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# Managing Business Services Through Service Registry

Raghu Varadan  
Chief Architect – Business Enablement Services for SOA  
IBM WW SOA Center of Excellence  
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# What is ...?

## ... a service?

A **repeatable business task** – e.g., check customer credit; open new account

## ... service orientation?

A way of integrating your **business as linked services** and the outcomes that they bring

## ... service oriented architecture (SOA)?

An IT **architectural style** that supports service orientation

## ... a composite application?

A set of **related & integrated** services that support a business process built on an SOA



## Without proper management and governance of your SOA...

This could become...



*The promise of SOA*

... like this



*A pile of services*

**... and so would go the promised benefits of SOA**

A Registry Repository answers questions customer have about governing and managing their SOA

**How do I eliminate “rogue services” and ensure control of my SOA?**

**How do I govern services as part of my SOA?**

**How do I manage the services lifecycle?**

**How do I increase service reuse?**

**How do I enable enforcement of policies across all internal and external services?**



**How can I help my ESB execute in the right context?**

**How do I help services interact efficiently and dynamically with each other?**

**How do I optimize service interactions to be better aligned with business process?**

## Proper SOA governance answers customer questions about their SOA

### *What is IT governance?*

Establishing **decision making rights** associated with IT

Establishing **mechanisms and policies** used to measure and control the way IT decisions are made and carried out

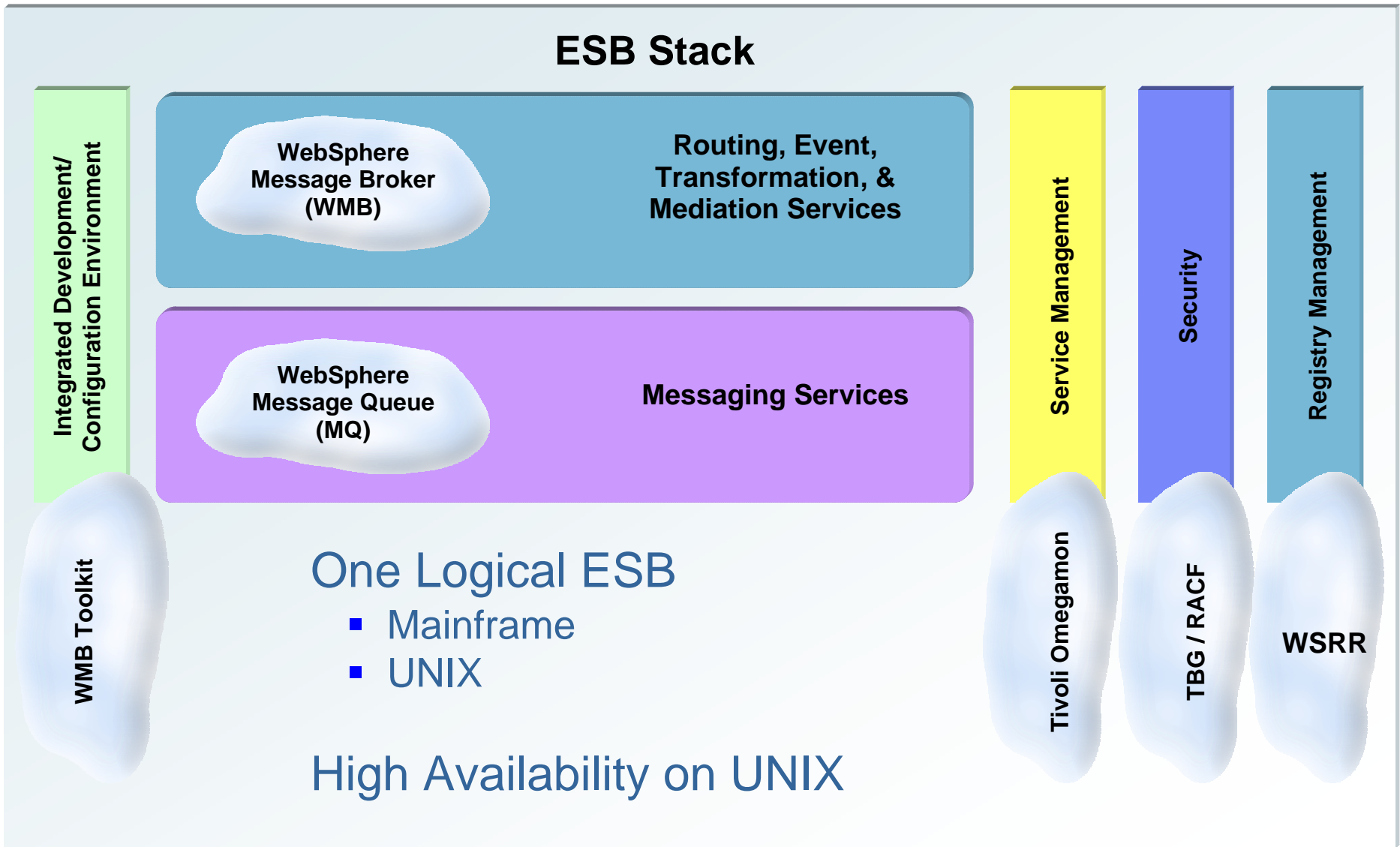
### *What is SOA governance?*

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

### *Why SOA Governance matters?*

- **Realize business benefits of SOA**
  - 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

# A Conceptual Architectural View



# What is a registry ... a repository?



## Registry?

Contains information about services such as...

- Service interfaces
- Descriptions
- Parameters



## Repository?

Stores information about the nature of service usage

*An integrated Registry / Repository Solution is needed govern and manage SOA for maximum value*



**Business process vitality**



**New value through reuse of assets**



**Improved connectivity**



**Closer alignment of IT to business**



**Business Flexibility**



## WSRR is a Critical Component of the ESB

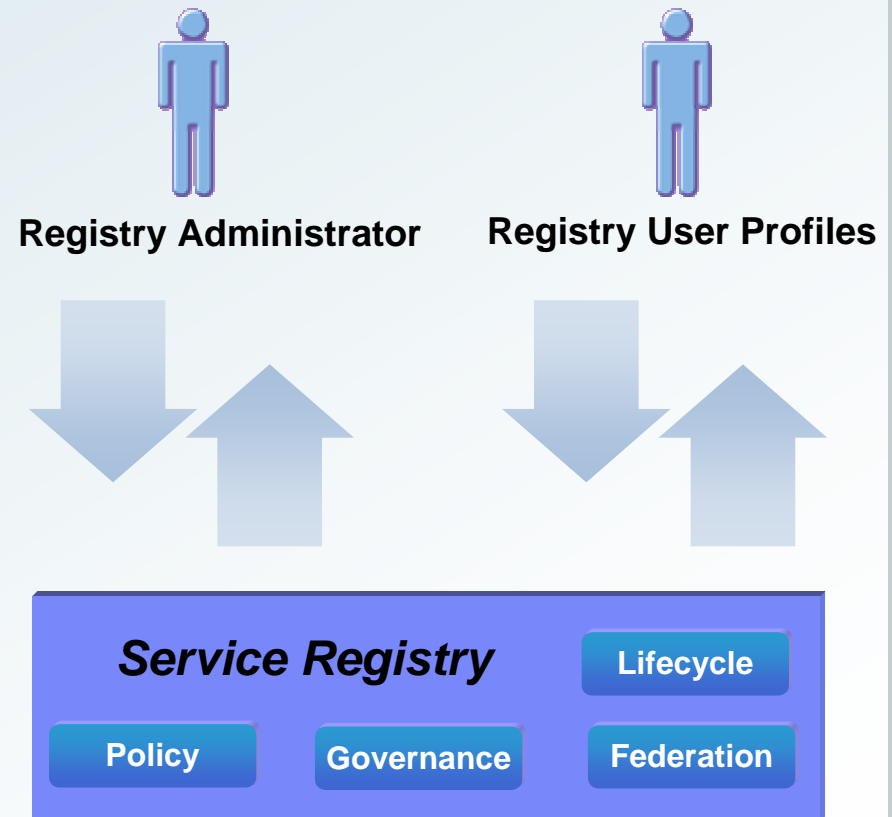
### Customer needs were:

- To easily discover services across the enterprise
- Control the consistency and integrity of new services - before they are published
- Enable change management with automatic subscription-based notifications
- Create customized information views
- Secure access to business services and artifacts
- Support run time look-up of services
- Provide content-based routing by established relationship type with message content
- Provide dynamic endpoint binding based on protocol affinity and service governance states



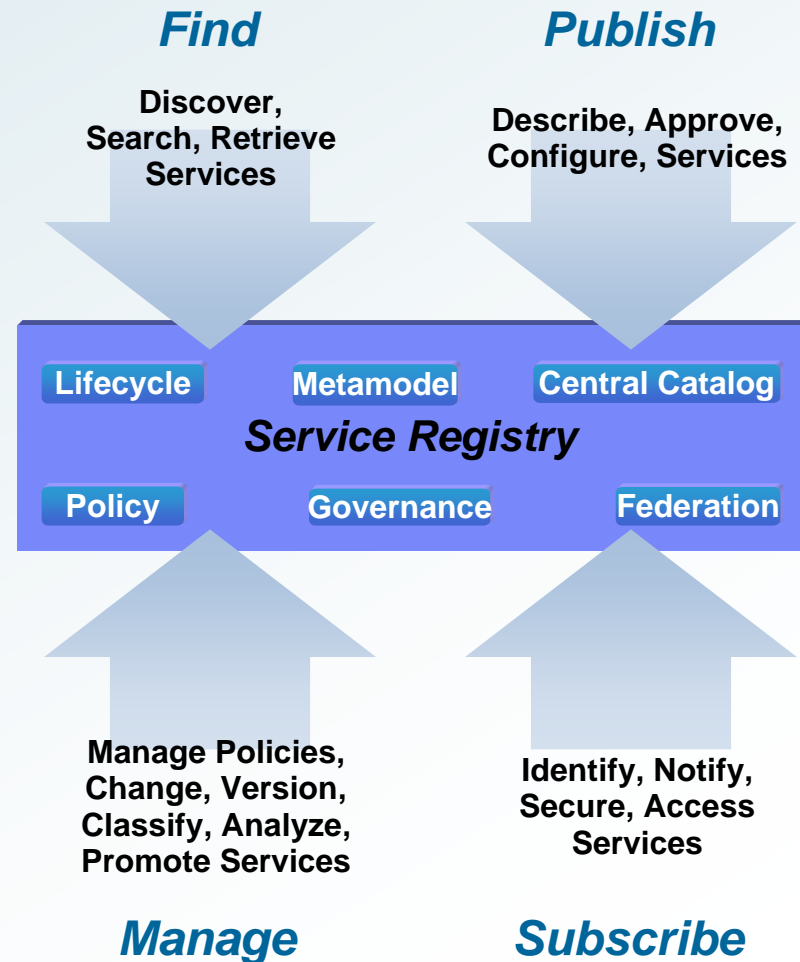
## WSRR Provides Support for Governance

- Service Registry supports the management of service meta-data, service lifecycle management and SOA governance
- Registry serves as a repository for service meta-data
- Maintain access control of registry data
- Centralized version management
- Track, monitor and update service lifecycle – from inception, through deployment and retirement
- Event notification triggered on service meta-data changes such as communication endpoint, lifecycle state, classification etc

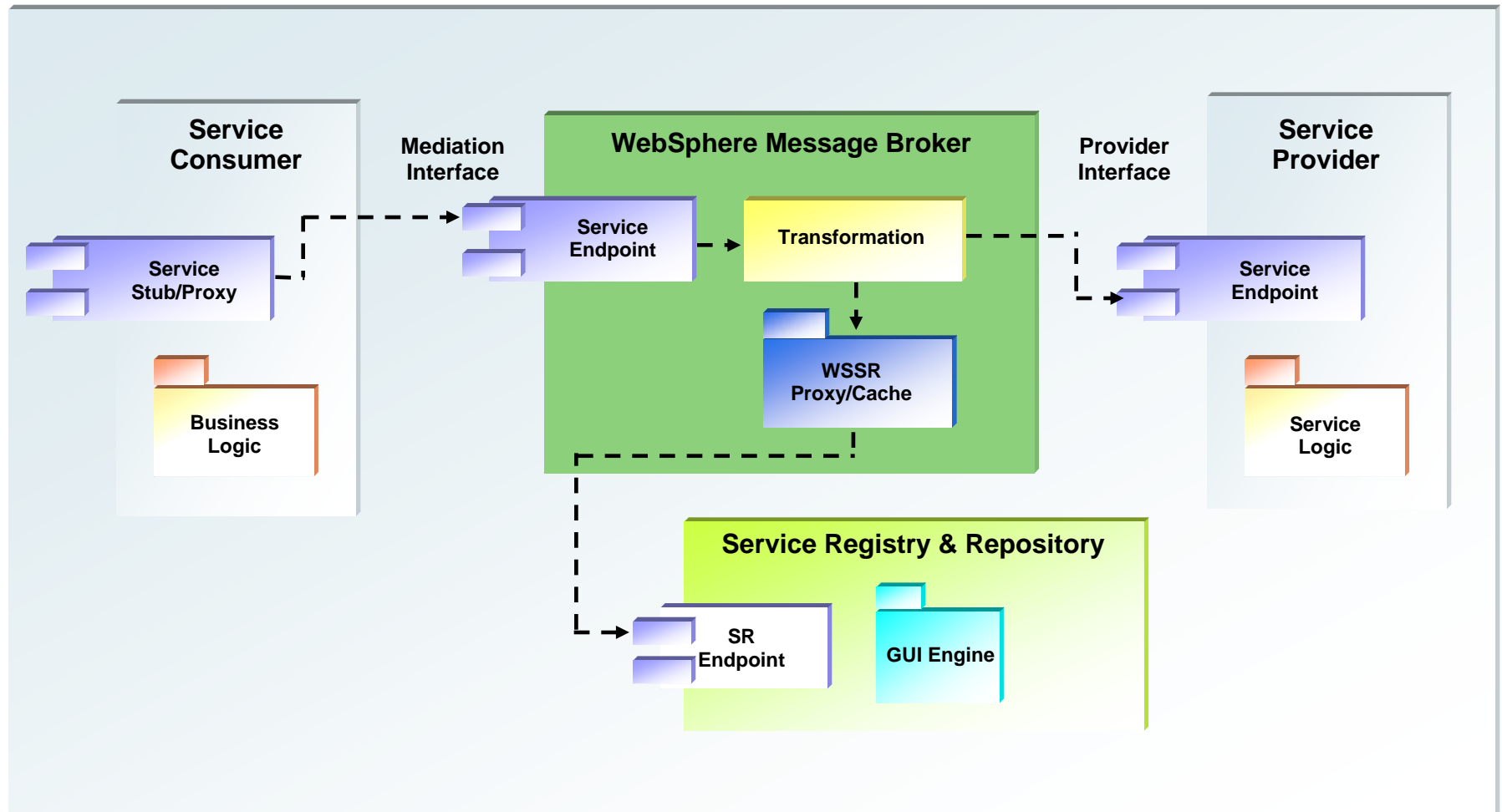


# WSRR Supports to Find, Publish, Manage and Subscribe to Services

- A service must be published by the provider, with meta-data such as classification, description, communication endpoints, before it can be used
- The service consumer discovers the service by performing search, list, or browse operations
- Administrators manage access control lists, permissions, version management, subscription lists, user permissions
- Subscribers are notified of change events: Service endpoint modified event, state change event and meta-data change event



# Scenario - WSRR Provides Endpoint Resolution



# Overview of Features

## ■ Manage service lifecycle

- Publish service
  - Manage artifacts and metadata
  - Configure variation of type relationship: binding
  - Establish a subscription list for notification
  - Classify and organize service taxonomy
- Discover service
  - Browse taxonomy and conduct service search
  - Download artifacts
  - Subscribe to service notification
  - Associate service at design-time
  - Exercise the variation of type relationship: binding
- Manage service states
  - Business and IS lifecycle states
    - Enumerate the possible states
  - Notify upon state change

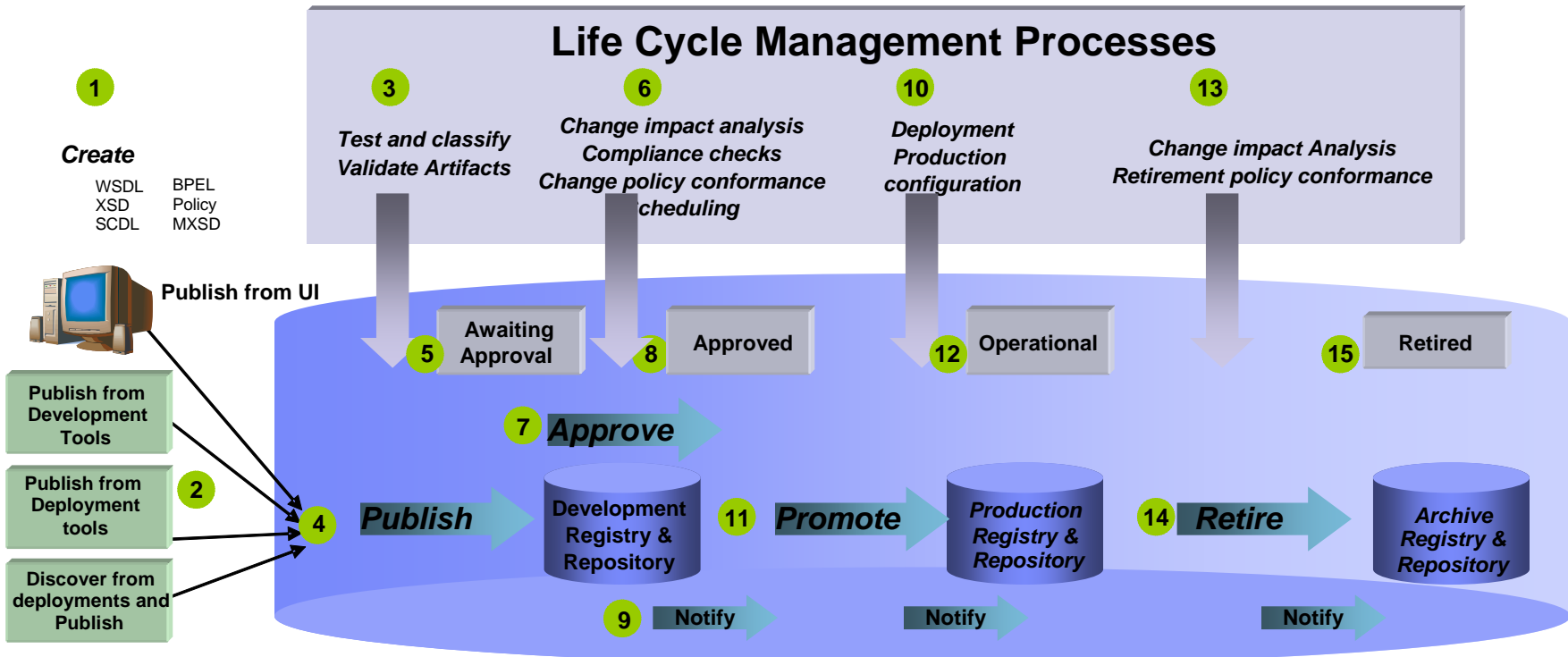
## ■ Intra-System Federation

- Manage registry through development lifecycle
  - Promotion of entries among the stage of development
    - Development
    - QA
    - Stage
    - Production
  - Deployment mechanism
    - Automation
    - Procedures

## ■ Security

- Basic peripheral security
- Role-based ACL for WSRR management
- Role-based access control via the configurable governance model

# WSRR – SOA Governance Interactions



1. Service metadata artifacts are created  
 2. Tools, utilities and users publish servicemetadata to the Service Registry & Repository  
 3. LCM processes enforce testing, classifying and validation  
 4. Service and metadata is Published  
 5. Service is assigned a state of AWAITING APPROVAL

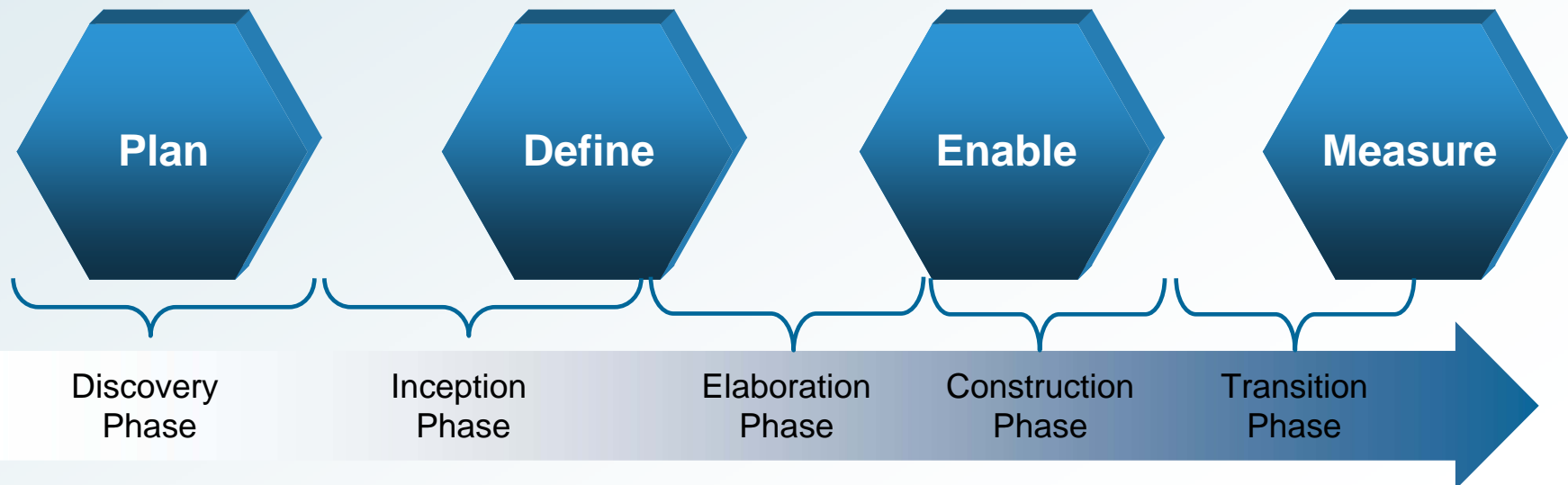
6. LCM processes drive impact analyses, compliance checks, change policy conformance and scheduling.  
 7. Service is approved  
 8. Service is assigned a state of APPROVED  
 9. Notifications are Generated

10. LCM processes drive: Deployment Production configuration  
 11. Service is promoted to production environment  
 12. Service is assigned an OPERATIONAL state.  
 Notifications Generated

13. LCM processes drive: impact of retiring retirement policy  
 14. Service is retired  
 15. Service is assigned an RETIRED state.  
 Notifications Generated

## End to End Scope

- **What** has to be done in a shared-service lifecycle?
- **What** is the scope of policies that are used to enforce governance?
- **When** is oversight and control appropriate and by whom?
- **Who** has the authority?
- **Where** is governance enforced (e.g., when published, at consumption)?
- **How** should the governance decisions be made?
- **How** is the service capability measured, to include milestones & conformance checkpoints?



# Integration Through ESB

- **ESB enables connectivity to all resources and assets in your SOA**

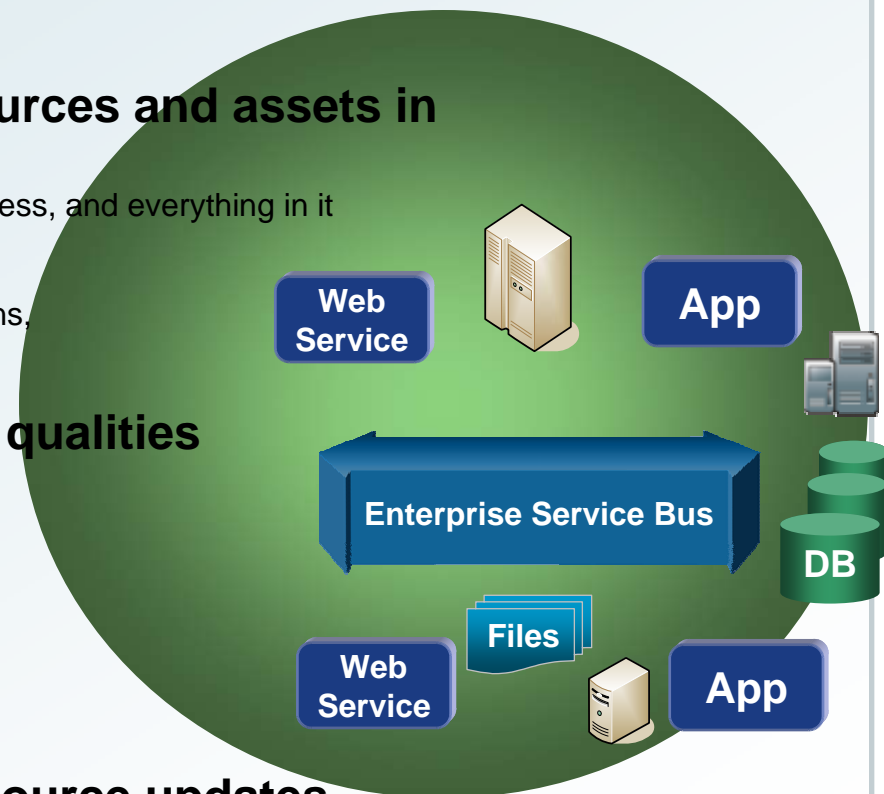
- Up to the minute information from all parts of the business, and everything in it
- Accelerate ROI for packaged applications
- Make your files and file-based data work for you
- Extending the lifecycle and value of existing applications, systems and data

- **Flexible, powerful configuration and qualities of service**

- 24x7 production environments, with clustering and high availability
- Hot deployment of new applications and services with powerful version control
- Full Transaction support (JTS/JTA, EJBC, JMS, XA and 2 phase commit)

- **Secure your data and coordinate resource updates**

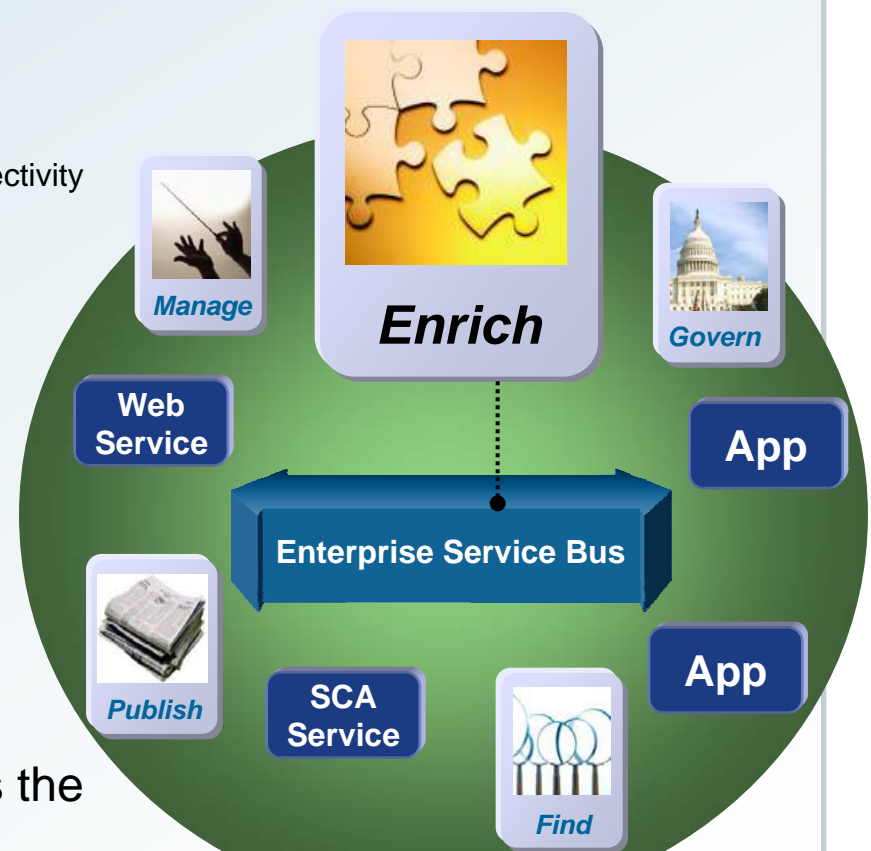
- Update multiple resources in a transaction
- Security end-to-end from one application to another, without additional programming
- Extend the transaction to include different messaging providers
- Transaction coordination across multiple systems and geographies





## Service Registry Adding Value: Enriched ESB Interaction

- **Enhance connectivity**
  - Central, integrated service registry and service metadata repository
  - Help optimize service usage and performance across connectivity layer
- **Enrich ESB interaction**
  - Enable dynamic and efficient interactions between services at runtime
  - New Mediation capabilities allows dynamic endpoint lookup and selection
- **Help optimize service performance**
  - Enable enforcement of policies, Impact analysis
- **Better Control Enabling Governance**
  - Govern services throughout the service lifecycle
- **Federated service lifecycle support across the enterprise**
  - Integration and federation with other standard registries and repositories providing one reliable authoritative service reference



*Encourage Reuse, Enhance Connectivity and Enable Governance with WebSphere ESB and WebSphere Message Broker, extended with WebSphere Service Registry and Repository*

## Benefits and Summary

- The customer and IBM jointly worked in developing and shaping requirements for WebSphere Service Registry and Repository
- WebSphere Message Broker providing Advanced ESB capabilities
- WebSphere Service Registry and Repository enriching ESB interactions with dynamic selection and endpoint resolution

### *Feature*

### *Benefit*

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



Promote reuse and eliminate redundancies

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



Enrich SOA runtime interaction

- Facilitate service lifecycle with guards for state transitions
- Analyze impacts of service introduction, deletion or alteration by maintaining relationships
- Manage role based access to services, changes, versioning and service retirement



Better control of SOA with governance



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**Thank you**  
**Q & A**

## Resources

### **WebSphere Service Registry and Repository website**

[www.ibm.com/software/integration/wsrr](http://www.ibm.com/software/integration/wsrr)

### **WSRR Information Center**

<http://publib.boulder.ibm.com/infocenter/sr/v6r0/index.jsp>

### **Technical articles:**

**- Introducing IBM WebSphere Service Registry and Repository, Part 1: Day in the Life of the Service Registry and Repository**

[http://www.ibm.com/developerworks/websphere/library/techarticles/0609\\_mckee/0609\\_mckee.html](http://www.ibm.com/developerworks/websphere/library/techarticles/0609_mckee/0609_mckee.html)

**- Introducing IBM WebSphere Service Registry and Repository, Part 2: Architecture, APIs, and content**

[http://www-128.ibm.com/developerworks/websphere/library/techarticles/0609\\_mckee2/0609\\_mckee2.html](http://www-128.ibm.com/developerworks/websphere/library/techarticles/0609_mckee2/0609_mckee2.html)

### **IBM SOA website**

[www.ibm.com/soa](http://www.ibm.com/soa)

### **SOA Governance website**

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