Advancing the Business/IT linkage with SOA Governance and Service Lifecycle Management

May 2007

Governance is critical to overall SOA Success

NEW! **Technical Changes**

NEW! **Cultural Changes**

Key Enabling Tools
Enhanced WebSphere Registry & Repository
New Rational Asset Manager

Fostering a culture of reuse
SOA Governance and Mgmt Method
GBS SOA Services

What's new in SOA Governance and Service Lifecycle Management to support Business and IT alignment

Agenda

- SOA Governance and Management Method

- SOA Center of Excellence and Services

- SOA Governance Registry and Repository Strategy

- Service and Asset Management
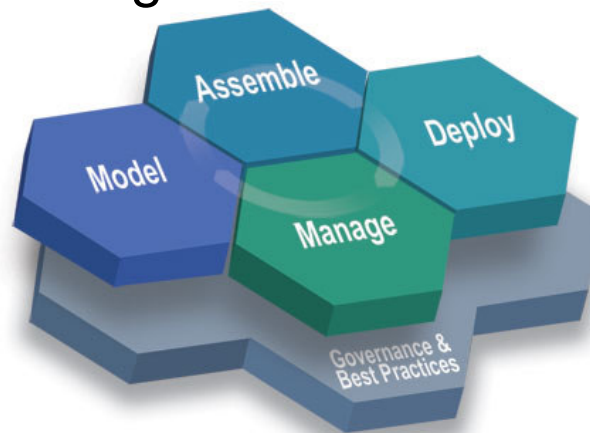
SOA Governance Lifecycle drives business/IT alignment at the beginning of SOA deployment

Scope 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
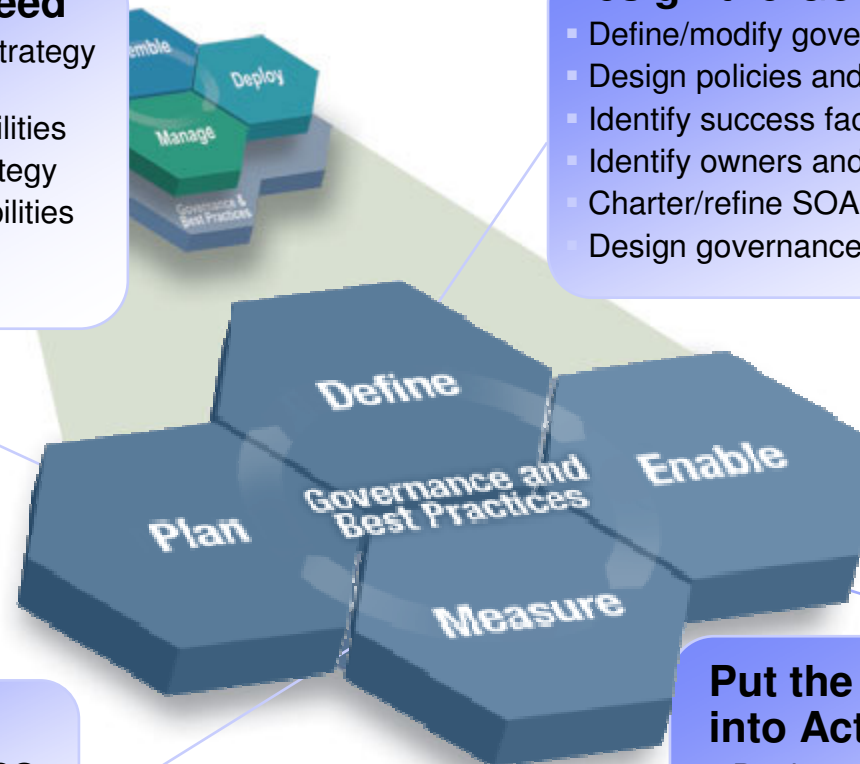- Layout governance plan

Design 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

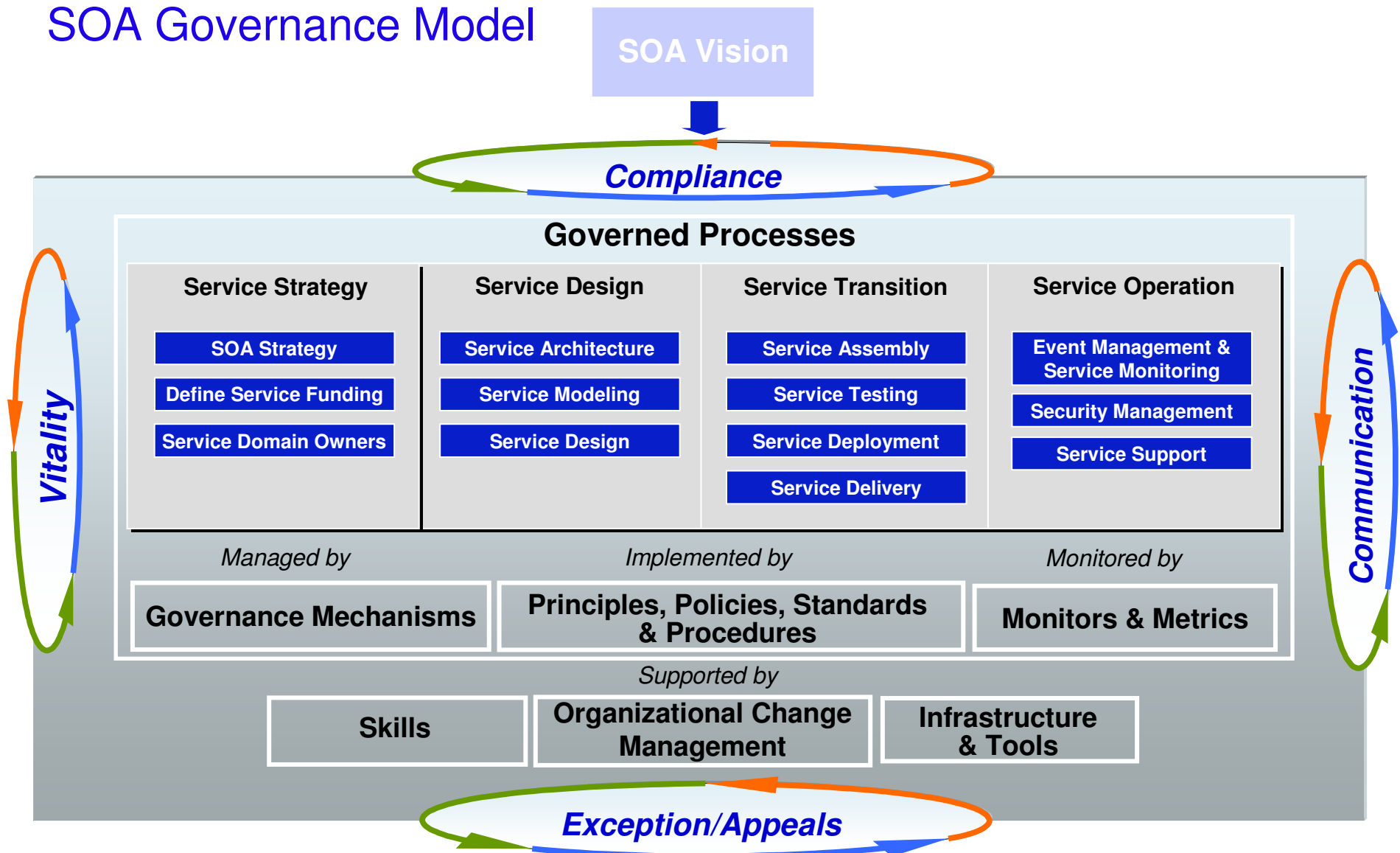**Manage & Monitor the Governance Processes**
- Monitor compliance with policies
- Monitor compliance with governance arrangements
- Monitor IT effectiveness metrics

Put the Governance Model into Action
- Deploy governance mechanisms
- Deploy governance IT infrastructure
- Educate and deploy on expected behaviors and practices
- Deploy policies

SOA Governance Model

SOA Vision

Compliance

Vitality

Communication

Governed Processes

Service Strategy	Service Design	Service Transition	Service Operation
SOA Strategy	**Service Architecture**	**Service Assembly**	**Event Management & Service Monitoring**
Define Service Funding	**Service Modeling**	**Service Testing**	**Security Management**
Service Domain Owners	**Service Design**	**Service Deployment**	**Service Support**
		Service Delivery	

Managed by   *Implemented by*   *Monitored by*

Governance Mechanisms	**Principles, Policies, Standards & Procedures**	**Monitors & Metrics**

Supported by

Skills	**Organizational Change Management**	**Infrastructure & Tools**

Exception/Appeals
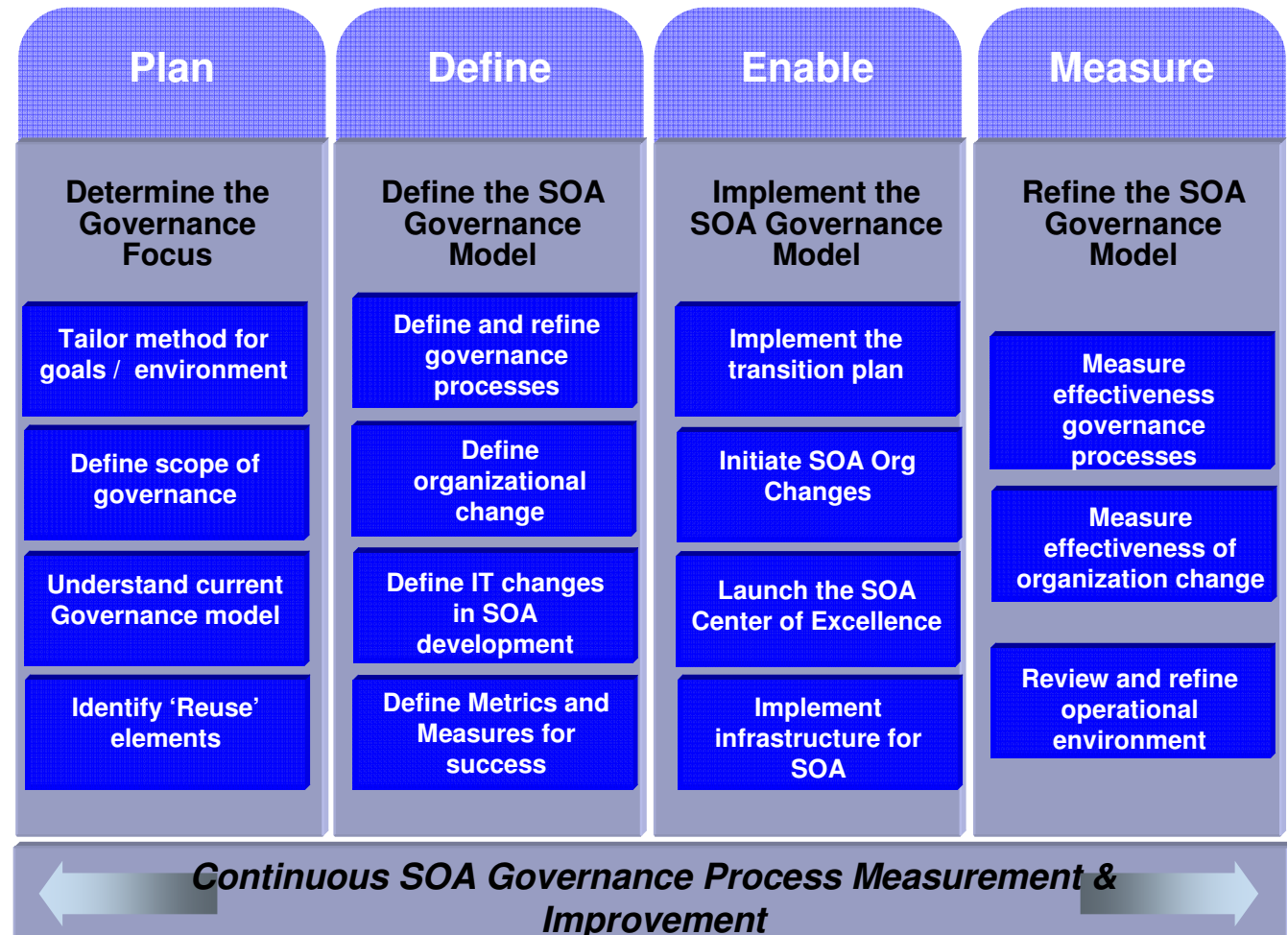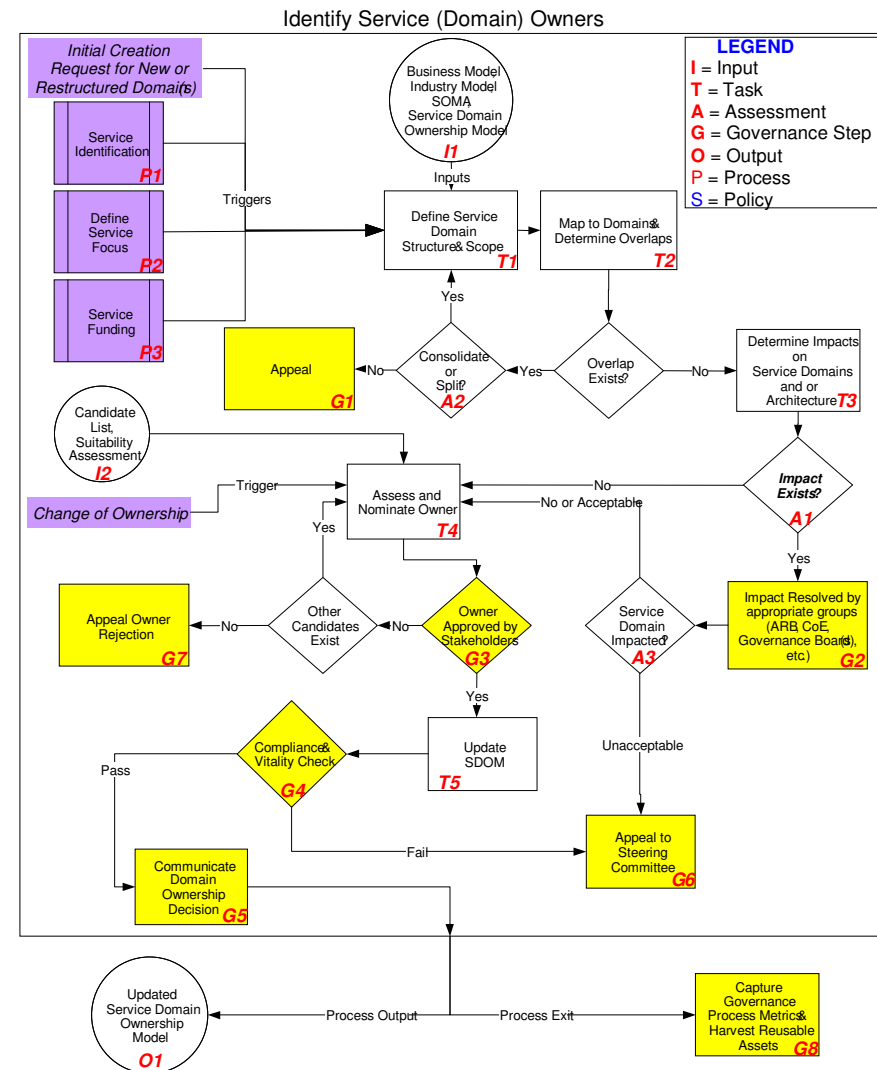
SOA Governance and Management Method aligns business and IT strategy for successful SOA implementation

- Customer tested SOA Governance Method

- Leverages existing governance model

- Detailed governance process guidance

- Comprehensive framework and processes span lifecycle of SOA governance

- Methodology to help clients establish SOA Centers of Excellence

Plan	Define	Enable	Measure
Determine the Governance Focus	**Define the SOA Governance Model**	**Implement the SOA Governance Model**	**Refine the SOA Governance Model**
Tailor method for goals / environment	Define and refine governance processes	Implement the transition plan	Measure effectiveness governance processes
Define scope of governance	Define organizational change	Initiate SOA Org Changes	Measure effectiveness of organization change
Understand current Governance model	Define IT changes in SOA development	Launch the SOA Center of Excellence	Review and refine operational environment
Identify 'Reuse' elements	Define Metrics and Measures for success	Implement infrastructure for SOA	

*Continuous SOA Governance Process Measurement & Improvement*

Service Domain Ownership Model helps business and IT cooperation

- Service Ownership is one of the most important yet difficult processes to implement for SOA.

- The Domain Ownership Model *should* align with the businesses structure but Political and Cultural issues increases the difficulty to adopt and implement.

- Commitment throughout the organization but especially at higher levels in the organization will make this less difficult.

- This process will make possible a number of SOA benefits and drive the adoption of other processes like the Funding Process which is closely linked to Domain Ownership

Identify Service (Domain) Owners

LEGEND
I = Input
T = Task
A = Assessment
G = Governance Step
O = Output
P = Process
S = Policy

Incentive to align is driven by the Define Service Funding Model

- Important yet difficult processes to implement for SOA.

- Drives a number of SOA benefits and make SOA adoption possible.

- Diagram addresses service funding definition and the governance of a defined model, but not the funding model.

  - Funding Model should address funding of initial projects but more importantly day to day funding of services, their use, maintenance, development and versioning.
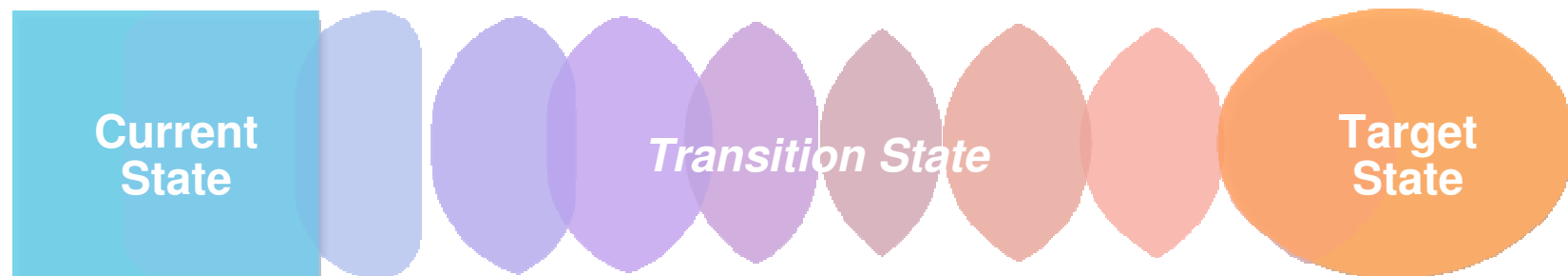
Define Service Funding

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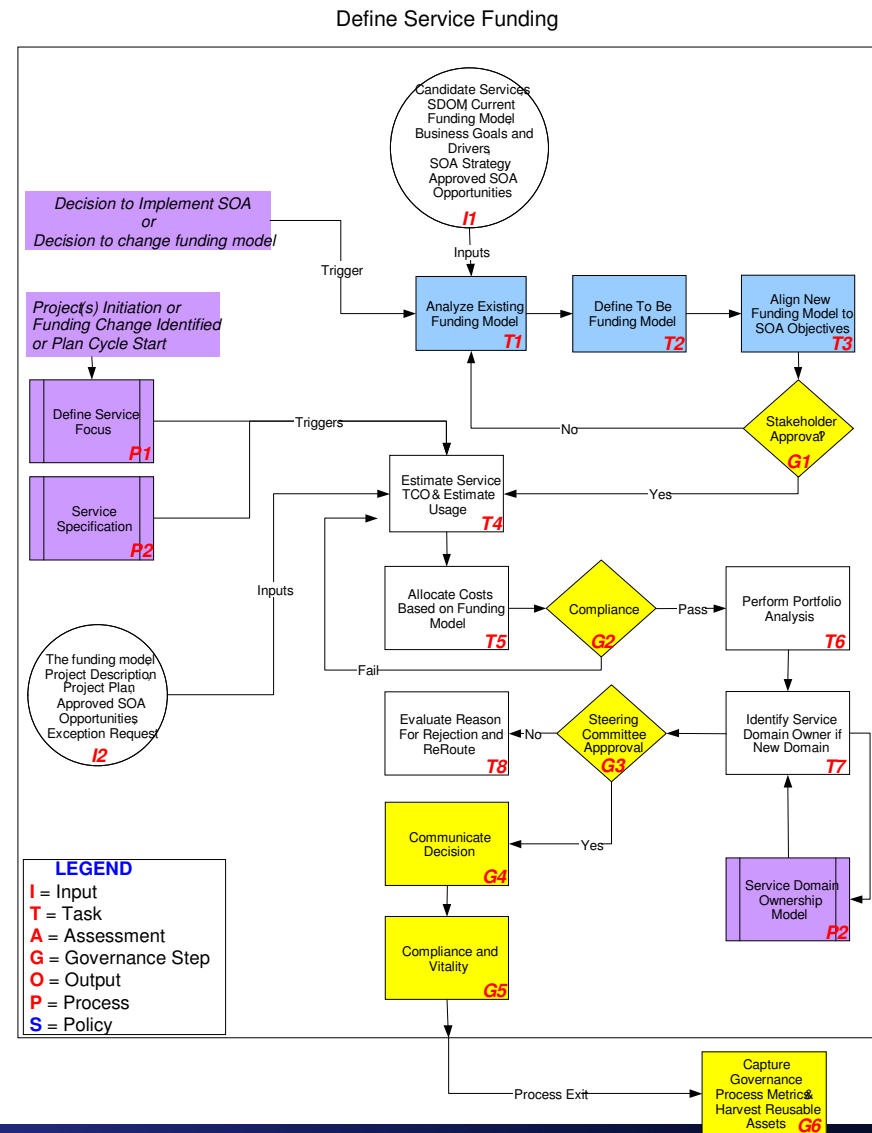
SOA Governance and Management Method vision of success includes the Organizational Change and Change Management

"Help ensure that people impacted by the changes….

- **Understand**
- **Accept**
- **Are Prepared for, and**
- **Are Committed to**

the changes that will affect them."

The Change Management Pattern will:

- Mitigate risks with appropriate oversight & control
- Increase reuse & buy-in promoting the use of Services
- Speed Adoption of the Governance model enabling a successful implementation
- Facilitate the achievement of program benefits

Current State

Transition State

Target State

A Governing Body is needed to manage shared services across the business/IT organization

Manage the Service Lifecycle

Measure and Track KPIs

Provide Skills Transfer & Early Proof of Concepts

Provide Architecture Vitality & Thought Leadership

Governing Body

Provide Architectural Authority

Conduct Architecture Reviews and Workshops

Establish Decision Rights

Define High Value Business Services
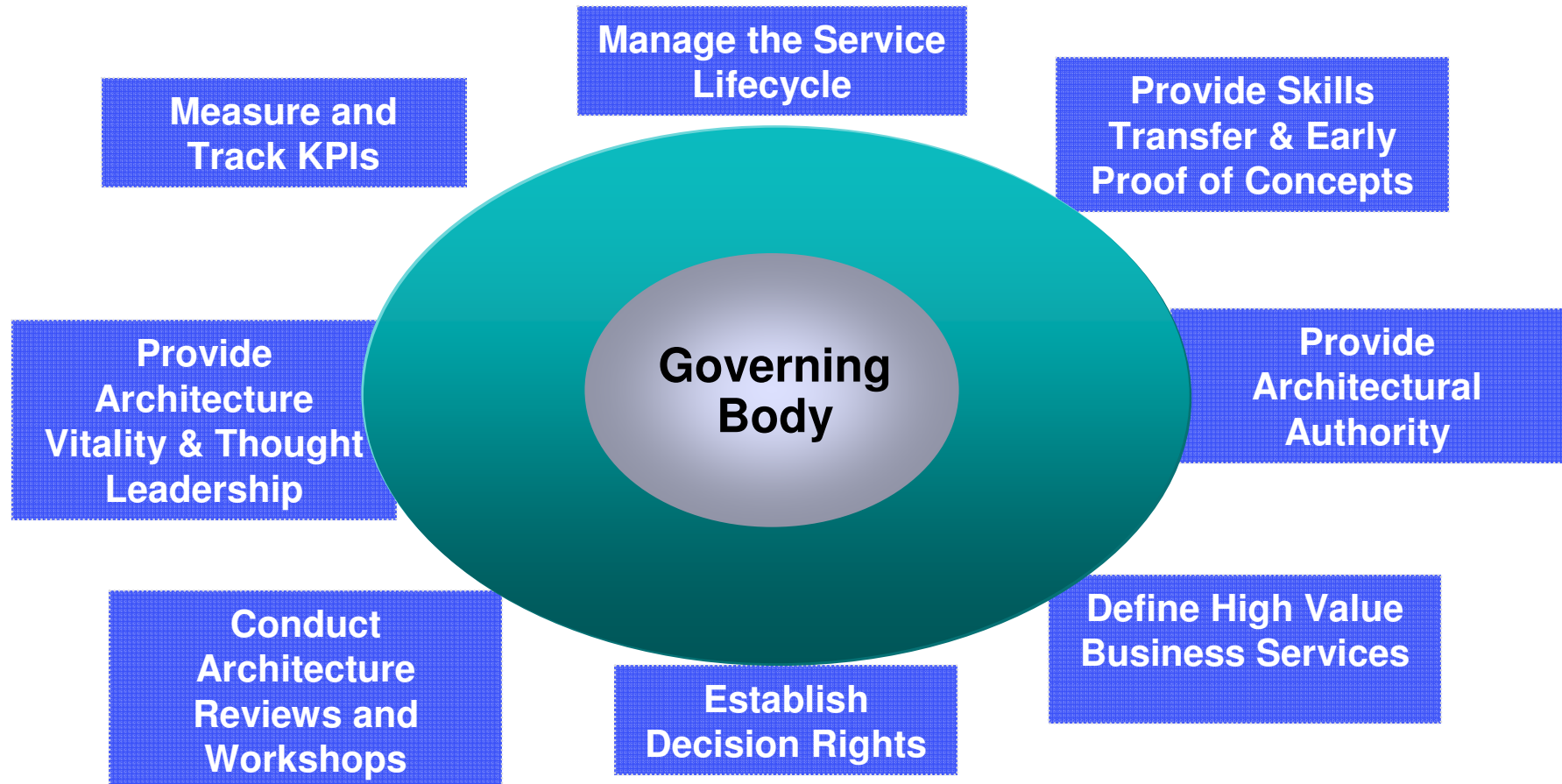
Center of Excellence (CoE) can improve the opportunity for SOA implementation success

Governance Method supplies templates to create CoE

Delivery:
Enables successful delivery of your business strategy with establishment of technical resources.

Knowledge:
A CoE serves to supply the expertise to the organization for SOA implementation and execution

Customization:
Assist in customization of SOA Governance Method to meet unique requirements

Capabilities:
- SOA Architecture Workshop
- SOA Architecture Design and Customization
- SOA Architecture Review
- Software environment installation and configuration
- Education and Skills Transfer

Center of Excellence

Define

Measure

IBM offers 6 key service offerings to assist in SOA implementations. All supported by SOA Governance

SOA Governance

SOA Strategy	▪ Helps a C-level exec layout a complete SOA Strategy, Architecture and Roadmap to transformation organization and systems towards a service oriented model.
SOA Diagnostic	▪ For clients that have already started their SOA transformation but want IBM to evaluation how they are doing and make improvement recommendations.
Business Process Management Enabled by SOA	▪ It is a discipline that enables effective management of core business processes across an organization.
SOA Implementation Planning	▪ Helps a Line of Business or Application Group define future business process, the high impact services and the corresponding solution architecture
SOA Design, Development, and Integration Services	▪ The core implementation of an SOA solution. It is designed to be a follow-on from an early BPM or SOA planning phase.
SOA Management	▪ Helps an organization ensure that the required processes, controls, responsibilities and activities are deployed to successfully manage SOA solutions

Getting started with SOA Governance is faster and easier with SOA Governance Method, a CoE and Services

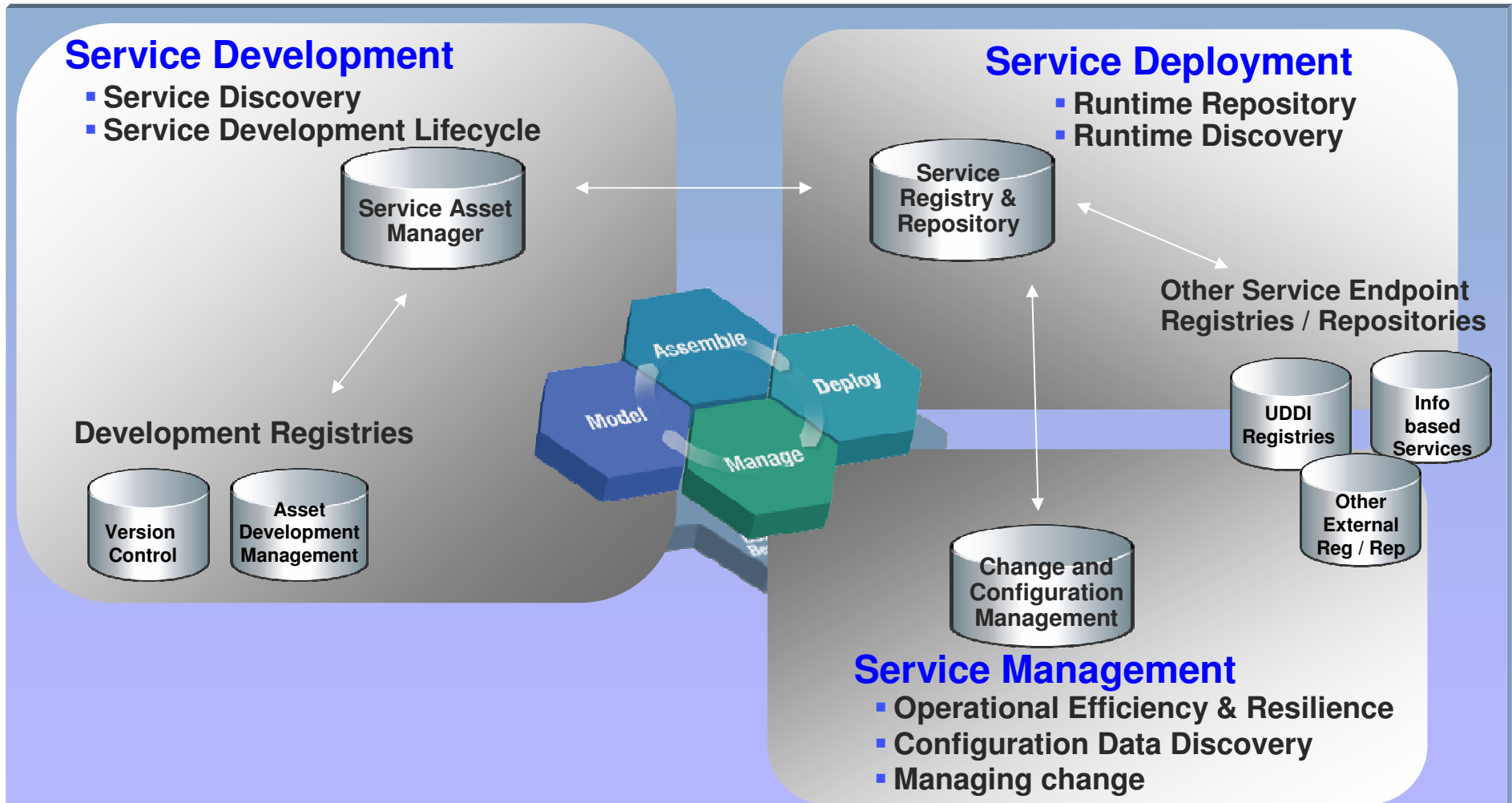| **Improve Organization Change capability**	**Use Proven Best Practices Approach**	**Develop customized processes faster**
SOA requires not just technical, but organizational education supplied with SGMM V2 documentation	*Detailed usage and process maps allow for faster development of SOA Governance environment*	*Creation of a COE and use of GBS expertise allows fast start based on initially supplied expertise*
▽	▽	▽
Accelerate acceptance of new SOA paradigm	**Minimize time and effort to get started**	**Create environment for SOA success with expertise and customized approach**

Each phase of the SOA Lifecycle has different *challenges* requiring different governance capability

Service Development

Optimizing service interactions to business process

Poor communication and collaboration within teams

Creating the same service multiple times

Service Deployment

Need to control and eliminate and "rogue services"

Service compliance important but difficult

Testing service interactions complex

Assemble

Deploy

Model

Manage

Service Management

Developing a governance approach requires corporate commitment

Enforcement of policies needed on-the-fly

Dynamic service reporting complex

Governance is supported by a federated set of capabilities to meet the challenges of service lifecycle management

Service Development
- Service Discovery
- Service Development Lifecycle

Service Asset Manager

Development Registries

Version Control

Asset Development Management

Service Deployment
- Runtime Repository
- Runtime Discovery

Service Registry & Repository

Other Service Endpoint Registries / Repositories

UDDI Registries

Info based Services

Other External Reg / Rep

Assemble

Deploy

Model

Manage

Change and Configuration Management

Service Management
- Operational Efficiency & Resilience
- Configuration Data Discovery
- Managing change

Successful SOA service strategy requires a deployment tool to manage and control services at runtime

Publish **Find**

Encourage Reuse
Find and reuse services for building blocks for new composite applications.

Govern

Enable Governance
Govern services throughout the service lifecycle

Enrich

Enhance Connectivity
Enable dynamic and efficient interactions between services at runtime.

Manage

Help optimize service performance
Enable enforcement of policies. Versioning. Impact analysis

Assemble

Deploy

Model

Manage

Governance & Best Practices

WebSphere Service Registry and Repository

Publish **Find** **Enrich** **Manage** **Govern**

Enhanced!

Service management and control will require the functionality in a federated registry/repository strategy

Promotes reuse and eliminate redundancies

- Publish and find services and related metadata through all stages of SOA
- Integration and federation with other standard registries and repositories

▼

Address the IT pain point of poor reuse and duplication

Enriches SOA runtime interaction

- Enable optimized access to service metadata
- Manage service interactions and policies

▼

**Reduce huge maintenance costs by enabling a flexible infrastructure**

Enables better control of SOA with governance

- Facilitates SOA focused service lifecycle management
- Analyze impacts of service introduction, retirement or alteration by maintaining relationships

▼

Eliminate lack of ownership and misalignment of activities with business initiatives

Service Development and Delivery Management focuses on creation and updating services as assets
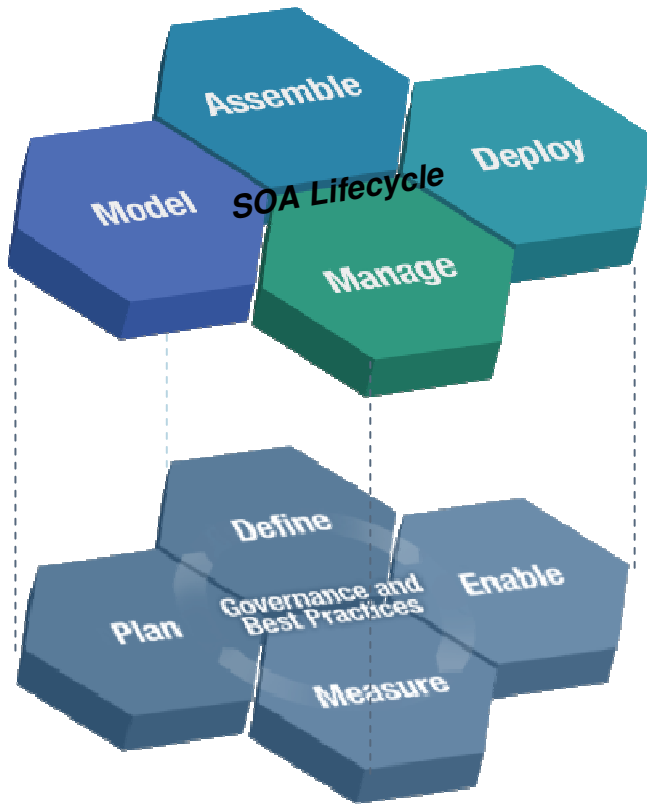
Service Lifecycle Management

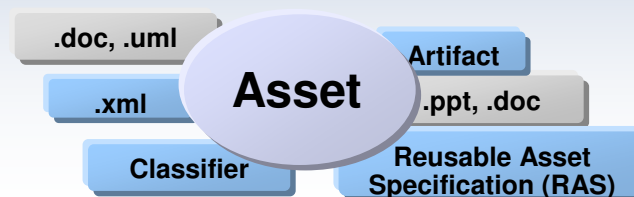| Service Development and Delivery Management	Infrastructure and Management In Support of SOA
Enforce, execute, automate process and policies	Monitor and control operational policies

SOA Governance

SOA Governance and Management Method

Establish Process, Policies and Organizational Change

Development and delivery asset management tracks IT assets needed to implement an SOA

- Uses Reusable Asset Specification (RAS) to describe/classify assets

- Handles multiple types of assets
  - Services, source code, documentation, presentations, patterns, process flows
    (Collections of artifacts associated with a particular business requirement)

- Benefits:
  - Reduce software development and operational costs
  - Improve quality by facilitating the reuse of approved & proven assets
  - Integrated with other Rational, Websphere and Tivoli products
  - Federated with Websphere Service Registry and Repository (WSRR)

.doc, .uml

Artifact

.xml

Asset

.ppt, .doc

Classifier

Reusable Asset
Specification (RAS)

An Asset Manager supports development and delivery management of services and composite business services

Rational Asset Manager (RAM) is a collaborative software development asset management solution for:

- *Design*
- *Development*
- *Consumption*

of services as part of an SOA initiative or other development environments

Rational Asset Manager

| Define | Search/ Retrieve | Create/ Modify | Measure | Govern |

Registries and Repositories can work separately or federated together based on the business/IT SOA requirements

- **Rational Asset Manager (RAM)**
  - Key requirement is tracking assets in a development environment
  - Beginning to be interested in creating services new asset
  - Converting current applications into Services

Rational Asset Manager

Define   Search/Retrieve   Create/Modify   Measure   Govern
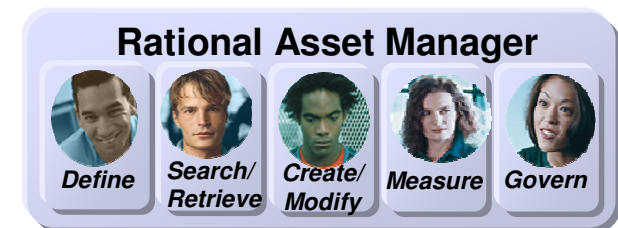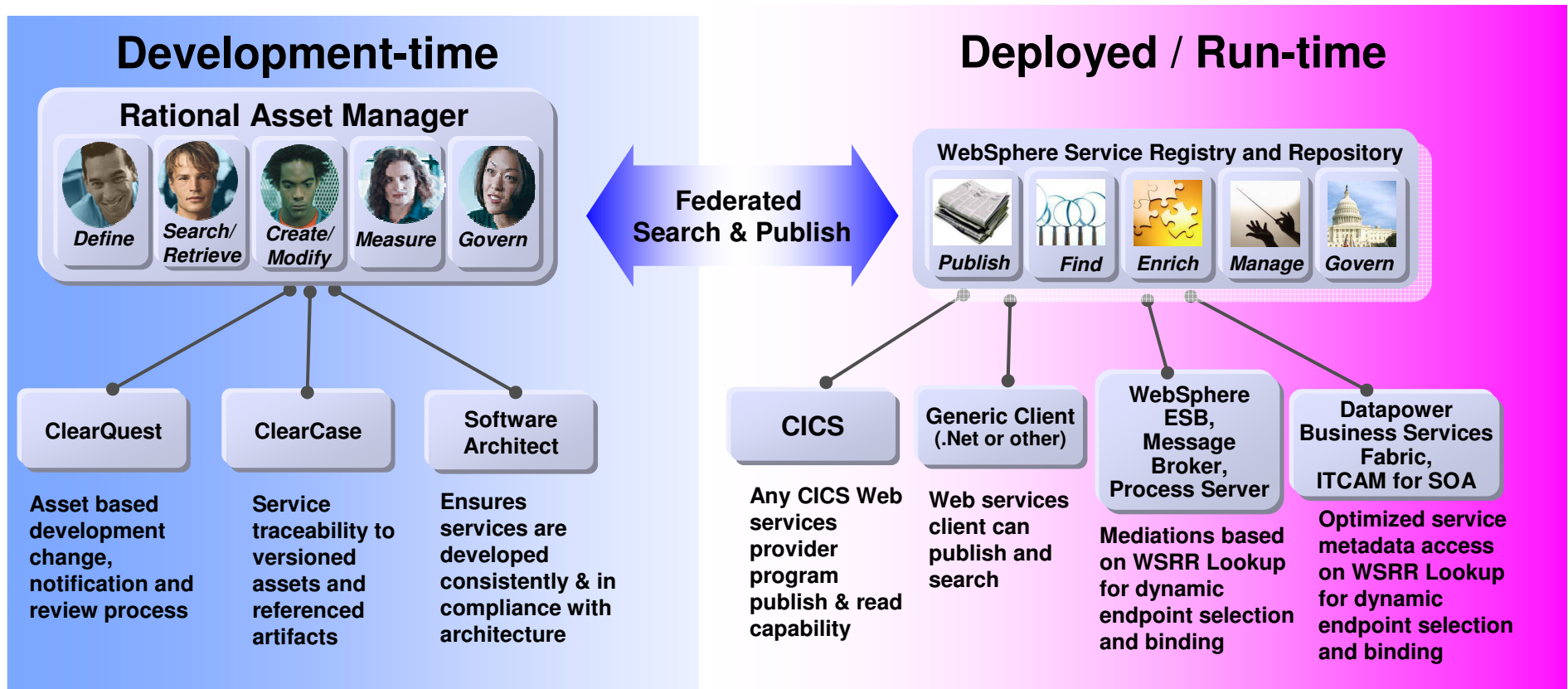
- **WebSphere Service Registry and Repository (WSRR)**
  - Bringing in Services to implement SOA
  - Web based environment moving to SOA
  - Managing Services in an operational environment
  - Services being used from many sources and/or repositories

WebSphere Service Registry and Repository

Publish   Find   Enrich   Manage   Govern

Development and deployment of services in SOA will have different requirements within the Lifecycle

Development-time

Rational Asset Manager

Define | **Search/ Retrieve** | **Create/ Modify** | **Measure** | **Govern**

Federated Search & Publish

Deployed / Run-time

WebSphere Service Registry and Repository

Publish | **Find** | **Enrich** | **Manage** | **Govern**

ClearQuest

Asset based development change, notification and review process

ClearCase

Service traceability to versioned assets and referenced artifacts

Software Architect

Ensures services are developed consistently & in compliance with architecture

CICS

Any CICS Web services provider program publish & read capability

Generic Client (.Net or other)

Web services client can publish and search

WebSphere ESB, Message Broker, Process Server

Mediations based on WSRR Lookup for dynamic endpoint selection and binding

Datapower Business Services Fabric, ITCAM for SOA

Optimized service metadata access on WSRR Lookup for dynamic endpoint selection and binding

➢ Not every deployed service is a reusable asset and not every reusable asset is a deployed service

➢ A service will be one of many types of assets managed by Rational Asset Manager

Improve business flexibility and service reuse within SOA development and deployment by adding Asset Manager

Improve quality while reducing development cost and time

- *Managing and facilitate software reuse of assets, including Services*
- *Drive improvements in end-to-end service quality*

▽

- **Accelerate delivery**
- **Increase quality**
- **Improve reliability**

Promote cross project communication of reusable assets

- *Promote reusable asset sharing*
- *implement a cross org workflow*
- *Faster delivery of assets*

▽

- **Unify disparate development teams**
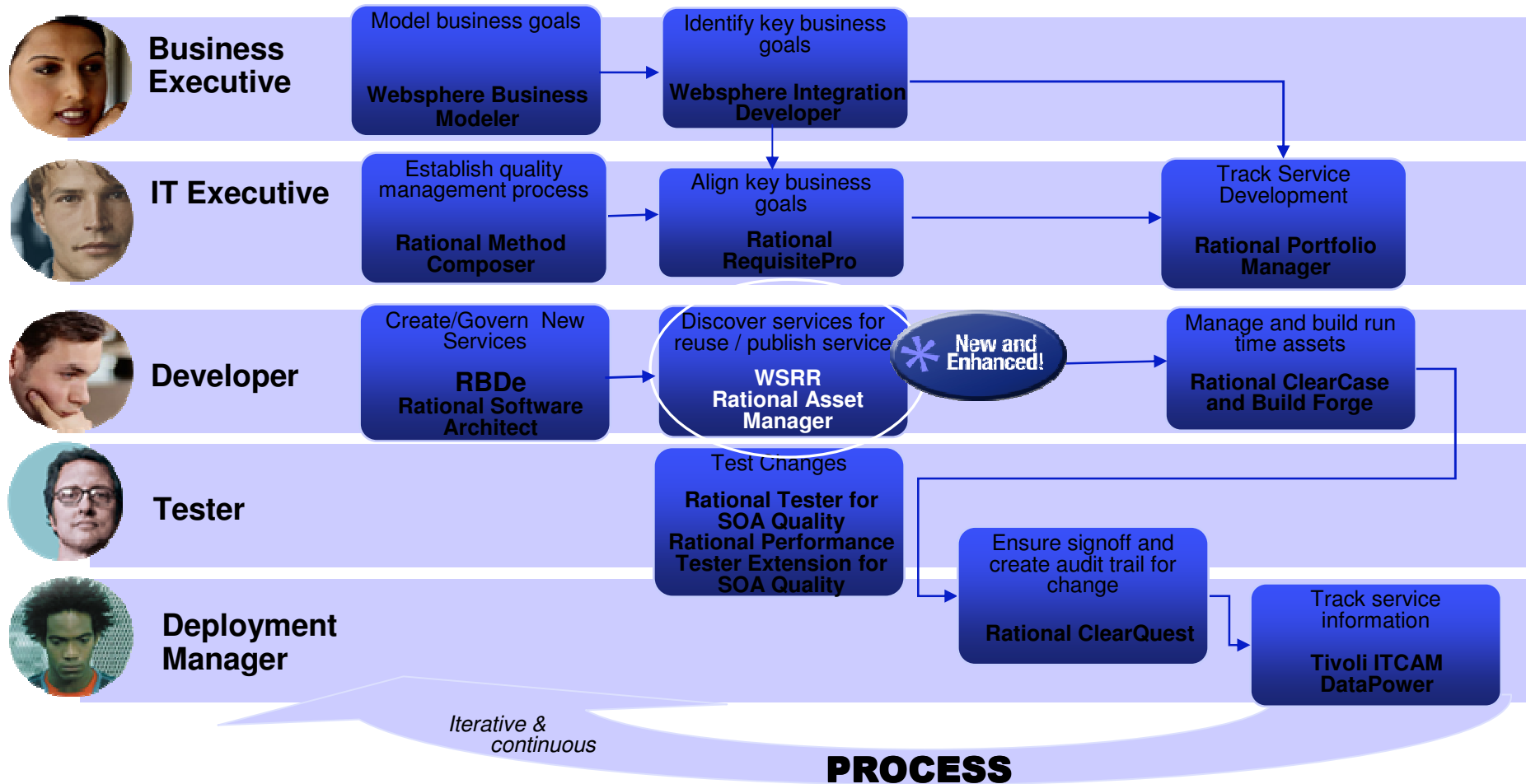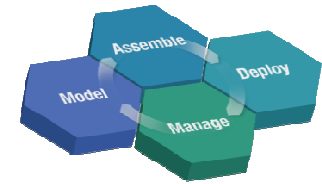- **Enable reuse and eliminate rework**

Manage compliance and govern multi-platform development assets to

- *Enforce and monitor integrity*
- *Definable and auditable processes*
- *Incorporated in overall SOA Governance*

▽

- **Enforce and govern architectural standards**
- **Control access and utilization of assets.**

Service Lifecycle Management tools enhance each team members ability to be successful

Business Executive

Model business goals

Websphere Business Modeler

Identify key business goals

Websphere Integration Developer

IT Executive

Establish quality management process

Rational Method Composer

Align key business goals

Rational RequisitePro

Track Service Development

Rational Portfolio Manager

Developer

Create/Govern New Services

RBDe
Rational Software Architect

Discover services for reuse / publish service

WSRR
Rational Asset Manager

New and Enhanced!

Manage and build run time assets

Rational ClearCase and Build Forge

Tester

Test Changes

Rational Tester for SOA Quality
Rational Performance Tester Extension for SOA Quality

Deployment Manager

Ensure signoff and create audit trail for change

Rational ClearQuest

Track service information

Tivoli ITCAM DataPower

Iterative & continuous

PROCESS

Key Takeaways

1. Adopt an end-to-end framework to support a long-term approach toward service orientation
2. Implement a Stakeholders Management & Communication Strategy to gain adoption of ESB and service orientation
3. Communicate clear roles and responsibilities, including job impacts, at various levels of the organization
4. Establish Governance Scenarios to promote an "enterprise view" on shared services
5. Integrate the Services Lifecycle into the current SDLC or systems delivery process
6. Apply lessons learned from previous enterprise effort to build momentum and gain support from management

Governance should not an "afterthought"; it matters because without it success is not achievable

Lack of working governance mechanisms in midsize-to-large (greater than 50 services) post-pilot projects will be the most common reason for project failure (0.8 probability). *(Gartner)*

Focus on business benefits

- Add flexibility to business process
- Improve time to market

Governance isn't optional- it's imperative. Without it, ROI will be low and every project out of pilot phase will be at risk. *(Gartner)*

Mitigate risk and regain control

- Maintain quality of service
- Ensure consistency of service

Professional investors are willing to pay premiums of 18-26% for stock in firms with high governance. (McKinsey Quarterly)

Improve team effectiveness

- Measure the right things
- Communicate clearly between business and IT