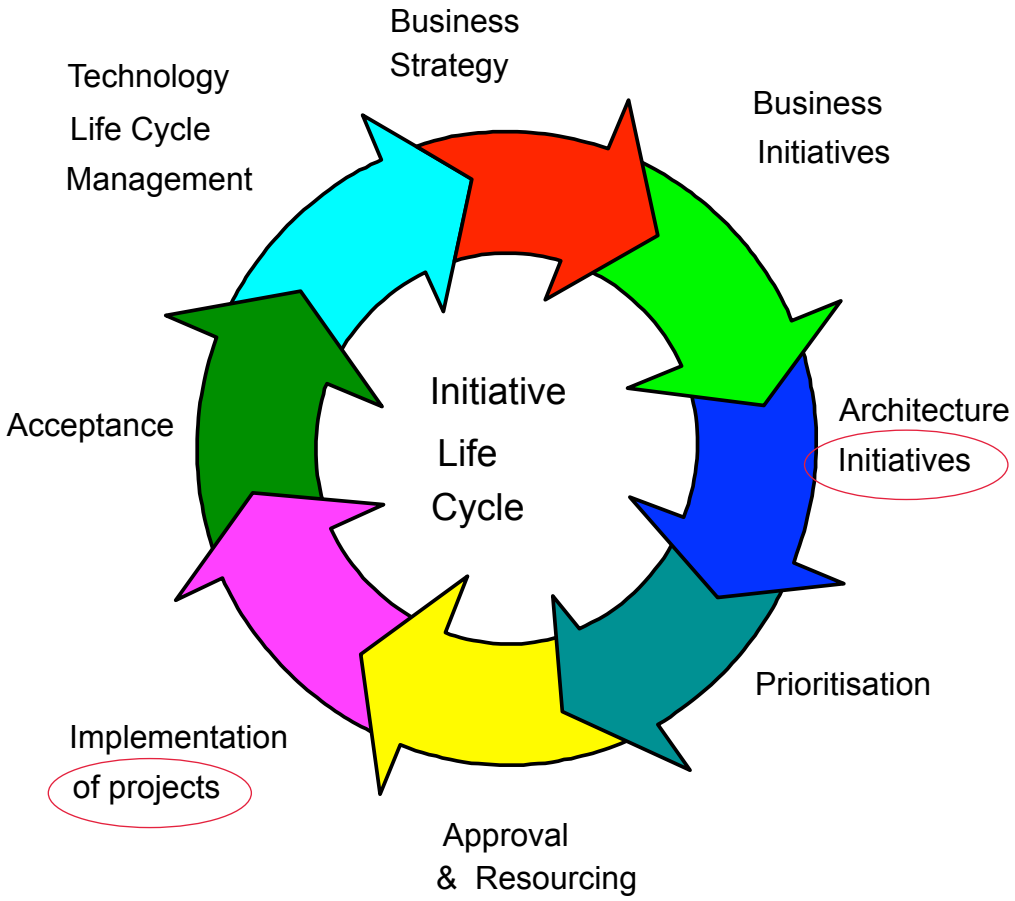


EA Governance – Overview of the boards/committees

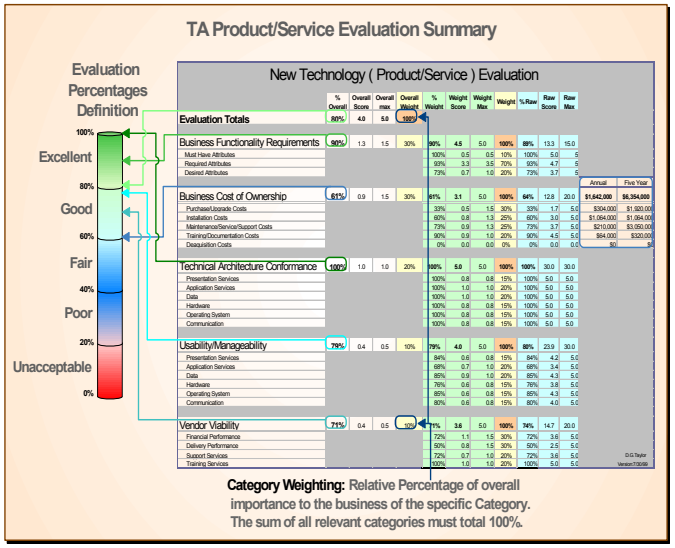
Executive Review Board	IT Steering Committee	Architecture Review Board	Architecture Compliance Review Team	Architecture Stakeholders
Executive Decision Making CEO President CFO CIO	• Identify Business Requirements • Ensure Business and IT are strategically aligned • Review and Approve IT Initiatives & 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

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

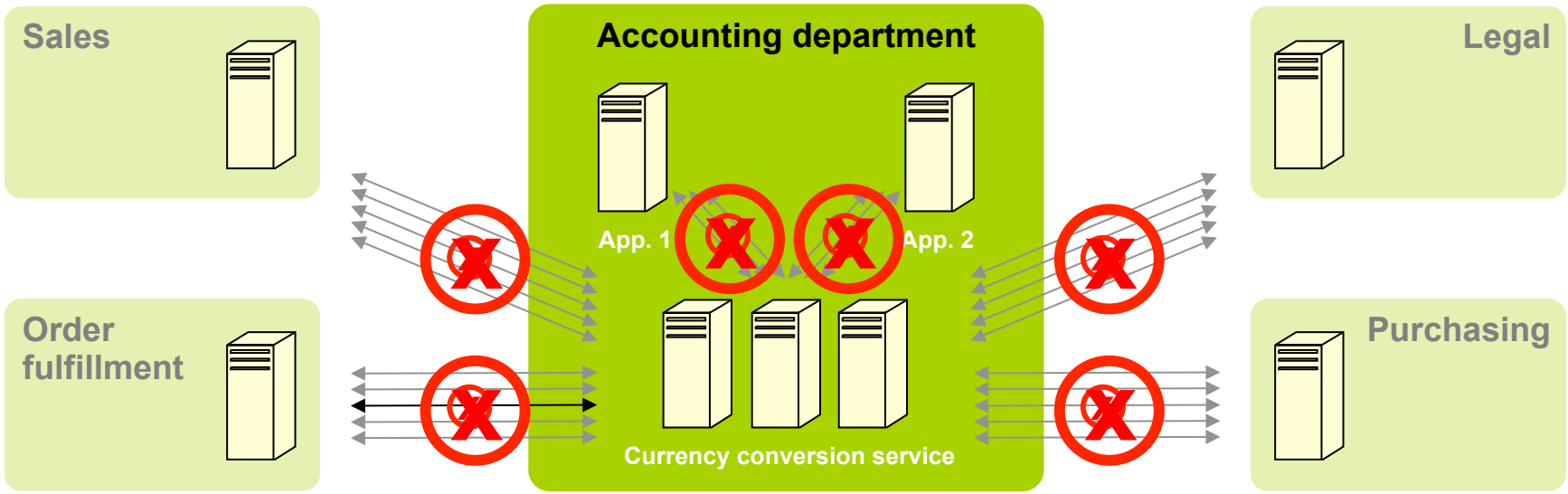
Building Block: Operating System

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 !

Importance by Illustrating Service Control

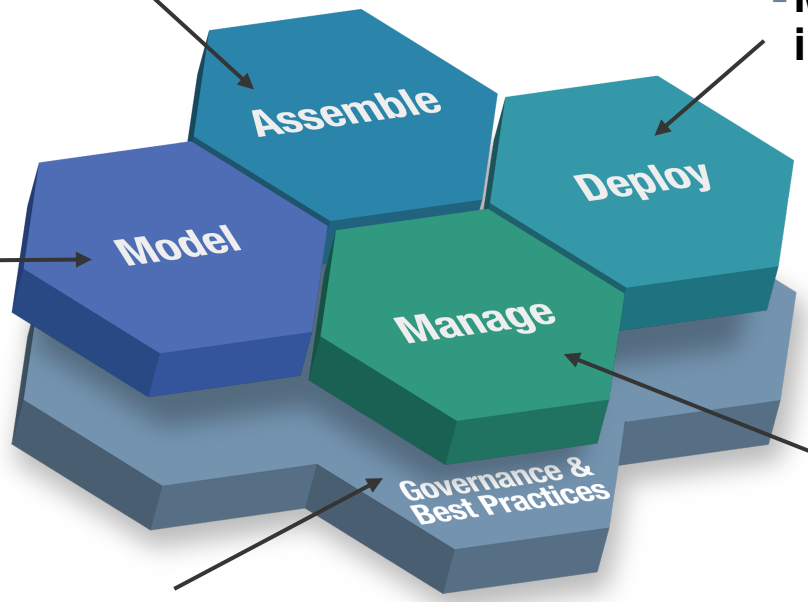


1. Provide a currency service that fills a specific line of business (LOB)
2. Other LOBs start using the service
3. LOBs increase use of services / quality suffers
4. Service is fixed at provider's expense
5. Fix works temporarily but problem reappears
6. Maintenance costs soar / provider ends service

Governance within the SOA Lifecycle

- Discover
- Construct & Test
- Compose

- Integrate people
- Integrate processes
- Manage and integrate information

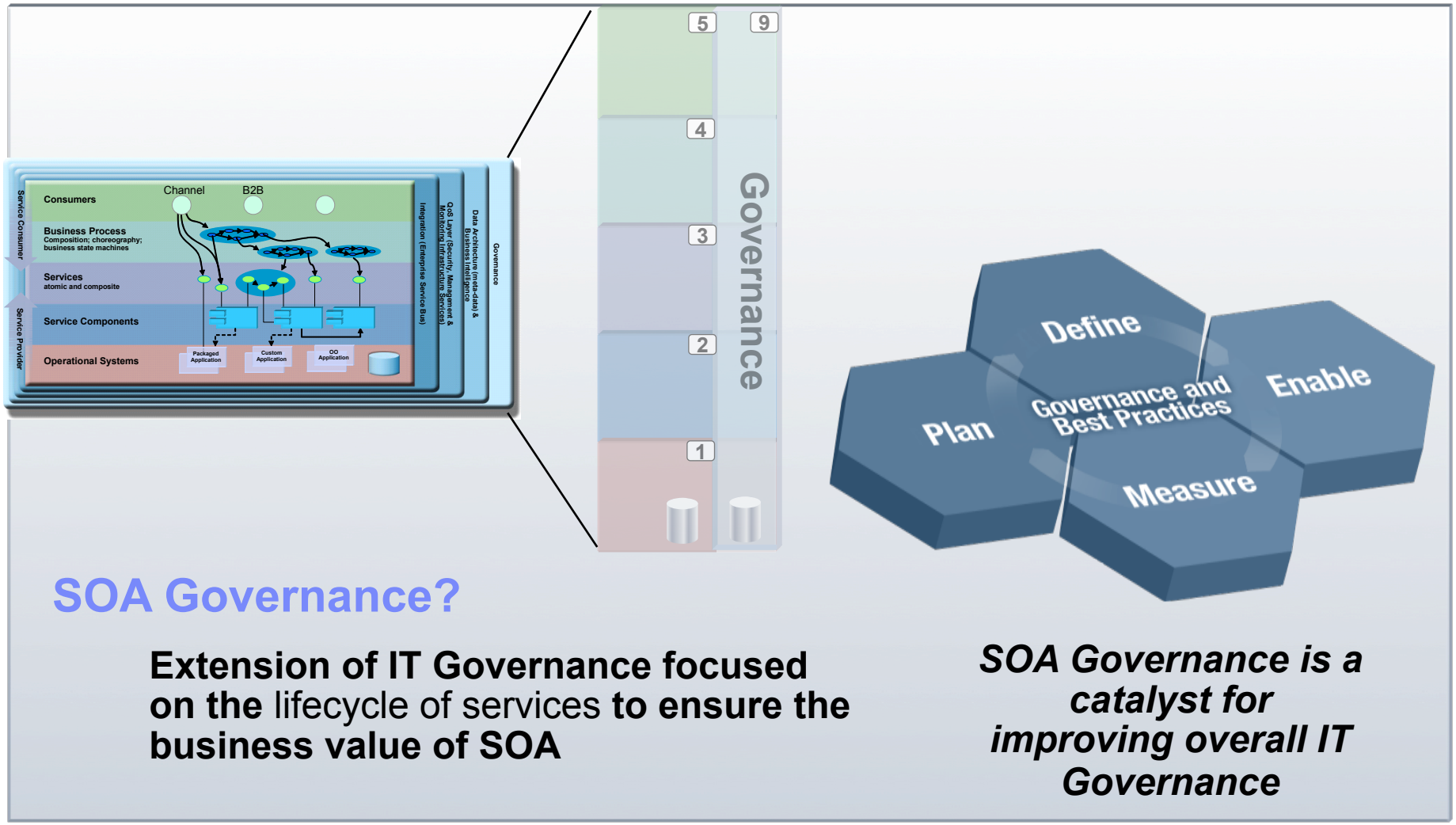


- Gather requirements
- Model & Simulate
- Design

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

- Financial transparency
- Business/IT alignment
- Process control

What is SOA Governance?

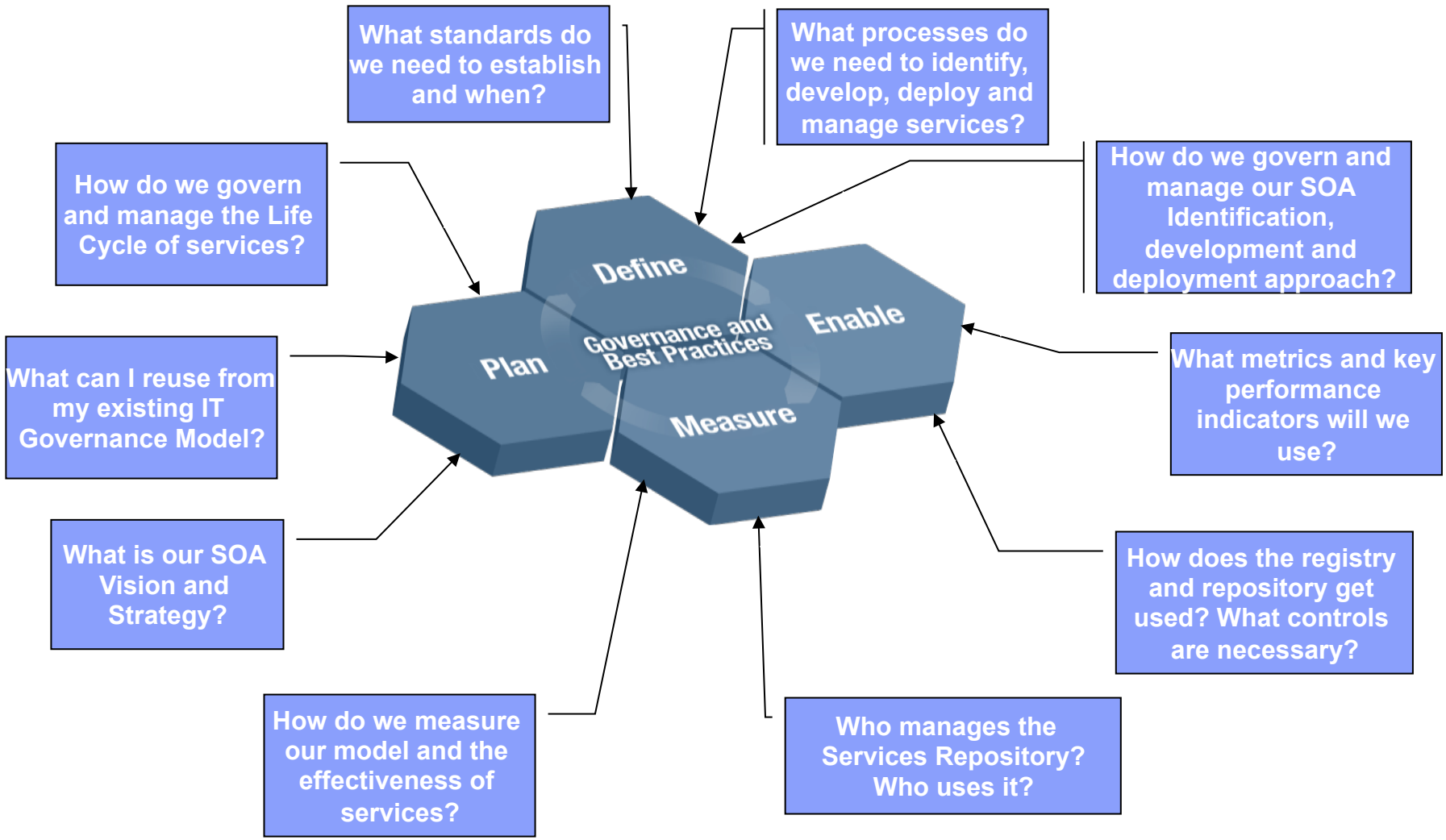


SOA Governance?

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



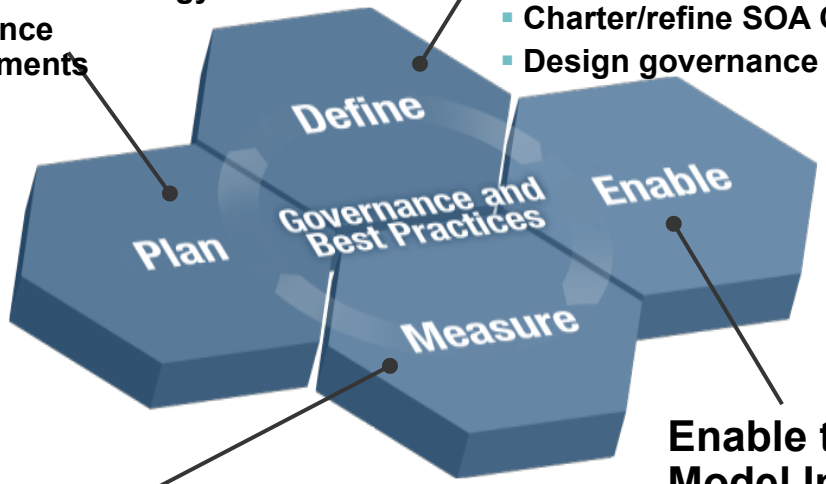
SOA Governance Lifecycle – How to establish?

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.

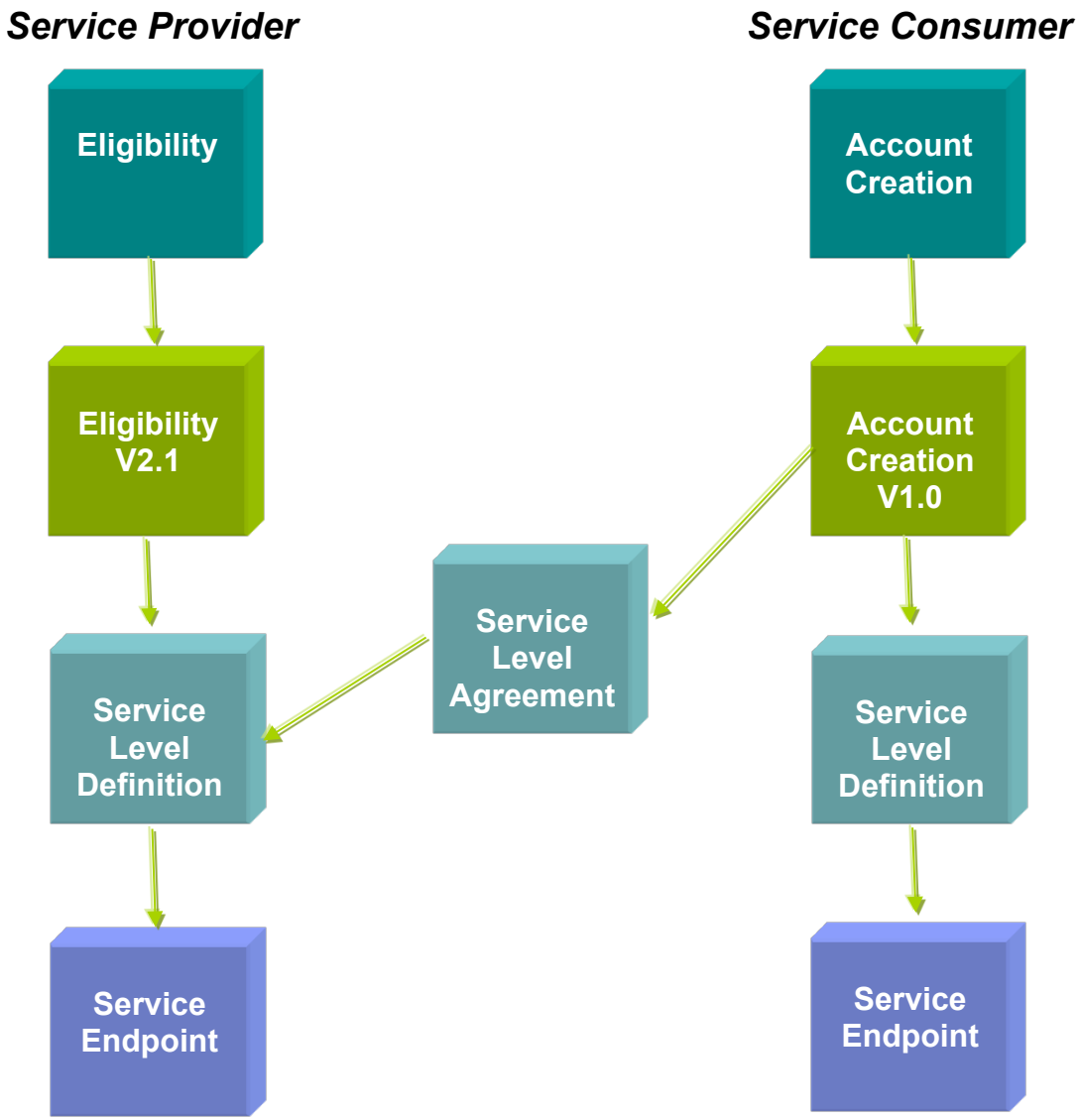
SOA Governance – solution portfolio level

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

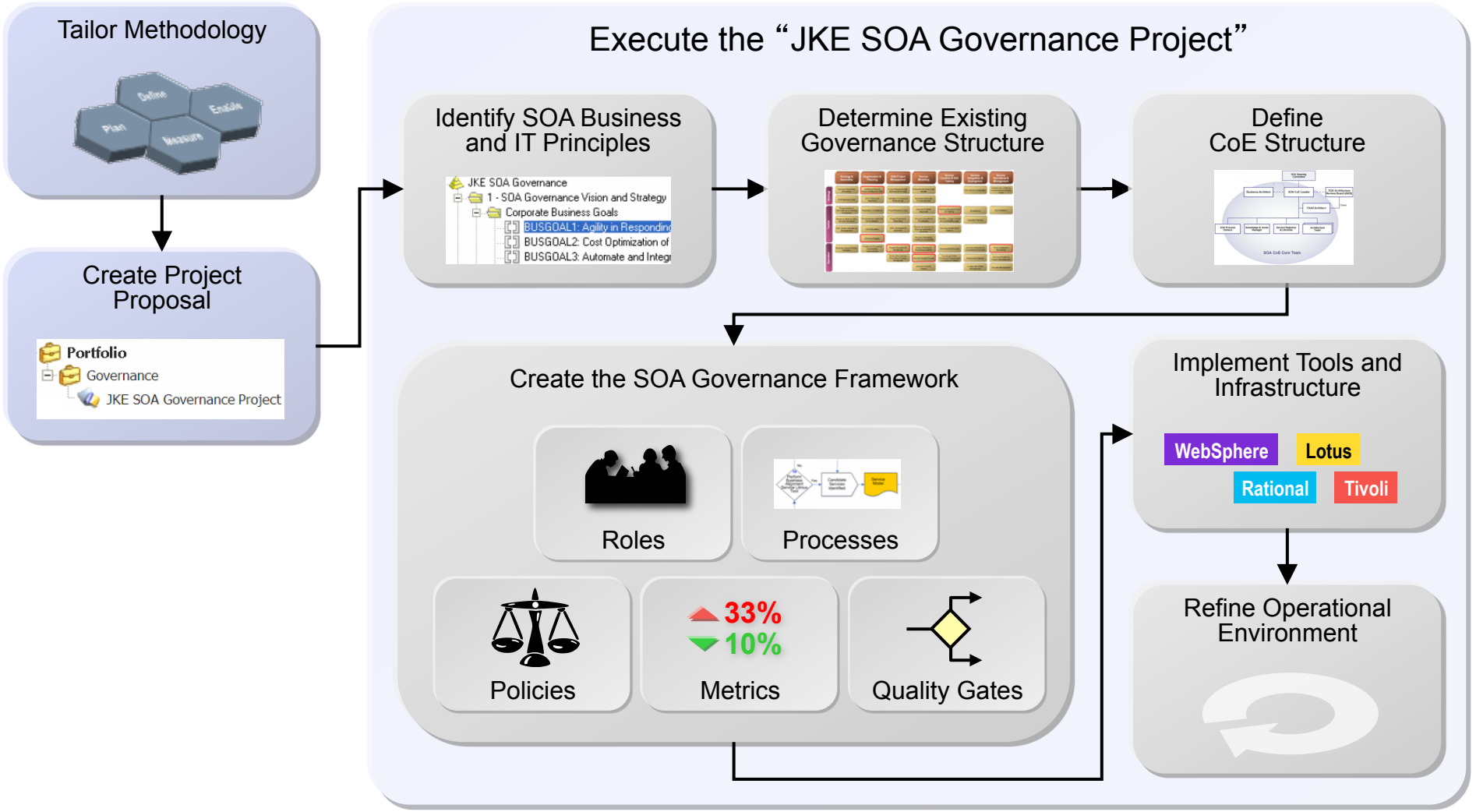
Service Governance – project service level

- **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

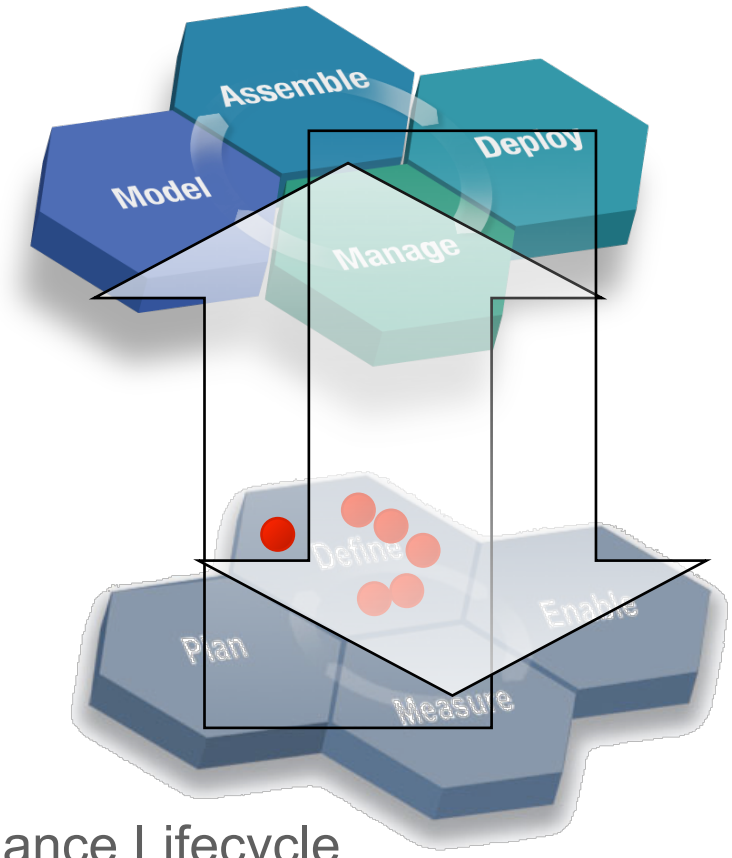


Example: Defining the Governance Solution



Interaction Between the Lifecycles

Service Lifecycle

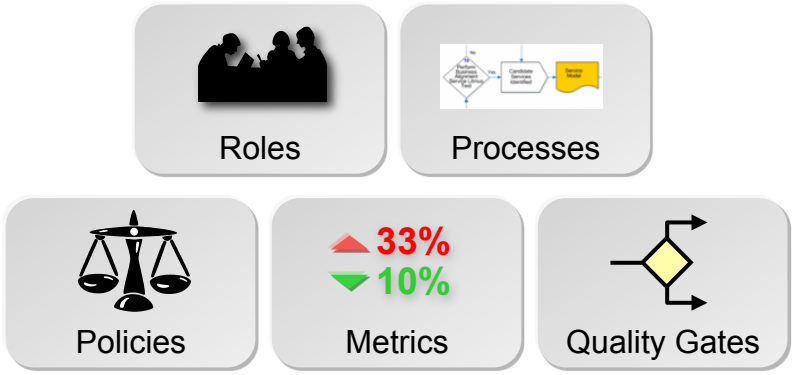


Governance Lifecycle

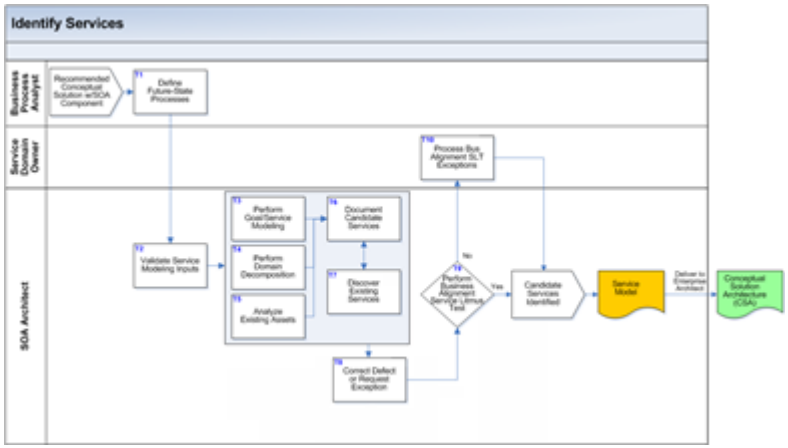
- Policies
  - quality gates
  - controls
  - metrics
  - standards
- are *defined* in the Governance lifecycle (for different aspects of Governance)…
- …and they are *enforced* in the service lifecycle
- metrics are captured to improve governance process

The Governance Framework (Extensions to Development Processes)

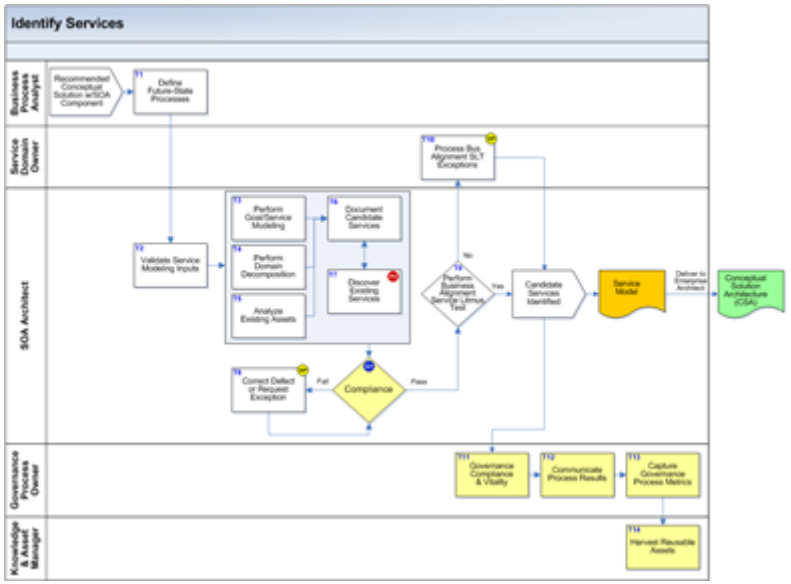
- **All the "elements" that we need to add to make a process well-governed**



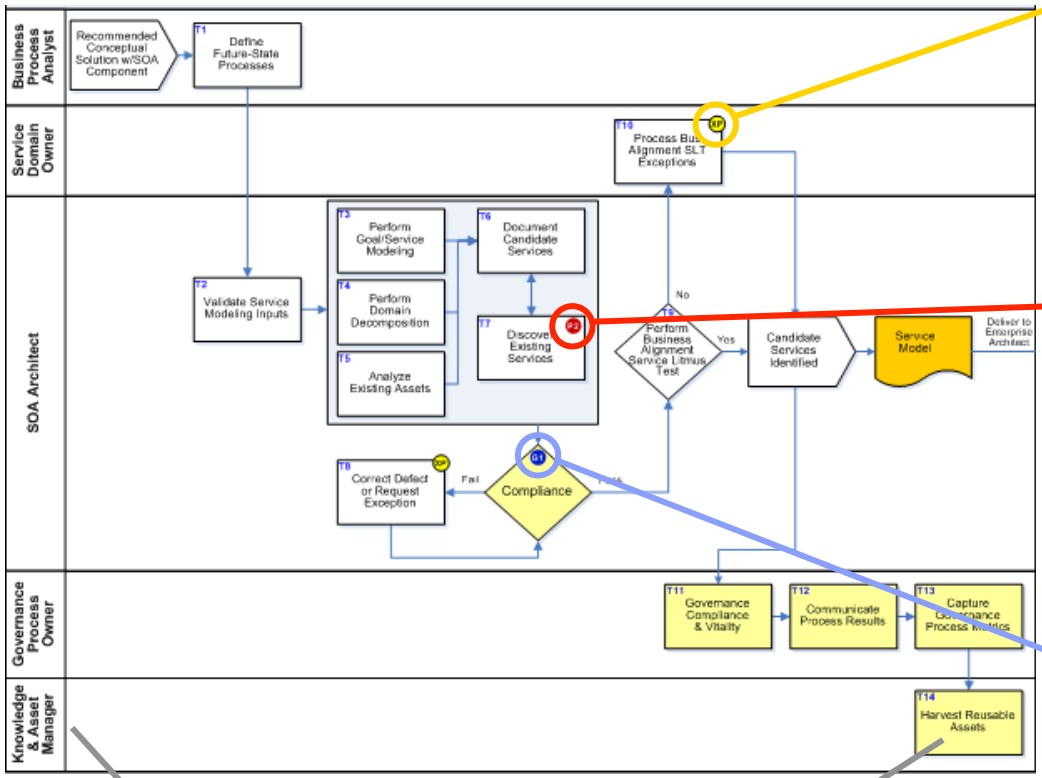
non-governed process



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

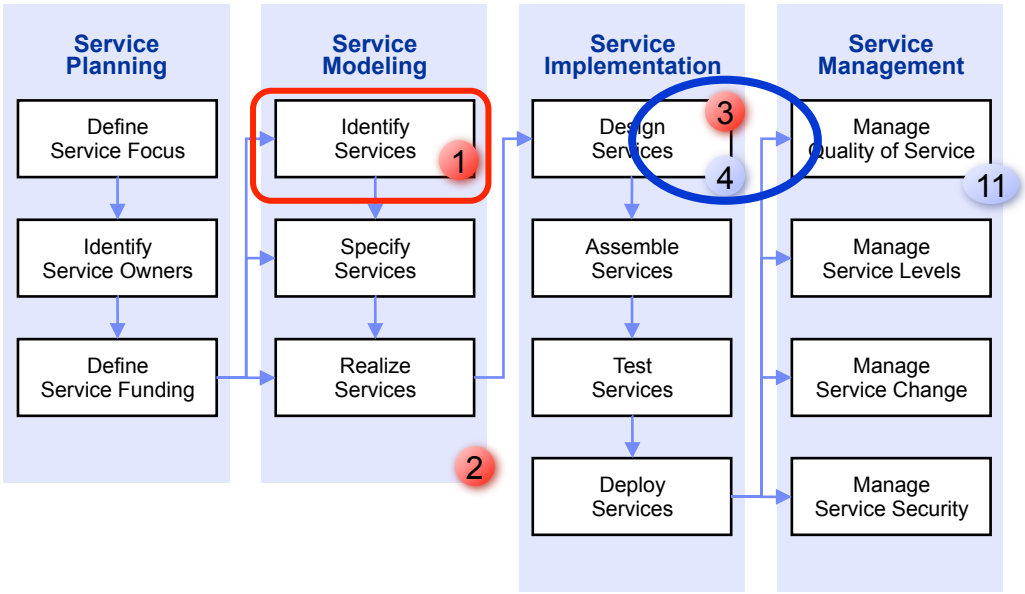
review

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

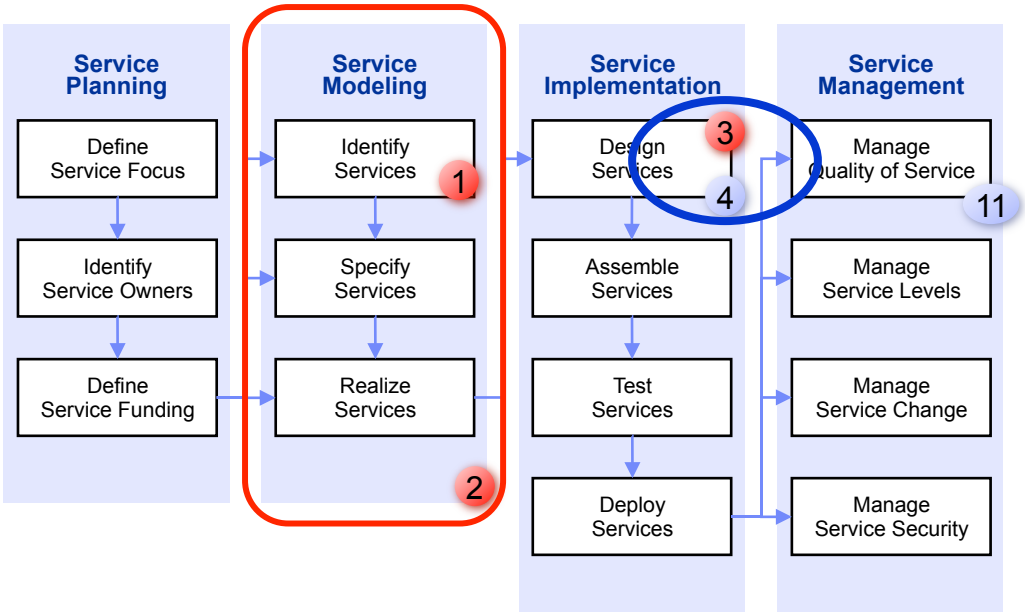


Policy 1 Services should be reused instead of created whenever possible

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



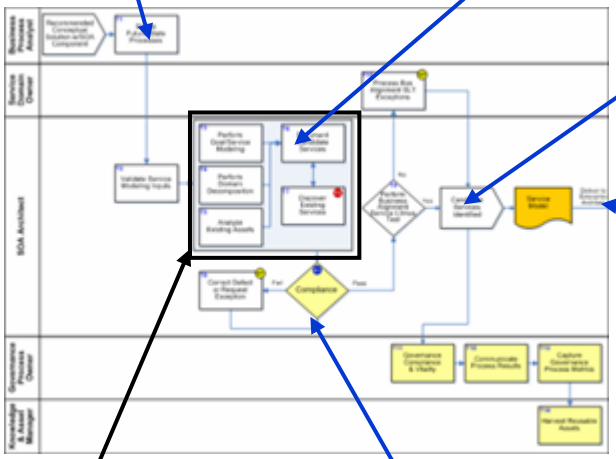
Policy 2 Services must be compliant with the existing reference architecture

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



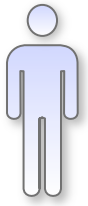
2 Validate Service Ownership

3 Registry Lookup to enforce reuse of existing services

5 Publish Service to repository after Litmus test is successful

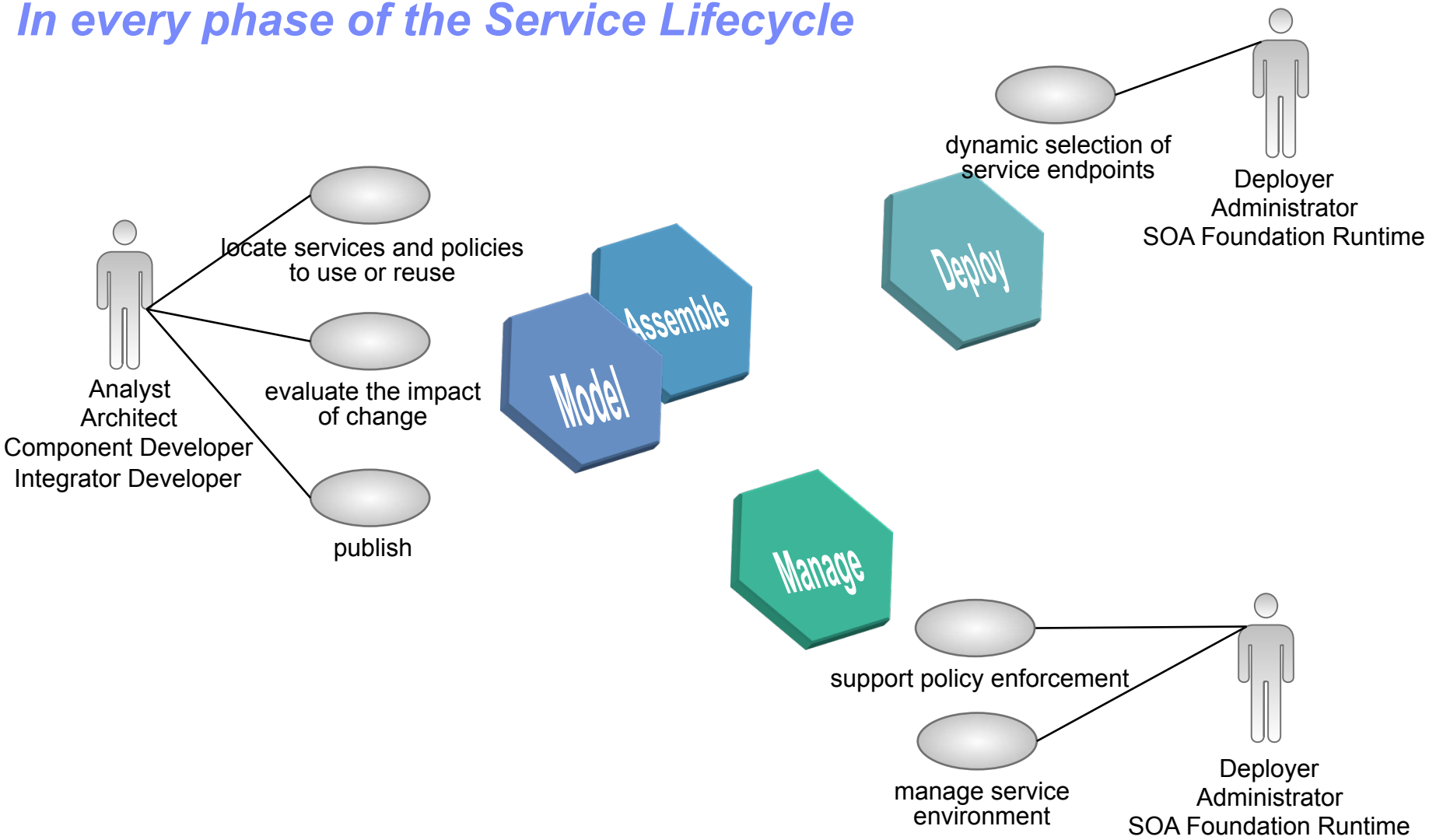
6 Add a Policy for Dynamic Binding

Service Analysis and Design

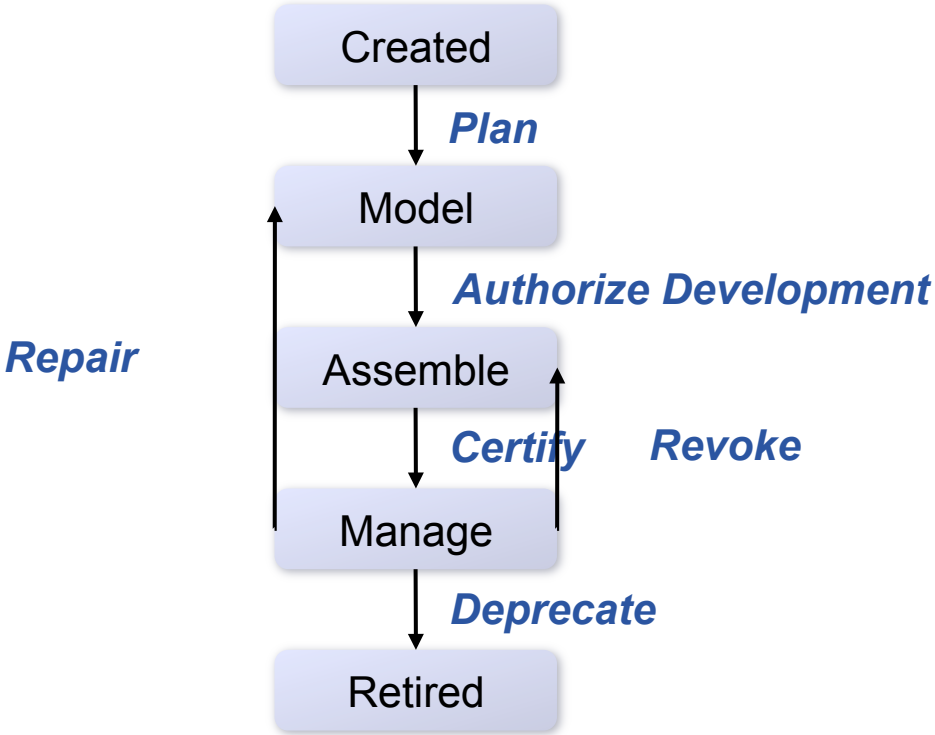


4 Validate Service Design for Standards Compliance

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