IBM SOA Summit

*Informations valorisées et SOA, le couple gagnant.

IBM

SOA Governance
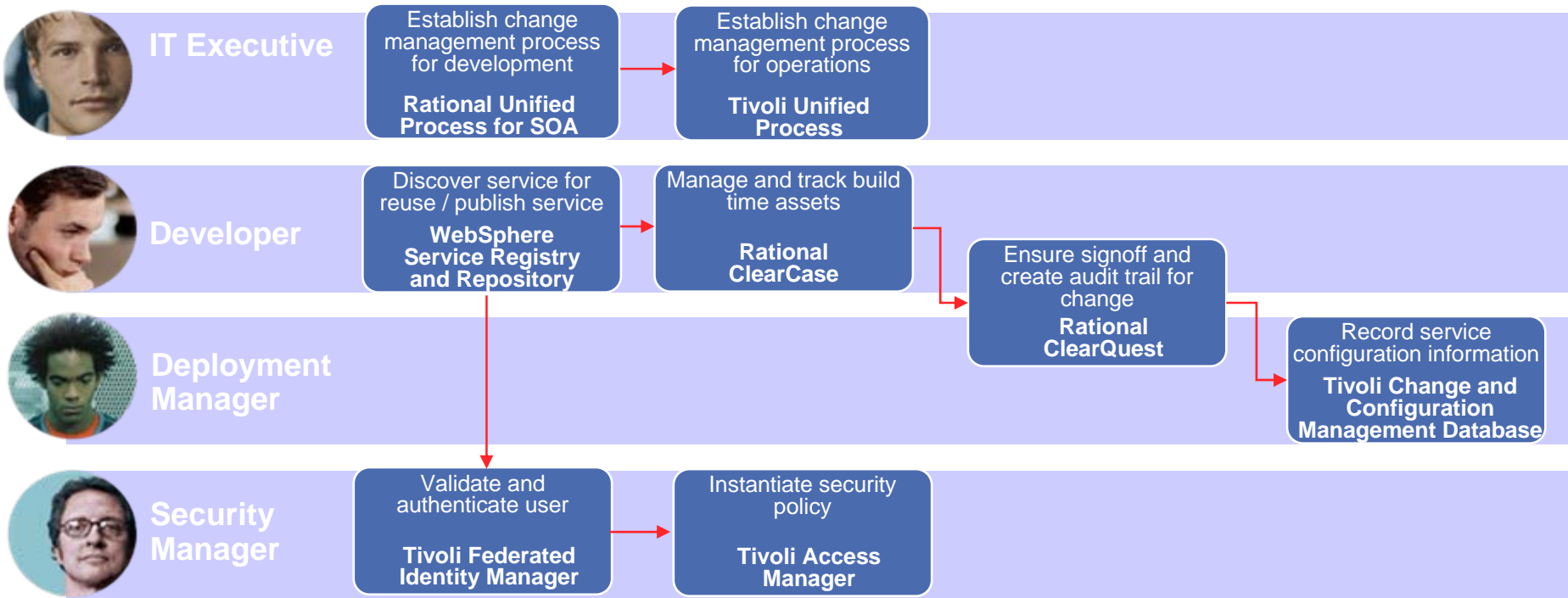# Rational Method Composer

Francis Geysermans
SOA Architect
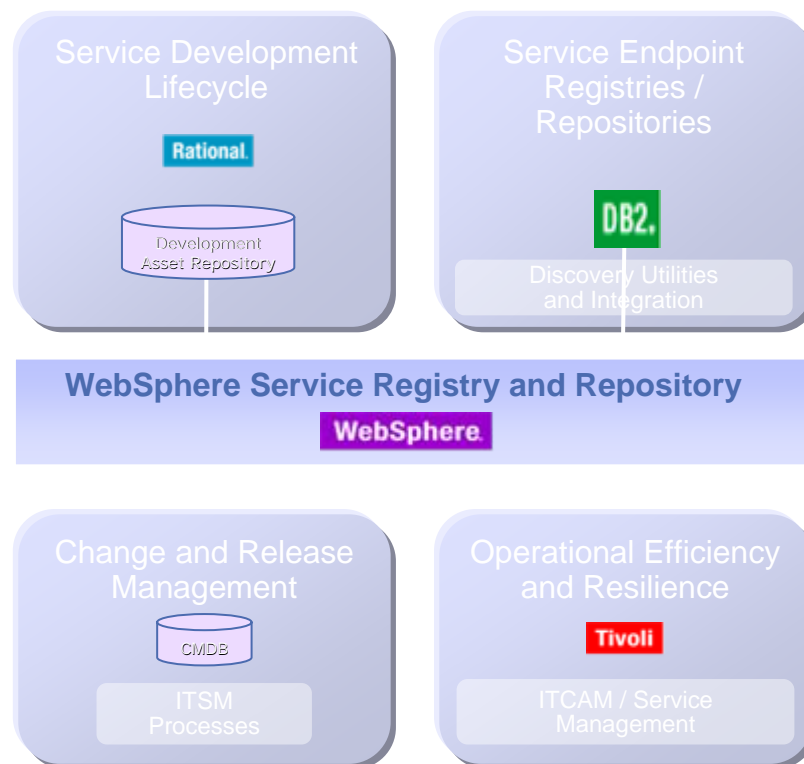
Managing the lifecycle of assets

IBM

IT Executive

Establish change management process for development

Rational Unified Process for SOA

→

Establish change management process for operations

Tivoli Unified Process

Developer

Discover service for reuse / publish service

WebSphere Service Registry and Repository

→

Manage and track build time assets

Rational ClearCase

Ensure signoff and create audit trail for change

Rational ClearQuest

Record service configuration information

Tivoli Change and Configuration Management Database

Deployment Manager

Security Manager

Validate and authenticate user

Tivoli Federated Identity Manager

→

Instantiate security policy

Tivoli Access Manager

How IBM can Help

- Best practices and methods
  - **IBM SOA Governance and Management Method**
  - IBM Rational Unified Process for SOA
  - IBM Tivoli Unified Process
    for Change Management

- Tools to manage assets
  and govern access
  - **IBM WebSphere Service Registry
    and Repository**
  - **IBM Tivoli Change & Configuration
    Management Database**
  - IBM Rational ClearCase
  - IBM Tivoli Federated Identity Manager
  - IBM Tivoli Access Manager
  - IBM Rational ClearQuest

- Available expertise and services
  - IBM Business Enablement Services for SOA
    - SOA Center of Excellence to help facilitate
      SOA adoption
  - IBM Infrastructure Services for SOA readiness, design
    and optimization

Service Development Lifecycle
Rational.
Development Asset Repository

Service Endpoint Registries / Repositories
DB2.
Discovery Utilities and Integration

WebSphere Service Registry and Repository
WebSphere.

Change and Release Management
CMDB
ITSM Processes

Operational Efficiency and Resilience
Tivoli
ITCAM / Service Management

Websphere Service Registry and Repository

What is it?

➤ A solution to securely register business services for finding, publishing and notifying changes to SOA infrastructure components.
➤ House the metadata about business services in managing the lifecycle of a service in SOA

How does it help you with governance?

➤**Captures service dependencies to support change management**
Provides a dependency analysis to assist in the analysis of a change

➤ **Policy management and association with services**
Supports the tracking of service metadata as it makes its way through its governed life cycle

➤ **Extensible framework to support validation and notification**
Offers the ability to provide custom validation routines on state transitions
Generates change notifications using pre-defined and user-defined notification schemes

What is a registry … a repository?

Registry?
Contains information about services such as…
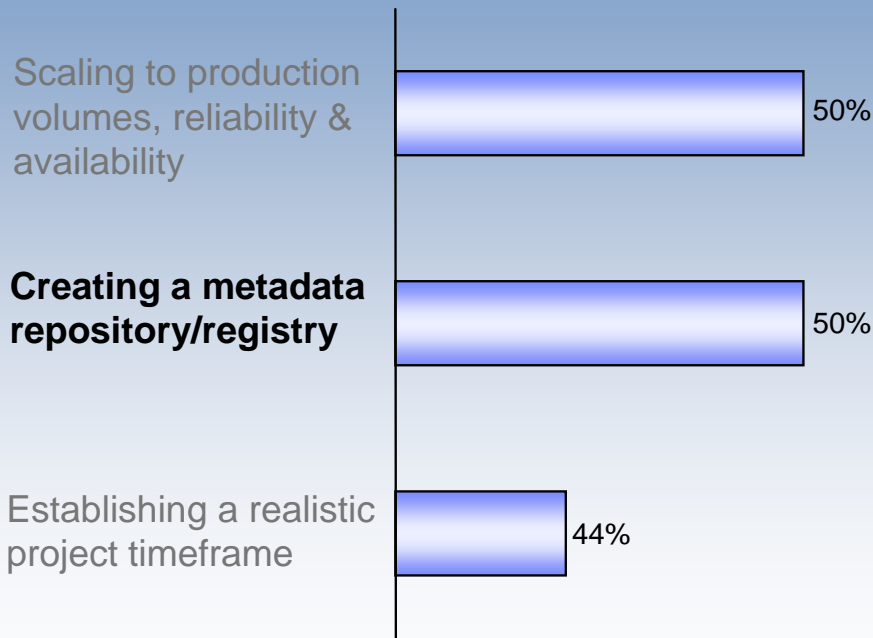- Service interfaces
- Descriptions
- Parameters

Repository?
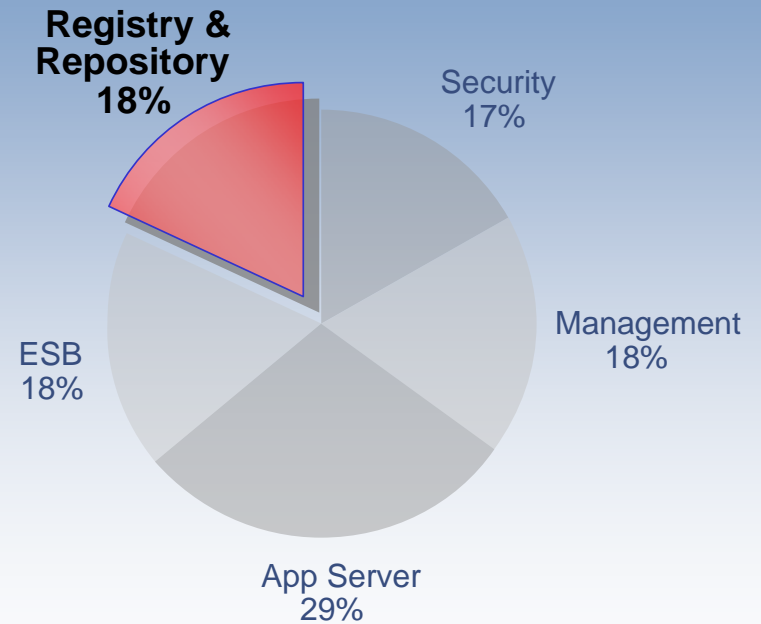**Stores information about the nature of service usage**

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

Importance of a Registry and Repository

Top 3 Technological Challenges of Adopting SOA

Scaling to production volumes, reliability & availability — 50%

Creating a metadata repository/registry — 50%

Establishing a realistic project timeframe — 44%

Middleware considered most important in an SOA

- **Registry & Repository 18%**
- Security 17%
- Management 18%
- App Server 29%
- ESB 18%

Motivation for a Service Registry/Repository

- **As the number of services in SOA infrastructures increase, it becomes increasingly important to have a system of services**
  - Find and Publish services
  - Manage service lifecycle
  - Support policy driven service interactions
  - Change Notification
  - Central Service Metadata Repository

- **A Service Repository manages service metadata enabling selection, invocation, management, governance and reuse of services leading to a successful SOA**

- **UDDI is satisfactory for simple endpoint lookups - but**
  - Not well suited for more advanced, general service metadata artefact retrieval
  - Does not own the artefacts so cannot manage their change
  - Requires proprietary decomposition and mapping conventions for emerging artefact types, relationships between artefacts, increasing artefact granularity, consumer SLA requirements and governance support

What sorts of Meta-data?

Service Description Entities

Physical Documents

- **WSDL**
- **XSD**
- **WS-Policy**
- **XML -** *User-defined Documents*
- **…..**

Logical derivations

- **Interface**
- **Operation**
- **Message**
- **Type**
- **Service**
- **Binding**
- **Endpoint**
- **…..**

Concepts

- *User-defined by classification*
- **Business Application**
- **Business Process**
- **Governed Collection**
- **External reference**
-

Service Description Metadata

Properties

- **name**
- **namespace**
- **version**
- **description**
- **modifiedDate**

- **name**
- **namespace**
- *User-defined*
- *metrics*

- *User-defined*
- **owner**
- *externalURL*

Relationships

- **imports**
- **includes**
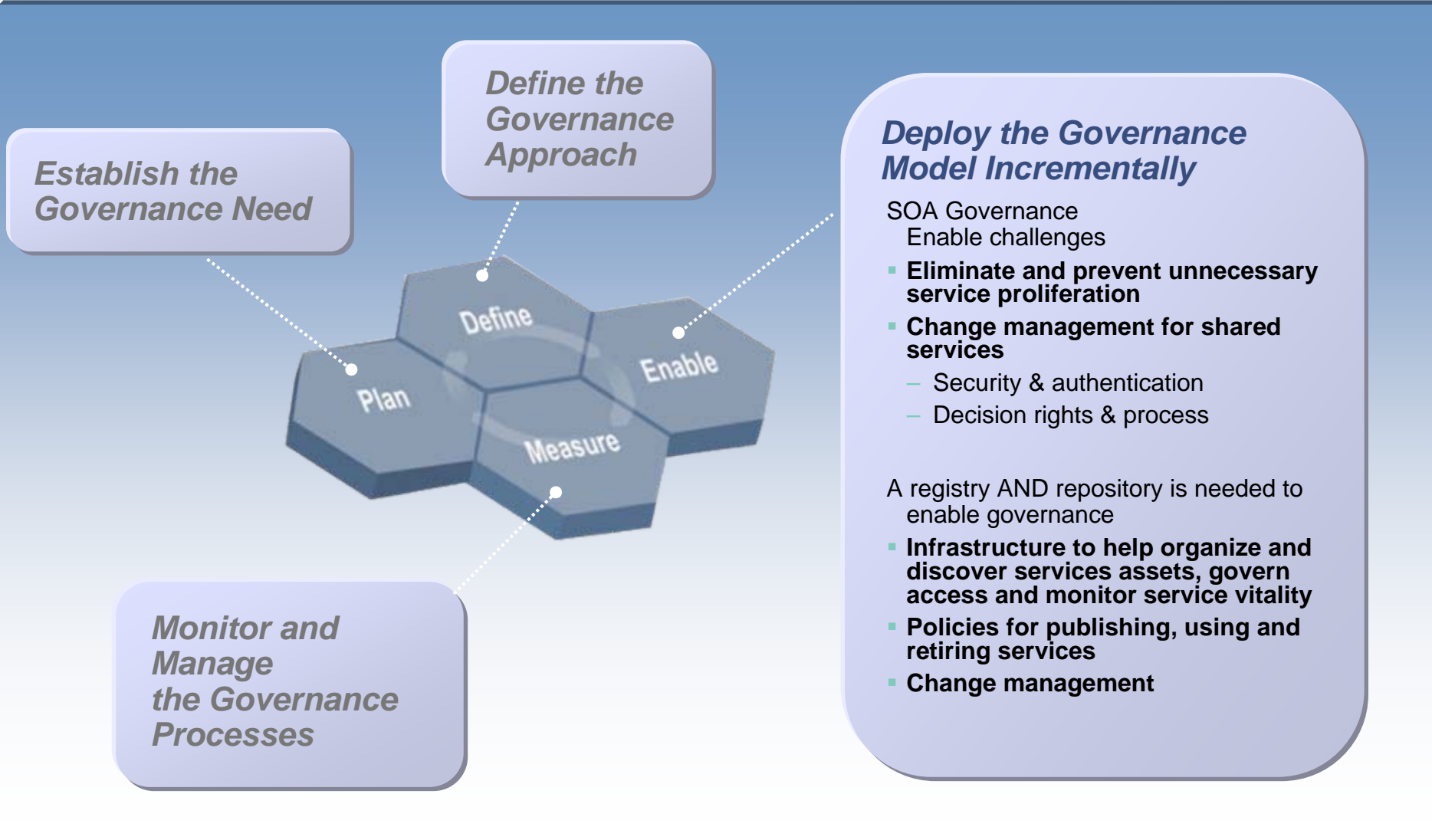- **predecessor**
- *User-defined*

- **derivedFrom**
- **operations**
- **messages**
- *User-defined*

- *User-defined*
- *dependantServices*
- *serviceInterface*
- *governedEntities*
- *policies*
- *…..*

Classifications

- *User-defined States*
  - *Created*
  - *Approved*
  - *Published*
  - *Operational*

- *User-defined Environments*
  - *Development*
  - *Test*
  - *Approval*
  - *Production*

- *User-defined Concepts*
  - *Application*
  - *Process*
  - *Capability*

- *Standard Ontologies*
  - **NAICS**
  - **UNSPSC**
  - **ISO3166**

A registry and repository enables SOA governance

Establish the Governance Need

Define the Governance Approach

Deploy the Governance Model Incrementally

SOA Governance
Enable challenges

- **Eliminate and prevent unnecessary service proliferation**
- **Change management for shared services**
  - Security & authentication
  - Decision rights & process

A registry AND repository is needed to enable governance

- **Infrastructure to help organize and discover services assets, govern access and monitor service vitality**
- **Policies for publishing, using and retiring services**
- **Change management**

Define

Plan

Enable

Measure

Monitor and Manage the Governance Processes

WSRR provides value throughout the SOA lifecycle

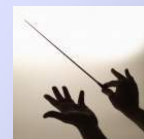**WebSphere Service Registry and Repository**

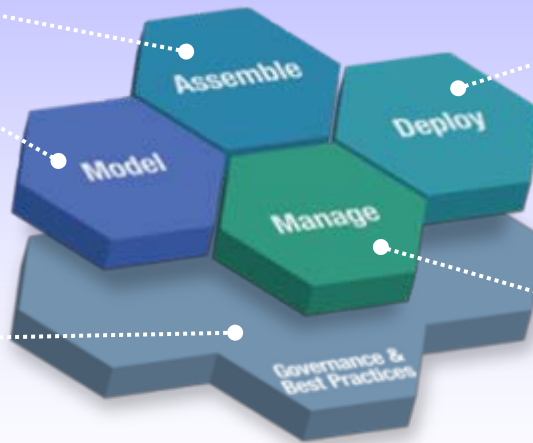*Publish* *Find* *Enrich* *Manage* *Govern*

Publish *Find*

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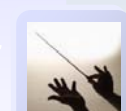Find and reuse services for building blocks for new composite applications.

Enrich

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

Govern

Enable Governance
Govern services throughout the service lifecycle

Manage

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

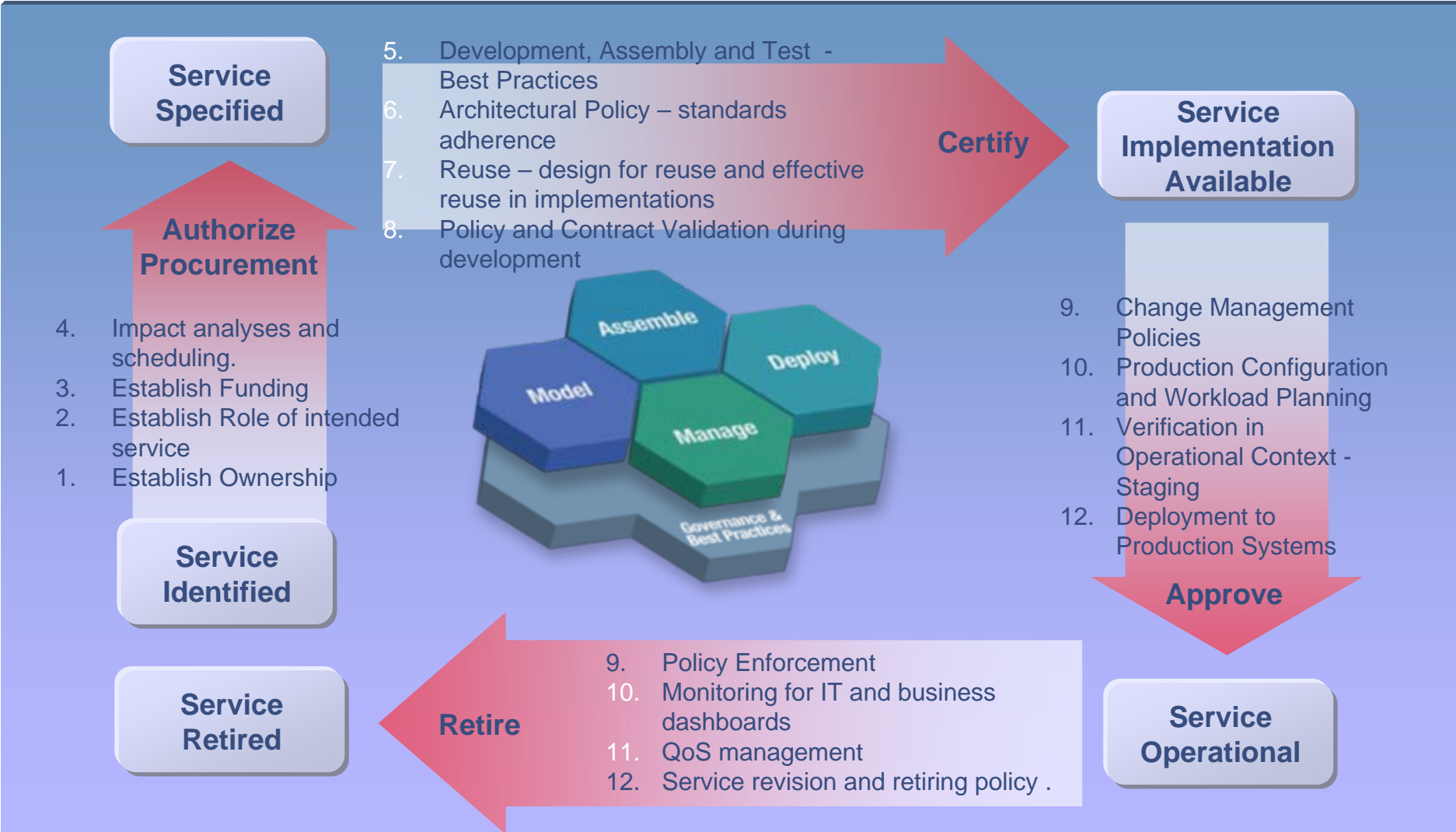# IBM WebSphere Service Registry and Repository

Govern

Enable Governance
Govern services throughout the service lifecycle

- Infrastructure to help organize and discover services assets, govern access and monitor service vitality

- Classification of services by lifecycle phase

- Policies for publishing, using and retiring services

- Roles based access

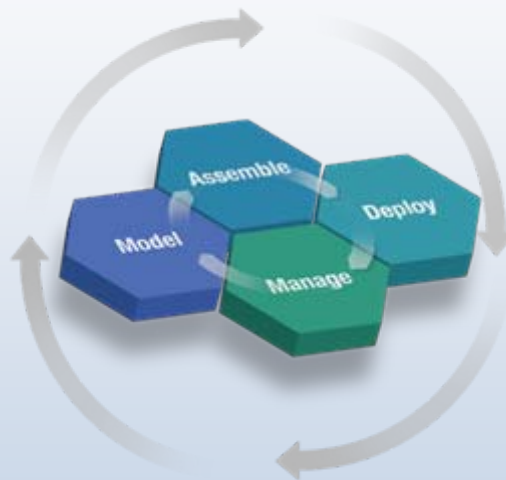# How it works: Enabling governance and management of the services lifecycle

IBM

Service Specified

Authorize Procurement

5. Development, Assembly and Test - Best Practices
6. Architectural Policy – standards adherence
7. Reuse – design for reuse and effective reuse in implementations
8. Policy and Contract Validation during development

Certify

Service Implementation Available

4. Impact analyses and scheduling.
3. Establish Funding
2. Establish Role of intended service
1. Establish Ownership

9. Change Management Policies
10. Production Configuration and Workload Planning
11. Verification in Operational Context - Staging
12. Deployment to Production Systems

Service Identified

Assemble
Deploy
Model
Manage
Governance & Best Practices

Approve

Service Retired

Retire

9. Policy Enforcement
10. Monitoring for IT and business dashboards
11. QoS management
12. Service revision and retiring policy .

Service Operational

An Open standards Foundation for WSRR

Requirements

Governance of entire SOA lifecycle

Integration with existing:
- Tools
- Runtime environments
- Management systems

WebSphere Service Registry and Repository

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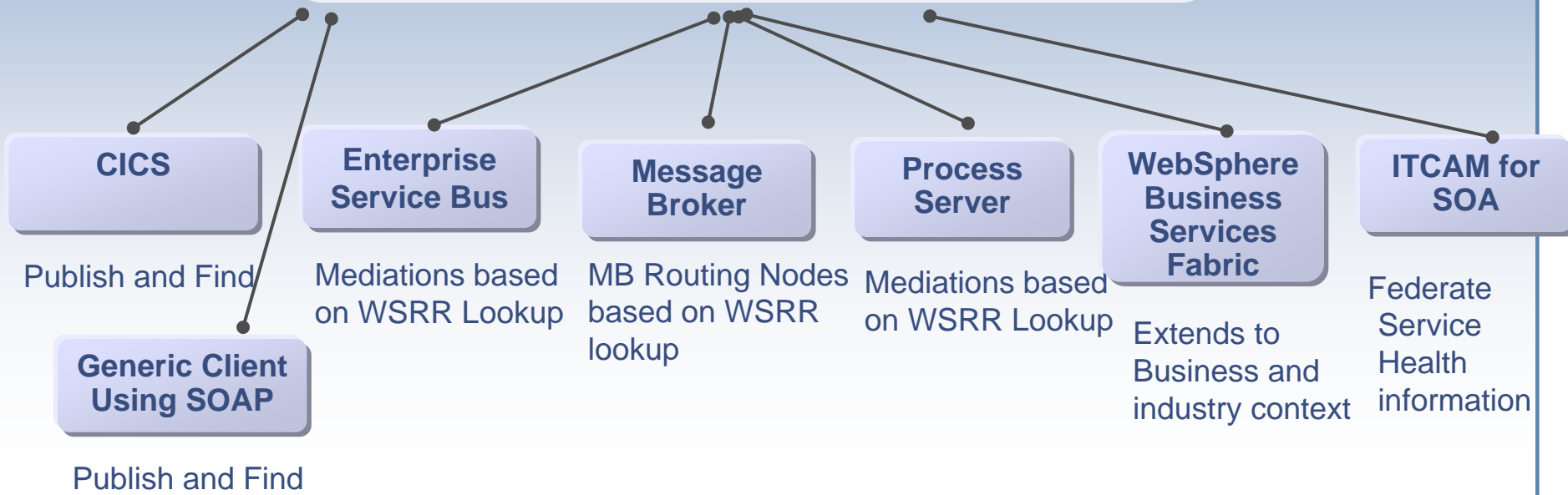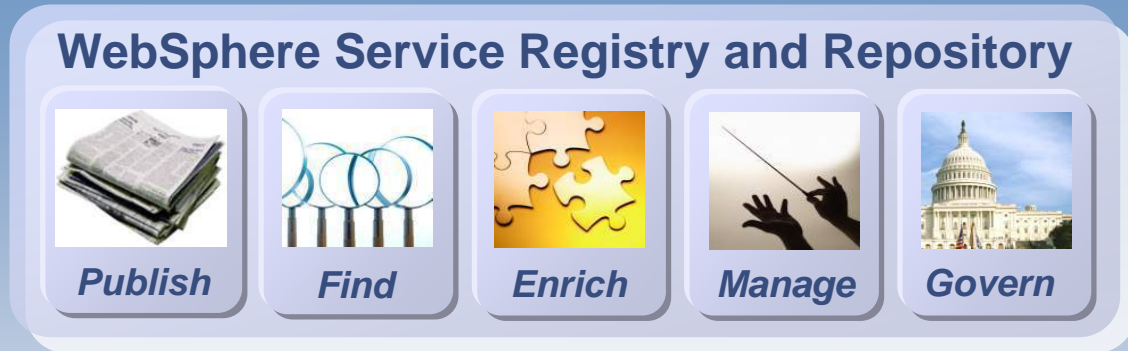
Assemble

Deploy

Model

Manage

Open Standards Foundation

Store and search standard service artifacts
(WSDL, XSD, WS-Policy, OWL)

Existing Web services standards interoperability
(SOAP, WS-Security, …)

Integration with UDDI

WSRR Integration with IBM SOA Products

WebSphere Service Registry and Repository

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

CICS

Publish and Find

Generic Client Using SOAP

Publish and Find

Enterprise Service Bus

Mediations based on WSRR Lookup

Message Broker

MB Routing Nodes based on WSRR lookup

Process Server

Mediations based on WSRR Lookup

WebSphere Business Services Fabric

Extends to Business and industry context

ITCAM for SOA

Federate Service Health information